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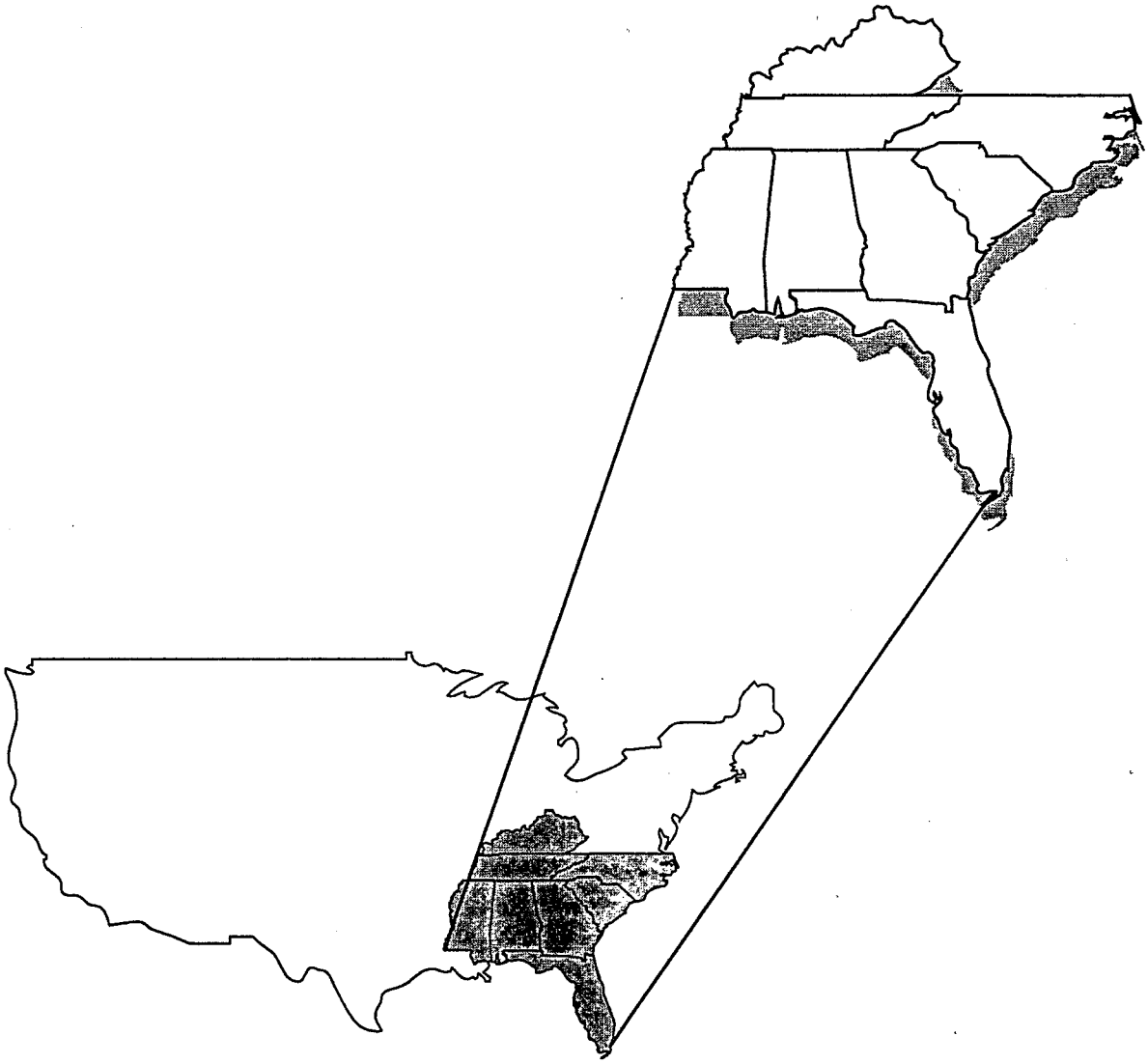
Market Opportunities for Innovative Site Cleanup Technologies:

Southeastern States



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U.S. Environmental Protection Agency
Office of Solid Waste and Emergency Response
Technology Innovation Office
Washington, DC 20460

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FOREWORD

The size and scope of the nation's hazardous waste problem have been well documented. In our 1993 report *Cleaning Up the Nation's Waste Sites: Markets and Technology Trends* (PB93-140762), we provided a national perspective on the overall size of markets (Federal, state, local, and private) for hazardous waste remediation technologies. This regional market report provides a detailed and updated view of specific market opportunities at waste sites located in the Southeastern region of the country. It highlights opportunities for innovative hazardous waste site cleanup in Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee. The information contained in this report covers Superfund, Resource Conservation and Recovery Act (RCRA) corrective action, petroleum Underground Storage Tanks (UST), Federal facility, and state cleanup programs.

The purpose of the report is to provide, under one cover, information on sites in the region that could potentially result in market opportunities for innovative site cleanup technologies. The sites and programs highlighted in each state represent those that would appear to provide the best near term opportunities for cleanup technologies (2 to 5 years). The contents of this report come from a number of state and Federal sources and represent a compilation of the best, accessible data we could identify. We have sought to provide the most detailed data available on the specific sites and programs, although available information sources for some programs are limited. The report seeks to uncover potential leads for site cleanup opportunities and to give sufficient contact information to allow interested parties to follow-up on those leads.

We would like to thank the staff from state waste programs who contributed their time and information to the report. We would also like to thank EPA headquarters and regional personnel for their contributions of data and subsequent review of the completed report.

Walter W. Kovalick, Jr., Ph.D.
Director, Technology Innovation Office

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LIST OF ACRONYMS

AOC	Area of Concern
AST	Aboveground Storage Tank
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CLU-IN	Clean-Up Information Bulletin Board System
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
DENIX	Defense Environmental Network for Information eXchange
DEP	Division of Environmental Protection
DEQ	Department of Environmental Quality
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DNREC	Department of Natural Resources and Environmental Control
DoD	Department of Defense
DOE	Department of Energy
EI	Environmental Indicators
EPA	Environmental Protection Agency
FFID	Federal Facility Identification Number
FTP	File Transfer Protocol
FUDS	Formerly Used Defense Site
FY	Fiscal Year
HRS	Hazard Ranking System
HSCA	Hazardous Sites Cleanup Act
LUST	Leaking Underground Storage Tank
MCL	Maximum Contaminant Level
MDE	Maryland Department of the Environment
NASA	National Aeronautics and Space Administration
NPL	National Priorities List
O&M	Operation and Maintenance
OSWER	Office of Solid Waste and Emergency Response
OUST	Office of Underground Storage Tanks
PA	Preliminary Assessment
PADEP	Pennsylvania Department of Environmental Protection
PAH	Polyaromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PCE	Perchloroethylene
PNA	Polynuclear Aromatics
POL	Petroleum, Oil, and Lubricants
PRP	Potentially Responsible Party
RA	Remedial Action
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Information System
RD	Remedial Design
RELAI	Responsive Electronic Link Access Interface

LIST OF ACRONYMS (continued)

RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI/FS	Remedial Investigation and Feasibility Study
RID	ROD Information Database
ROD	Record of Decision
RP	Responsible Party
RPM	Remedial Project Manager
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection
SNAP	Superfund NPL Assessment Program
SVOC	Semivolatile Organic Compound
SWMU	Solid Waste Management Unit
TCE	Trichloroethylene
TIO	Technology Innovation Office
TSD	Treatment, Storage, and Disposal
USDA	U.S. Department of Agriculture
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VISITT	Vendor Information System for Innovative Treatment Technologies
VOC	Volatile Organic Compound
VRP	Voluntary Remediation Program

1.0 INTRODUCTION AND SUMMARY OF FINDINGS

The purpose of this report is to provide vendors and developers of innovative hazardous waste site treatment technologies a resource to determine potential technology needs present in the Southeastern states in order to support them in developing marketing plans for the region. This report was prepared under the direction of the Office of Solid Waste and Emergency Response (OSWER) Technology Innovation Office (TIO) of the U.S. Environmental Protection Agency (EPA). It provides information on potential site clean-up marketing opportunities in EPA's Region 4, which covers Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee. This regional market report is a companion to a 1993 national survey report developed by TIO, *Cleaning up the Nation's Waste Sites: Markets and Technology Trends.* That report presented a broad national survey of the potential markets for innovative hazardous waste remediation technologies, and this report presents more specific descriptions to help identify potential markets in the Southeastern region. For the purposes of this report, innovative treatment technologies for remediation are defined as those technologies for which a lack of cost and performance data inhibit their routine consideration and use.

This introductory section presents the purpose and scope of the report, a description of the methodology used to collect market information, a brief discussion of the market-driving regulatory programs at the EPA regional level, an overview of market opportunities at the state levels, and a general discussion of potential markets available at Federal facilities. In Region 4, the Federal facility universe consists, for the most part, of Department of Defense (DoD) installations and Department of Energy (DOE) facilities. The remainder of this section provides summary findings for the Region, along with a discussion of technologies that have been employed throughout the Region and a discussion of how to use the document.

The main body of the report, Sections 2 through 9, provides detailed accounts of the potential markets for innovative hazardous waste remediation technologies in each Southeastern state. This report also contains four appendices: Appendix A contains a list of DoD installations taken from DoD's *Defense Environmental Response Program Annual Report to Congress for Fiscal Year 1994* with two or fewer sites or estimated costs for cleanup of less than or equal to $1 million (larger sites are described in the individual state chapters); Appendix B contains EPA-produced fact sheets concerning the Brownfields Economic Redevelopment Initiative; Appendix C contains information on various Federal environmental investigation and remediation contracts of potential interest to vendors of innovative remediation technologies; and Appendix D contains a list of references used to prepare this report.

The main findings of this report are:

- Underground storage tank (UST) sites (not including USTs on DoD facilities; DoD USTs are discussed as part of DoD sites) present the greatest opportunity, in terms of absolute number of sites (There are 27,401 confirmed release UST sites that require cleanup), though not in complexity of remediation tasks, for marketers of innovative remediation technologies, followed by DoD sites, Superfund National Priorities List (NPL) sites, and in states that maintain an abandoned hazardous waste site programs, abandoned hazardous waste sites managed by the state.*

- There are more than 557 Resource Conservation and Recovery Act (RCRA) treatment, storage, or disposal (TSD) facilities in EPA Region 4 of which 16 are currently under a requirement to conduct a corrective measures study (CMS), indicating that a corrective action will be conducted at the facility in the near future. Of the RCRA TSDs, 223 have been required to conduct an RCRA facility investigation (RFI). Based on EPA experience at sites nationwide, the majority of those facilities are also likely to undergo some form of corrective action. RCRA facilities subject to corrective action, at which a requirement for a CMS or a RFI has been imposed, are the smallest market in terms of absolute number of sites. However, as time passes, the RCRA segment of the market is likely to grow. RCRA facilities may, however, represent longer term opportunities.

- There are 174 sites in Region 4 that are listed on the NPL of which 97 present potential opportunities for marketers of innovative remediation technologies. At those 97 sites, there are 248 operable units that require remediation.

- There are 1,265 hazardous waste sites that require remediation under state programs.

- There are 97 DoD installations in Region 4. On those installations, there are 1,023 sites at which cleanup is planned.

- There are 6 DOE facilities in Region 4. At those facilities, there are 73 sites at which cleanup is planned.

- Birmingham, Alabama; Prichard, Alabama; Atlanta, Georgia; Clearwater, Florida; Miami, Florida; Louisville, Kentucky; Charlotte, North Carolina; and Knoxville, Tennessee have been designated as pilot project sites under the Brownfields Economic Redevelopment Initiative.

- Innovative remediation technologies have been selected for use at 40 NPL sites, DoD sites, DOE sites, or RCRA sites in Region 4.

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* Information on RCRA and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites are from data gathered in the summer of 1995. Numbers have been updated in the UST and state programs based on comments from officials in these programs.

1.1 Purpose and Scope

This report provides a vendor interested in exploring remediation market possibilities in the Southeastern region with information to determine whether there is a potential need for the technology the vendor sells and in which states the opportunities for marketing can be found. TIO believes that the report will be a valuable tool for vendors interested in determining future markets for their technologies. The report provides vendors with an overview of the regional market by identifying, on a state by state basis, promising opportunities at RCRA facilities, sites listed on the Superfund NPL, and Federal facilities. TIO believes that these resources will provide marketers of innovative technologies with an improved capability to initially identify opportunities and to augment their marketing strategies.

The report illustrates the general state of the remediation market in Region 4 by highlighting specific information on individual facilities and government installations in need of remediation. The report also provides information on the potential predisposition of EPA and the states to use innovative technologies as solutions to problems related to the remediation of hazardous wastes by identifying past uses of such technologies. To the extent possible, information is supplied in an identical format for each state, so that comparisons can be made among the states of the numbers and types of opportunities that might be available to vendors. However, the level of detail varies from state to state, depending on the amount of data available and the accessibility of the data.

1.2 Remediation Programs at the EPA Regional Level

This section discusses hazardous waste remediation programs in EPA Region 4. Although UST programs are run by the states, RCRA authorities are delegated to the states, and Superfund programs can be complemented by the states, regional staff of the Waste Management Division are responsible for EPA oversight of those activities. The EPA Region 4 Waste Management Division consists of two offices, the Office of RCRA and Federal facilities and the Office of Superfund and Emergency Response. UST activities are handled by the Water Management Division Groundwater Protection Branch, UST Section. Information on opportunities in UST remediation and at Federal facilities is provided in Sections 1.3 and 1.4.

RCRA

In the Office of RCRA are the RCRA Permitting and Compliance Branch and the Federal Facilities Branch. (The Federal Facilities Branch is composed of two sections, each responsible for all remedial

activities at either DoD or DOE facilities in the Region.) The Permitting and Compliance Branch has two sections, one manages permits and the other manages compliance. Each section has four units:

- North Carolina and South Carolina
- Georgia and Florida
- Kentucky and Tennessee
- Alabama and Mississippi

The permits section also is responsible for corrective action activities.

In the 1984 Hazardous and Solid Waste Amendments (HSWA) to RCRA, Congress directed EPA to require corrective action for all releases of hazardous waste and hazardous constituents from solid waste management units (SWMU) at facilities seeking RCRA permits (that is, hazardous waste treatment, storage, on disposal facilities or TSDs) regardless of the time at which waste was placed in the units.

SWMUs are discernable units at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. SWMUs typically include landfills, surface impoundments, waste piles, tanks, land treatment units, container storage areas, incinerators, wastewater treatment units, waste recycling units, injection wells, and other physical, chemical or biological treatment units. SWMUs also may include areas where routine and systematic releases to the environment have occurred, such as loading and unloading areas or "kickback drippage" areas located at wood preserving facilities.

The RCRA corrective action process is structured around four elements common to most clean up activities: initial site assessment (RCRA Facility Assessment or RFA); site characterization (RCRA Facility Investigation or RFI); interim actions; evaluation of remedial alternatives (RCRA Corrective Measures Study or CMS); and implementation of the selected remedy (RCRA Corrective Measures Implementation or CMI). These elements typically occur, to one degree or another, during most clean ups.

Owners or operators of facilities subject to RCRA corrective action will proceed to limited or full-scale site characterization (that is, RFI) after the RFA is performed. Release assessments (sometimes referred to as Phase 1 assessments) also are used to confirm or reduce uncertainty about SWMUs, areas of concern (areas which warrant investigations, regardless of whether they are associated with a specific SWMU), and potential releases identified during the RFA.

A successful RFI will identify the presence, movement, fate, and risks associated with environmental contamination at a site and will determine the chemical and physical properties of the site likely to influence contaminant migration and cleanup. Data produced by the RFI also will be used to evaluate remedial alternatives specified by the CMS. Under the RCRA corrective action program, EPA intends to clean up sites in a manner consistent both with the CERCLA program and with available, protective, risk-based cleanup standards (such as maximum contaminant levels [MCL] and state cleanup standards). When such standards do not exist, EPA will clean up sites to the level of the protective clean up standards for media developed through a site-specific risk assessment.

The CMI involves detailed remedy design, remedy construction, remedy operation and maintenance, and remedy completion and generally is conducted in accordance with an approved plan.

Interim actions may be used to control or abate ongoing risks to human health and the environment in advance of the final remedy selection. Interim actions at RCRA facilities can include a wide range of activities, such as source removal, installation of a pump-and-treat system, and institutional controls. The importance of interim actions at RCRA corrective action facilities is emphasized in EPA's Stabilization Initiative that requires interim actions to be employed as early in the corrective action process as possible, consistent with the environmental objective and priorities for the site. Generally, interim actions should be compatible with, or a component of, the final remedy.

RCRA corrective action is implemented through the permitting process for TSDFs and corrective action orders. Corrective action and schedules of compliance are required for facilities seeking a permit, when corrective action cannot be completed prior to permit issuance. Typically, corrective action orders have been used to address releases of hazardous waste at interim status facilities.

Vendors interested in competing for work should focus on those facilities where a CMS has been imposed and not yet been approved, because, in such cases, technology vendors may not yet have been chosen. The event "CMS imposed" was chosen as a good indicator of facilities requiring corrective action in the near-term. Once a CMS has been imposed, it is almost certain that corrective action will be performed at a facility. Information on the number of RFIs also is included because it gives a general indication of sites that will also undergo corrective action in the near future. Also, due to the stabilization initiative, not every facility to be remediated will require a CMS. The stabilization initiative encourages near-term measures ranging from exposure controls through pump-and-treat systems to contain groundwater. These measures need to be implemented as early in the process as possible, preferably in the RFI. The stabilization

initiative directs implementers to stabilize facilities and then proceed to the next high priority facility, instead of proceeding through to the final remedy. These sites also may present near-term opportunities.

Table 1-1 below indicates the total number of facilities in Region 4 regulated under RCRA, the number of facilities where a CMS has been imposed, and the number of facilities where a CMS has been approved. The number of facilities with a CMS imposed is not a direct subset of RCRA treatment, storage, and disposal (TSD) facilities, instead it is a subset of TSD facilities and hazardous waste generators. While TSD facilities are statutorily required to address corrective action, EPA has discretionary authority to impose corrective action on generators.

Table 1-1
Total Number of RCRA Facilities and Facilities
Where a Corrective Measures Study Has Been Imposed or Approved in Region 4

State	RCRA Facilities	RCRA Facilities Where A Corrective Measures Study Has Been Imposed[a]	RCRA Facilities Where A Corrective Measures Study Has Been Approved[b]
Alabama	55	4	3
Florida	90	4	2
Georgia	98	8	3
Kentucky	80	1	0
Mississippi	33	1	0
North Carolina	72	8	3
South Carolina	68	2	1
Tennessee	61	1	1
TOTAL	557	29	13

Source: RCRIS Regional Oversight database, June 1995

a Facilities where a CMS has been imposed are identified here because they present the best marketing opportunities for innovative technology vendors.

b Facilities where a CMS has been approved are identified here because they also present marketing opportunities for innovative technology vendors.

Table 1-2 below indicates the total number of facilities in Region 4 regulated under RCRA, the number of facilities that have an RFI imposed, and the number of facilities where an RFI has been approved. The number of facilities with an RFI imposed is not a direct subset of RCRA TSD facilities, instead it is a

subset of TSD facilities and hazardous waste generators. While TSD facilities are statutorily required to address corrective action, EPA has discretionary authority to impose corrective action on generators.

Table 1-2
Total Number of RCRA Facilities and Facilities
Where a RCRA Facility Investigation Has Been Imposed or Approved in Region 4

State	RCRA Facilities	RCRA Facilities Where A RCRA Facility Investigation Has Been Imposed[a]	RCRA Facilities Where A RCRA Facility Investigation Has Been Approved[b]
Alabama	55	32	5
Florida	90	43	7
Georgia	98	64	23
Kentucky	80	18	1
Mississippi	33	22	3
North Carolina	72	40	9
South Carolina	68	42	7
Tennessee	61	21	4
TOTAL	557	282	59

Source: RCRIS Regional Oversight database, June 1995

a Facilities where an RFI has been imposed are identified here because not every facility will go through a CMS. Therefore, they also present marketing opportunities for innovative technology vendors.

b Facilities where an RFI has been approved are identified here because they also present marketing opportunities for innovative technology vendors.

CERCLA

The process prescribed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) for listing a site on the NPL is to perform a preliminary assessment (PA), followed by a site inspection (SI). In cases in which situations immediately dangerous to human health and the environment are detected through the PA or SI, a site may be subject to a removal action to minimize that danger. Typically, however, data from the PA and SI are used to score the site under the Hazard Ranking System (HRS) to determine whether remediation is necessary. Sites that score at or above 28.50 using the HRS may be listed on the NPL. Once a site has been listed on the NPL, EPA begins to search for potentially responsible parties (PRP) and ensures the initiation of the remedial investigation and feasibility study (RI/FS). Data from the RI/FS are used in selecting the appropriate cleanup technologies and strategies for the site.

The results of the RI/FS, including the rationale for the selection of a remedy, are documented in the Record of Decision (ROD). The ROD provides a variety of useful information to vendors, including information about the technologies selected as the appropriate remedy for the site, the volumes of waste potentially to be treated, and the rationale for selection or rejection of particular technologies. After the ROD has been signed, remedial design (RD) begins, which is then followed by remedial action (RA). For fund lead sites (sites where cleanup is paid for by the federal government from the Superfund Trust Fund created under CERCLA), the RD information is used in preparing the bidding documents for the site. After completion of the bid process, the RA itself begins. PRP lead sites may follow a similar, formal, bid process, or the PRP(s) may have engaged a firm to perform the RI/FS and then build, design, and operate the remediation technology during the RD/RA phase.

The Region 4 Office of Superfund and Emergency Response has three branches responsible for removal and remediation activities. The Emergency Response and Removal Branch, responsible for removals, will not be discussed further, since its activities are of little interest to most vendors. The two branches responsible for remedial activities are organized geographically, each having three sections. The North Superfund and Remedial Branch has a Kentucky and Tennessee Section, a North Carolina Section, and a South Carolina Section. The South Superfund and Remedial Branch has an Alabama, Georgia and Mississippi Section, a North Florida Section, and a South Florida Section. Staff in the various sections are responsible for oversight of day-to-day operations at NPL sites. Table 1-3 provides information on the total number of NPL sites, including federal facility sites, that present potential opportunities for innovative technology vendors in the Southeastern region. Federal facility sites managed by the DoD are shown in Table 1-6 (presented on page 1-13).

In addition, information on the number of NPL sites in the pre-remedial phases of activity or remedial phases of activity is provided in each state section. Sites in the pre-remedial phases of activity are sites where remedial design and construction have not yet begun, although a remedy may have been chosen. These sites present long-term opportunities for vendors because the remediation technology has not yet been selected. Sites in the remedial phases of activity are sites where remedial design activities have begun, but construction might not have begun. Where technologies have been selected, but no vendor has been chosen, a site may present a short-term business opportunity.

UST

The Region 4 Water Management Division's Groundwater Protection Branch, UST section, oversees UST activities. The UST section oversees all UST activities on Indian lands and in the State of Tennessee, because Tennessee does not have the regulatory authority to regulate USTs that contain hazardous wastes.

Table 1-3
Number of NPL Sites and Operable Units
Requiring Remediation in Region 4

State	Number of Sites	Number of Operable Units
Alabama	10	19
Florida	29	68
Georgia	10	17
Kentucky	10	16
Mississippi	1	1
North Carolina	15	31
South Carolina	15	47
Tennessee	7	49
TOTAL	97	248

1.3 Remediation Programs at the State Level

This section discusses hazardous waste remediation programs in each of the Southeastern states. All Southeastern region states have enacted legislation to identify and fund cleanup of hazardous waste sites. In general, these programs place an emphasis on those sites that do not qualify for Federal CERCLA funding. Therefore, more sites could potentially be addressed under these state programs if funding is adequate. Some state laws and programs also address NPL sites in that they allow the collection and payment of 10 percent matching funds from Superfund. Three states in Region 4 are authorized to conduct the corrective action portion of the RCRA program. Staff from North Carolina, South Carolina, and Georgia programs have indicated that their corrective action programs follow EPA's and that no sites other than the sites listed in EPA's Resource Conservation and Recovery Act Information System (RCRIS) in the three states were subject to corrective action. In discussions with staff from Florida and Tennessee, it was determined that, while those states are not authorized to conduct the RCRA corrective action program, the states do have separate state corrective action programs. A discussion of the process by which the states manage their programs is found in each state section.

Table 1-4 presents the number of hazardous waste sites presenting potential opportunities under state hazardous waste cleanup programs. The data included in the table were obtained from two separate sources. The number of sites identified as future opportunities by states was based on interviews with state personnel and state lists of hazardous waste sites that require remediation. The number of sites identified

as needing attention was obtained from EPA's *An Analysis of State Superfund Programs: 50-State Study, 1995 Update.*

In 1984, HSWA amended RCRA by adding Subtitle I. Subtitle I authorized the creation of a regulatory program to manage USTs that contain petroleum products and any substance defined as hazardous under CERCLA.

All states in the Southeastern region manage individual UST programs. Those programs' regulations are similar to the Federal regulations, although some might be more stringent. UST sites comprise the largest group of sites requiring remediation in Region 4. As of March 31, 1996, confirmed releases had been reported at approximately 17 percent of the universe of active and closed tank sites in the Southeastern region, as shown in Table 1-5. Of the confirmed releases, cleanup has not yet been initiated at 27,401 UST sites. This number represents the difference between total "confirmed releases" and total "cleanups initiated." The number of UST sites identified here as marketing opportunities will change rapidly, because of the combination of rapid increases in the number of confirmed releases and continuing site closures. State-specific information about obtaining lists of UST sites requiring remediation and state requirements for doing business are provided in each state section. Because specific data on individual sites are voluminous, information is presented in this report only in summary form.

Table 1-4
Number of Abandoned Hazardous Waste Sites in Region 4 Presenting Potential Opportunities

State	Number of Sites[a]	Number of Sites Identified as Needing Attention[b]
Alabama	141	125
Florida	11	656
Georgia	336	82
Kentucky	238	600
Mississippi	156	156
North Carolina	158	814[c]
South Carolina	70	120
Tennessee	155	198
TOTAL	1,265	2,751

[a] Based on interviews with state personnel and state lists of hazardous waste sites that require remediation.
[b] According to EPA's *An Analysis of State Superfund Programs: 50-State Study, 1995 Update.*
[c] Number provided by the State of North Carolina.

Table 1-5
Underground Storage Tank Corrective Action Measures in Region 4 as of First Half of FY96

State	Number of Active Tanks	Tanks Closed	Confirmed Releases	Cleanups Initiated	Cleanups Completed	Cleanups Not Yet Initiated
Alabama	22,227	19,687	7,934	6,572	5,696	1,362
Florida	42,158	71,597	25,184	4,569	3,040	20,615
Georgia	49,005	15,677	6,147	4,855	2,469	1,292
Kentucky	22,560	18,701	6,131	6,068	4,918	63
Mississippi	11,602	16,715	4,408	4,290	4,006	118
North Carolina	41,942	50,619	18,474	17,537	12,254	937
South Carolina	19,302	21,467	4,260	2,133	629	2,127
Tennessee	28,103	24,721	8,154	7,267	6,647	887
TOTAL	236,899	239,184	80,692	53,291	39,659	27,401

Source: EPA Office of Underground Storage Tanks Semi-Annual Activity Report for the First Half of Fiscal Year 1996 (ending March 31, 1996)

1.4 Remediation Programs Managed by the Departments of Defense and Energy

Together, DoD and DOE manage the largest remediation programs in the world. According to the *Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994* (otherwise known as the Defense Environmental Restoration Program or DERP report) and the DOE 5-Year Plan, the average yearly budget for remedial actions conducted by the two departments combined exceeds $10 billion per year.

DOE and DoD manage many installations in Region 4 under their environmental programs.

Nationally, DoD, through the DERP, is responsible for cleaning up hazardous wastes and constituents at more than 21,000 sites on more than 1,700 active DoD installations and formerly used defense sites (FUDS). DERP is responsible for ensuring that the program is meeting its cleanup targets, assisting DoD Components (Army, Navy, Air Force, Defense Logistics Agency, Defense Nuclear Agency, and the FUDS Branch) with their cleanup strategies, and assisting in the development of the budget. Decisions about individual cleanups at DoD installations are made by staff of the DoD Components.

As Table 1-6 indicates, there are 97 DoD installations located in EPA Region 4 that either are projecting to spend more than $1 million on all phases of remedial action activities or have three or more sites. Of the

1,976 active sites at those installations, cleanup activities are planned for 1,023; the remaining sites require no further response action. Contaminants found at DoD sites can include hazardous wastes regulated under RCRA and CERCLA. The wastes typically found at such sites include:

- Petroleum, oil, and lubricants (POL)
- Volatile organic compounds (VOC)
- Heavy metals
- Acids

The contaminants listed above can be found in soils, sludges, groundwater, and surface water.

Specific site data are discussed in each of the state sections examining the market at DoD sites.

Table 1-6
DoD Installations and Sites Located in Region 4 at Which Remedial Activities are Planned

State	Number of Installations[a]	Active Sites[b]	Sites At Which Cleanup Currently Is Planned[c]
Alabama	13	304	121
Florida	23	515	309
Georgia	15	226	78
Kentucky	6	146	67
Mississippi	7	61	38
North Carolina	13	206	149
South Carolina	11	284	99
Tennessee	9	234	162
TOTAL	97	1,976	1,023

Source: *Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994*

a Installations where there are three or more sites and that have an estimate of more than $1 million for cleanup activities.

b Sites at which some form of remediation activity (including studies, remedial design, remedial action, or interim action) is planned or underway.

c Sites at which future remedial action is planned. This number might increase as new sites are added to the individual installation sites inventories.

DOE, through the Environmental Restoration Program (ERP), is responsible for the remediation of 96 sites located at 55 facilities throughout the United States. Like DERP, ERP is responsible for monitoring progress toward cleanup targets. Decisions about individual cleanup actions also are made at the facility level.

Table 1-8 below, shows the number of DOE facilities found in each state in Region 4. States that have no DOE facilities subject to remedial or corrective action are not included. Further detail on each of the facilities is found in each state section in the subsection that describes the market at Federal sites.

Table 1-7
DOE Facilities Located in Region 4
at Which Remediation is Planned

State	Number of Facilities	Number of Sites
Florida	1	7
Kentucky	1	7
South Carolina	1	33
Tennessee	3	26
TOTAL	6	73

1.5 Summary of Findings for Each State

This section provides a brief comparison and summary of the information appearing in the individual state sections. Table 1-8 compares the numbers of marketing opportunities in the Southeastern states. The table includes the number of abandoned hazardous waste sites identified by the state programs as needing cleanup, NPL sites and operable units, RCRA facilities for which a requirement for a CMS has been imposed, RCRA facilities for which a requirement for an RFI has been imposed, USTs that require cleanup, DoD installations and sites at those installations, and DOE facilities and sites at those facilities.

Table 1-8
Comparative Statistics for Marketing Opportunities in the Southeastern States

	Alabama	Florida	Georgia	Kentucky	Mississippi	North Carolina	South Carolina	Tennessee	Total
Hazardous Waste Sites Under State Programs Requiring Remediation	141	11	336	238	156	158	70	155	1,265
NPL Sites Requiring Remediation	10	29	10	10	1	15	15	7	97
Operable Units	19	68	17	16	1	31	47	49	248
RCRA Facilities at Which a CMS is Imposed[a]	1	2	5	1	1	5	1	0	16
RCRA Facilities at Which an RFI is Imposed[a]	27	36	41	17	19	31	35	17	223
Confirmed Release UST Sites That Require Cleanup[b]	1,362	20,615	1,292	63	118	937	2,127	887	27,401
DoD Installations	13	23	15	6	7	13	11	9	97
DoD Sites at Which Cleanup is Planned	121	309	78	67	38	149	99	162	1,023
DOE Facilities	0	1	0	1	0	0	1	3	6

Source: CERCLIS, RCRIS, RELAI, the Semi-Annual Activity Report for the First Half of Fiscal Year 1996, state agency databases and the DERP report; see Section 1.8 for a detailed description of the data sources.

a Represents the difference between the number of CMSs or RFIs imposed and the number that have been approved in each state.

b Represents the difference between the number of confirmed releases and the number of cleanups initiated in each state.

In reviewing the data available for each state, it was found that UST sites present the greatest opportunity, in terms of absolute number of sites, (though not in complexity of remediation tasks) for marketers of innovative technologies, followed by DoD sites, NPL sites, and in states that maintain an abandoned hazardous waste site program, abandoned hazardous waste sites managed by the state. RCRA facilities subject to corrective action, at which a requirement for a CMS has been imposed, are the next smallest market in terms of absolute numbers of sites. It is important to realize that, as time passes, the RCRA segment of the market is likely to grow. Facilities required to conduct RFIs are not included in the summaries because they are not considered near-term opportunities. Based on EPA experience at sites nationwide, the majority of those facilities are also likely to undergo some form of corrective action. They may, however, represent longer term opportunities. DOE sites offer, in terms of absolute number of sites, the smallest opportunity to vendors.

Following are brief summaries of the markets in each state in EPA Region 4 that focus on near-term opportunities.

Alabama

The State of Alabama provides the following near-term opportunities for vendors of innovative technologies:

- The Alabama Department of Environmental Management lists 141 sites, governed by Alabama state authorities, each of which requires remediation.
- EPA manages an inventory of 13 NPL sites, there are 10 of which require further remedial action. At the NPL sites, 19 operable units present opportunities for vendors.
- One of the State's 55 RCRA facilities are under a requirement to conduct a CMS.
- Current data on UST sites indicate that cleanup has not yet been initiated at 1,362 sites within confirmed releases in Alabama.
- There are currently 121 sites at 13 DoD installations at which cleanup activities are planned.

Florida

The State of Florida provides the following near-term opportunities for vendors of innovative technologies.

- The Florida Department of Environmental Protection manages 11 abandoned hazardous waste sites.
- EPA manages an inventory of 58 NPL sites, 29 of which require remedial action. At the NPL sites, 68 operable units present opportunities for vendors.
- Two of the State's 90 RCRA facilities are under a requirement to conduct a CMS.
- Current data on UST sites indicate that cleanup has not yet been initiated at 20,615 sites with confirmed releases in the State.
- There are currently 309 sites at 23 DoD installations at which cleanup activities are planned.
- There are seven sites at one DOE facility at which cleanup activities are planned.

Georgia

The State of Georgia provides the following near-term opportunities for vendors of innovative technologies.

- The State currently has 336 sites subject to remediation under State regulations.
- EPA manages an inventory of 13 NPL sites, 10 of which require further remedial action. At those 10 sites, 7 operable units present opportunities for vendors.
- Five of the State's 98 RCRA facilities are under a requirement to conduct a CMS.
- Current data on UST sites indicate that cleanup has not yet been initiated at 1,292 sites with confirmed releases in the State.
- There are currently 78 sites at 15 DoD installations at which cleanup activities are planned.

Kentucky

The State of Kentucky provides the following near-term opportunities for vendors of innovative technologies.

- There are 238 sites classified as active that are managed by the Kentucky Department of Environmental Protection, each of which requires remediation.
- EPA manages an inventory of 20 NPL sites. At those 20 sites, 10 require remedial action. At those 10 sites, 16 operable units present opportunities for vendors.
- One of the State's 80 RCRA facilities is under a requirement to conduct a CMS.
- Current data on UST sites indicate that cleanup has not yet been initiated at 63 sites with confirmed releases in the State.
- There are currently 67 sites at 6 DoD installations at which cleanup activities are planned.
- There are seven sites at one DOE facility at which cleanup activities are planned.

Mississippi

The State of Mississippi provides the following near-term opportunities for vendors of innovative technologies.

- The State of Mississippi Uncontrolled Sites List includes 156 sites, each of which requires remedial action.
- EPA manages an inventory of four NPL sites, one of which requires remedial action. At that site, one operable unit presents opportunities for vendors.
- One of the State's 33 RCRA facilities is under a requirement to conduct a CMS.
- Current data on UST sites indicate that cleanup has not yet been initiated at 118 sites with confirmed releases in the State.
- There are currently 38 sites at 7 DoD installations at which cleanup activities are planned.

North Carolina

The State of North Carolina provides the following near-term opportunities for vendors of innovative technologies.

- The State Inactive Hazardous Waste Sites Priority List includes 158 sites.
- EPA manages an inventory of 23 NPL sites, 15 of which require further remedial action. At those 15 sites, 31 operable units present opportunities for vendors.
- Six of the State's 72 RCRA facilities are under a requirement to conduct a CMS.
- Current data on UST sites indicate that cleanup has not yet been initiated at 937 sites with confirmed releases in the State.
- There are currently 149 sites at 13 DoD installations at which cleanup activities are planned.

South Carolina

The State of South Carolina provides the following near-term opportunities for vendors of innovative technologies.

- The State currently has 70 sites subject to remediation under State regulations.
- EPA manages an inventory of 25 NPL sites, 15 of which require further remedial action. At those 15 sites, 47 operable units present opportunities for vendors.
- Two of the State's 68 RCRA facilities are under a requirement to conduct a CMS.
- Current data on UST sites indicate that cleanup has not yet been initiated at 2,127 sites with confirmed releases in the State.
- There are currently 99 sites at 11 DoD installations at which cleanup activities are planned.
- There are currently 33 sites at 1 DOE facility at which cleanup activities are planned.

Tennessee

The State of Tennessee provides the following near-term opportunities for vendors of innovative technologies.

- The State currently has 155 sites subject to remediation under State regulations.
- EPA manages an inventory of 18 NPL sites, 7 of which require further remedial action. At those nine sites, 49 operable units present opportunities for vendors.
- One of the State's 61 RCRA facilities is under a requirement to conduct a CMS.
- Current data on UST sites indicate that cleanup has not yet been initiated at 887 sites with confirmed releases in the State.
- There are currently 162 sites at 9 DoD installations and FUDs at which cleanup activities are planned.
- There are currently 3 DOE facilities at 26 sites which cleanup activities are planned.

1.6 Survey of Innovative Treatment Technologies Typically Employed in Region 4

Information provided in this survey comes from EPA's *Innovative Treatment Technologies: Annual Status Report (Seventh Edition)*, published in September 1995 and the Innovative Treatment Technology Database. The Annual Status Report provides data on the use of innovative technologies at Superfund sites undergoing either remedial or removal actions. It is also useful as a guide to the technologies that have been accepted in a particular state.

The Innovative Treatment Technologies: Annual Status Report (ASR), *Seventh Edition* (EPA-542-R-95-008) and the *Innovative Treatment Technologies: Annual Status Report Database (ITT Database)* (EPA-542-C-95-002) are available free of charge. Order by fax or by mail from:

U.S. EPA/National Center for Environmental
Publications and Information (NCEPI)
P.O. Box 42419
Cincinnati, OH 45242-2419
Fax Number: (513) 489-8695
Phone Verification: (513) 489-8190

Allow 4-6 weeks for delivery. The *ITT Database* is also available for downloading from the following sources:

- Cleanup Information Bulletin Board System (CLU-IN BBS). Via modem (301) 589-8366 (8 Data Bits, 1 Stop Bit, No Parity, VT-100 or ANSI). Voice help (301) 589-8368.
- Alternative Treatment Technology Information Center (ATTIC). Via modem (703) 908-2138 (8 Data Bits, 1 Stop Bit, No Parity, VT-100 or ANSI). Voice help (703) 908-2137.

As Table 1-9 indicates, as of the seventh edition of the Annual Status Report, innovative technologies were selected or used in remedial actions at NPL sites in all states except Mississippi in Region 4. The single most common innovative technology employed at 14 NPL sites in Region 4 was soil vapor extraction. The next most popular technology was ex situ bioremediation, used at 10 NPL sites in Region 4. The most common medium treated by the innovative technologies was soil, followed by sludge. The contaminants most often treated by the specific technologies were VOCs and semivolatile organic compounds (SVOC).

Specific information on numerous innovative treatment technologies and sites where they have been employed is available in the Vendor Information System for Innovative Treatment Technologies (VISITT), a free electronic database developed by TIO to assist vendors to market their technologies. Information on how technology vendors can participate in VISITT is provided in the figure box on page 1-25.

1.7 Sites Managed Under the Brownfields Initiative

EPA is awarding 60 cooperative agreements to states, cities, towns, counties, and tribes to revitalize communities by redeveloping abandoned, contaminated industrial or commercial land -- known as "Brownfields" -- and returning these properties to productive land use. The projects are part of the Clinton Administration's Brownfields Economic Redevelopment Initiative, which was launched in November

Table 1-9

Technologies Used in Region 4

Technology	Number of Instances of Technology Use[a]	States	Media[b] Treated	Contaminants[c]
Bioremediation (ex situ)	10	FL, GA, SC	SO, SL	VOC, SVOC, PCB, Pesticides
Bioremediation (in situ)	2	FL	SO	VOC, SVOC, PCB
Dechlorination	2	KY, SC	SO	VOC, PCB
In situ flushing	4	AL, FL, NC	SO	VOC
Soil vapor extraction	14	FL, GA, NC, SC, TN	SO, SL	VOC
Soil washing	3	FL, NC	SO, SL	VOC, SVOC, PCB, Metals
Thermal desorption	8	AL, KY, NC, SC, TN	SO, SL	VOC, SVOC, PCB, Pesticides
Other technologies	2	NC, SC	GW, SO	VOC, Cyanide

Source: *Innovative Treatment Technologies: Annual Status Report (Seventh Edition)*

a 40 NPL sites in Region 4 are using innovative treatment technologies; however, because one site may use more than one technology, the total shown here is 45.

b SO = soil, SL = sludge, GW = groundwater

c VOC = volatile organic compounds, SVOC = semivolatile organic compounds, PCB = polychlorinated biphenyls

1993. The projects are targeted to receive $200,000 in funding from EPA over two years. The Region 4 projects are located in Birmingham, Alabama; Prichard, Alabama; Clearwater, Florida; Atlanta, Georgia; Miami, Florida; Louisville, Kentucky; Charlotte, North Carolina; and Knoxville, Tennessee. Appendix B includes EPA-produced fact sheets concerning the Region 4 Brownfields Initiative pilot projects.

1.8 Sources of Data Used to Develop This Report

The data used to develop the discussion in each of the state sections were obtained from a variety of resources, as shown in Figure 1-1 on page 1-24. These resources and the rationale used to obtain the data are discussed below. In addition to the data from the databases, individuals from each state and from EPA were interviewed to validate information on state program status, agency addresses, and availability of data. Appendix D presents a complete list of all data sources and references used in developing this report.

RCRA Corrective Actions

Data on RCRA corrective actions were obtained from the Resource Conservation and Recovery Information System (RCRIS) as provided by EPA staff in Region 4. The data were obtained from the RCRIS Regional Oversight database in an attempt to identify not only the names and addresses of the facilities, but also any available data on the contaminants, media contaminated, and volume of media contaminated. In general, there was little information on contaminants or media contaminated in the RCRIS Regional Oversight database for the states covered in this report. (The RCRIS National Oversight database does not include data fields for information on contaminants or media.) Data were collected in May 1995 for all Region 4 states.

Figure 1-1
Sources of Data

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)

Resource Conservation and Recovery Information System (RCRIS) Regional Oversight database

EPA Office of Underground Storage Tanks Semi-Annual Activity Report for the First Half of Fiscal Year 1996

Responsive Electronic Link Access Interface (RELAI) } Consisting of RID; SNAP; RPM Survey; and CERCLIS(EI) databases

NPL Site Summaries

Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994

Department of Energy Five-Year Plan for Fiscal Years 1994 - 1998

Using VISITT in Marketing

The Vendor Information System for Innovative Treatment Technologies (VISITT) is a free electronic database of innovative treatment technologies and vendors. Version 4.0 of VISITT, released in the summer of 1995, contains current data on 325 innovative treatment technologies provided by more than 200 vendors. VISITT is a cost-effective way to market innovative treatment technologies to those directly involved in selecting hazardous waste remedies. Currently, VISITT has an estimated 10,000 users in 76 countries (EPA 1995h). The database users include government personnel and responsible parties who are faced with the time-consuming task of identifying and selecting the best remediation technology and the best vendor. Vendors of innovative technologies may wish to have their products included in VISITT.

To be included in VISITT, a technology must meet the following criteria:

- It must be defined as innovative (for example, incineration, aboveground treatment of groundwater, and solidification and stabilization are not eligible). Innovative technologies are alternative treatment technologies (alternatives to land disposal), the use of which is inhibited by lack of data on cost and performance.
- It is a technology for cleanup of hazardous waste sites (VISITT does not include companies that only supply products, not does it include technologies that treat process wastes).

For more information on participating in the next VISITT update, call EPA's Technology Innovation Office at (703) 603-9910. EPA has made the VISITT 4.0 software and user manual available for free downloading on the Clean-Up Information Bulletin Board System (CLU-IN). CLU-IN is accessible through the Internet address (clu-in.epa.gov) or via modem by dialing (301) 589-8366. VISITT also is available for downloading through the following access sites: America Online, Simtel File Transfer Protocol (FTP) Site, the Defense Environmental Network for Information eXchange (DENIX) (Telnet 128.174.5.51), and EPA's Site on the Internet (ftp.epa.gov). Future access sites include: CompuServe and Garbo FTP Site.

Instructions for downloading through CLU-IN and the other access sites are available in the EPA VISITT 4.0 Bulletin. For a copy of the VISITT 4.0 Bulletin, or of VISITT 4.0 diskettes, write or send a facsimile to:

U.S. EPA/NCEPI
P.O. Box 42419
Cincinnati, OH 45242-2419

or

U.S. EPA/NCEPI
(513) 489-8695 (Facsimile)
(513) 489-8190 (Verification)

Underground Storage Tanks

Data on underground storage tanks (UST) regulated by EPA under RCRA Subtitle I were obtained from the EPA Headquarters Office of Underground Storage Tanks (OUST). The information on the numbers of UST sites was obtained from the OUST Semi-Annual Activity Report for the first half of fiscal year 1996. For the purposes of this report, the number of tank sites in need of corrective action was defined as the number of UST sites with "confirmed releases" minus the number of UST sites with "cleanup initiated." This number provides only an estimate of the number of UST sites with confirmed releases currently in need of cleanup, because the number of USTs requiring cleanup is very dynamic and changes on a monthly basis as new releases are confirmed and other tanks are closed. The duration of UST cleanups varies with site specific conditions although UST cleanups generally occur more quickly than complicated RCRA or Superfund sites. Cleanup at USTs with soil contamination is usually completed within 6 months to 2 years after the site has been identified. Cleanup at USTs with contaminated groundwater is usually completed within 2 to 5 years after the site has been identified. The CERCLA and RCRA programs can spend considerable time determining the nature of the release, while the majority of leaking USTs contain petroleum, thereby reducing the time typically associated with identifying contaminants. Some states regulate larger universes of USTs through their own state programs than are Federally regulated and, therefore, may have larger markets for UST-related technologies. Information about how to request data managed by the individual states is provided at the end of every state section.

NPL Sites

Data on NPL sites were obtained from several sources, including the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), from which data were taken in May 1995; the Responsive Electronic Link Access Interface (RELAI) database, which consists of data taken from the Record of Decision (ROD) Information Database (RID) in September 1994; the Superfund NPL Assessment Program (SNAP) database as of September 1993; risk assessment documents collected during the survey of remedial project managers (RPM) conducted in August 1993 to respond to a Congressional inquiry (data available on 219 sites nationwide); and a review of the NPL site summary for each site. Data from the RELAI database were retrieved in early June 1995. Data from the sources listed above were combined into a single database that then was used to develop the data needed for this report.

As in the case of RCRIS, several different events in the NPL process can be used to identify NPL sites as promising targets for marketing. The event "remedial action with the actual start date not reported" was

selected as the indicator that would best lead vendors of innovative technologies to a potential market. A blank start date for remedial action (RA) is the point at which the remedial design (RD) has been completed but the actual technology vendor is yet to be selected, when EPA or the "Fund" is the lead. According to information gathered by EPA in 1994, approximately 75 percent of the NPL remedial action work is led by potentially responsible parties (PRP). PRPs often bid projects on a "turnkey" basis, with a contractor designing, building, and operating the technology at the site. In cases in which the PRP is the lead, a vendor may wish to become involved in the process at the remedial investigation and feasibility study (RI/FS) or design phase when opportunities may be available. DoD sites that are listed on the NPL are also discussed in the DoD data tables in each state section and in Appendix A.

Basic information about the NPL sites covered in this report, such as name, identification number, and address, was obtained from CERCLIS. Information on media contaminated was obtained from one of the following sources: CERCLIS (specifically the environmental indicators or EI module) provided data for sites where cleanup work has been accomplished and reported; RID provided data for sites for which there are signed RODs, through fiscal year 1993; risk data from risk assessment documents collected during the RPM survey provided data on contaminants and media; and SNAP provided data on Hazard Ranking System (HRS) scoring information and site characteristics.

Information on volumes of contaminated media and technologies was obtained from CERCLIS EI data and RID. Data on site size were taken from SNAP and NPL site summaries.

DoD Installations and Sites

Data on DoD installations and sites were obtained from Tables B-1 and B-2 of the DERP report. The data obtained from the DERP report were used to determine the projected cost estimates for remediation activities for each installation, the number of sites for which remediation is planned, and the total number of active sites. Because DoD's inventory of installations and sites is voluminous, this study provides complete information only on those DoD installations that projected to spend more than $1 million on all phases of remediation activities (defined as studies, remedial design, remedial action, and interim actions) and had identified three or more sites (from Table B-1 of the DERP report). Appendix A of this report provides a list of those installations with two or fewer sites or estimated costs for cleanup of less than or equal to $1 million (from Table B-2 of the DERP report). The information in Appendix A is limited to the installation name, the state in which the installation is located, the Federal facility identification number (FFID), the number of active sites on the installation, and the amount projected to be spent. The reader

should understand that the funding estimates provided in this report are not yet obligated and are for DoD planning purposes only.

DOE Facilities

Data on DOE facilities was obtained from the DOE 5-Year Plan for Fiscal Years 1994-1998.

State-Managed Sites

Data on abandoned hazardous waste sites managed by the individual state programs were obtained from state-run databases and state-issued reports as well as from private vendors of information. In almost all cases, the states maintain only a list of addresses of abandoned hazardous waste sites. Information on the types of media contaminated and their contaminants is found only in the file materials of the state agency charged with managing the sites. Information on state programs and contacts found at the end of each state section should provide vendors with information necessary to follow up leads on state sites.

1.9 Report Organization

To help vendors and technology developers identify specific market opportunities, the following sections of this report provide information on waste sites and specific waste programs of the eight states comprising the Southeastern region. The individual sections are organized to include the following:

- A brief introduction outlining the summary findings on the numbers, types, and locations of sites in the state;
- Relevant waste programs and authorities maintained by the state and the structure of those programs;
- Market opportunities at abandoned waste sites that fall within state program authorities;
- CERCLA sites in the state;
- RCRA corrective action opportunities;
- Opportunities in the individual UST programs;
- Markets for Federal facility sites; and
- Contacts for further information on conducting business at sites in the state.

To the maximum extent practicable, the sections are organized uniformly to facilitate cross referencing and comparison. However, not all sections include all information listed above. In some cases the particular program section may not be relevant to the universe of sites found in the state.

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2.0 DEMAND FOR REMEDIATION OF SITES IN ALABAMA

This chapter provides a detailed discussion of the opportunities available in the State of Alabama for vendors of innovative technologies. The chapter is organized in seven sections. The first section describes the organization and authority of the State's program. The next section discusses opportunities at sites managed by Alabama's waste management program. That section is followed by a similar discussion of opportunities at Superfund National Priorities List (NPL) sites. The fourth and fifth sections discuss the markets at Resource Conservation and Recovery Act (RCRA) facilities subject to corrective action and at underground storage tank (UST) sites managed by the State. Subsequent sections provide information on opportunities at Federal facilities and provide further useful information about working in the State.

Figures 2-1 and 2-2 present two maps of Alabama that indicate the locations of the sites in the State that are on the NPL, and the RCRA facilities in the State[1]. The 13 NPL sites in Alabama are distributed sparsely in a band across the eastern half of the State. There is an additional concentration of sites in the southwestern part of the State. RCRA facilities are relatively evenly distributed across the State, with slight concentrations in the center and the southwest.

Summary Information

Alabama presents the innovative technology vendor with a variety of potential opportunities. There are 13 sites on the NPL, 10 of which have operable units that require remediation. The Alabama Department of Environmental Management (ADEM) lists 141 sites that are currently in some stage of remedial action governed by Alabama State authorities. The Resource Conservation Recovery Information System (RCRIS) currently lists 55 facilities in Alabama, one of which is currently under a requirement to conduct a corrective measures study (CMS). According to the EPA Office of Underground Storage Tanks, there are also 1,362 USTs in the State that require remediation. There are active Department of Defense (DoD) installations and Formerly Used Defense Sites (FUDS) located in Alabama. Of the installations' 304 sites, remediation is currently planned for 121 sites at 13 installations.

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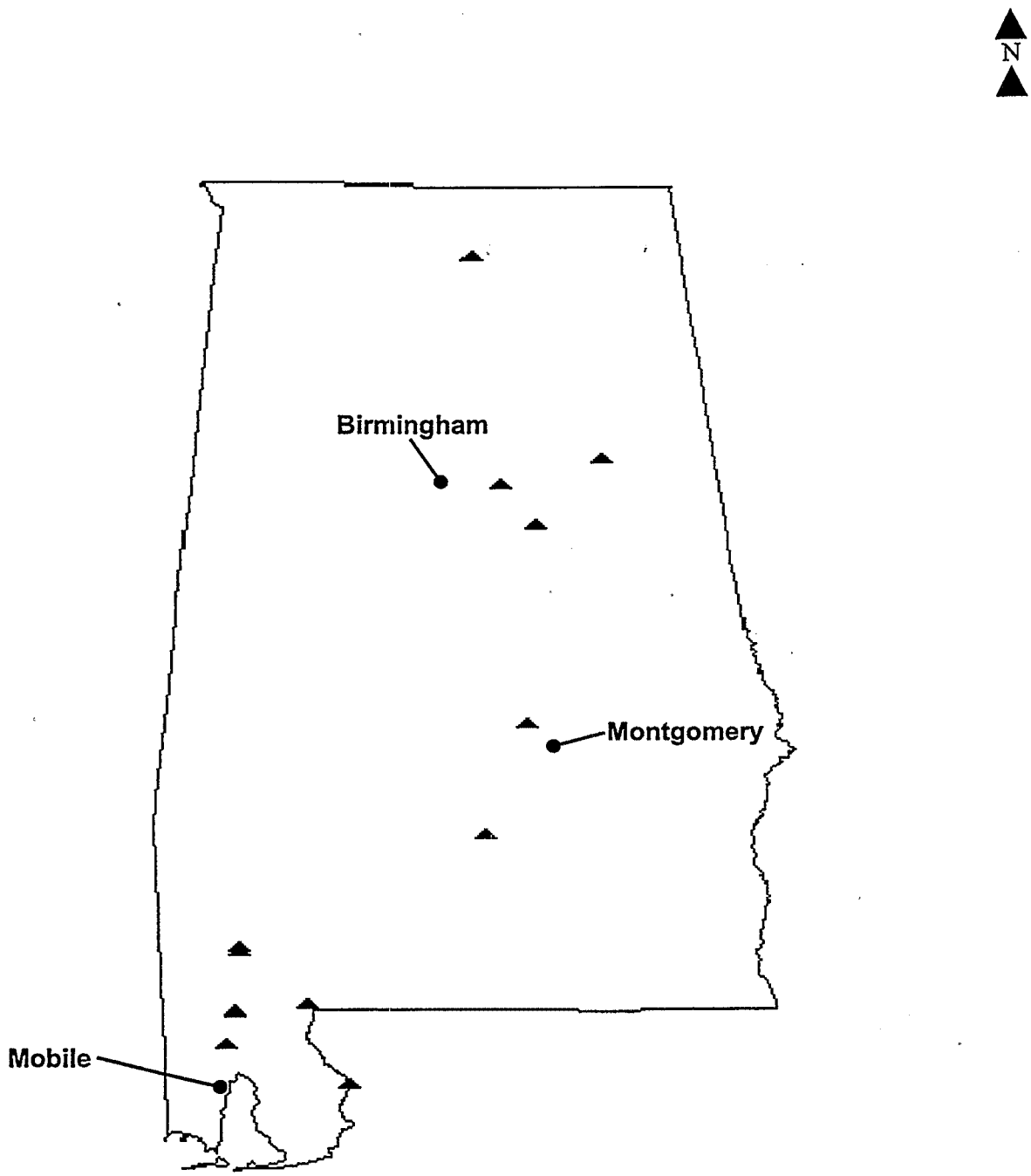
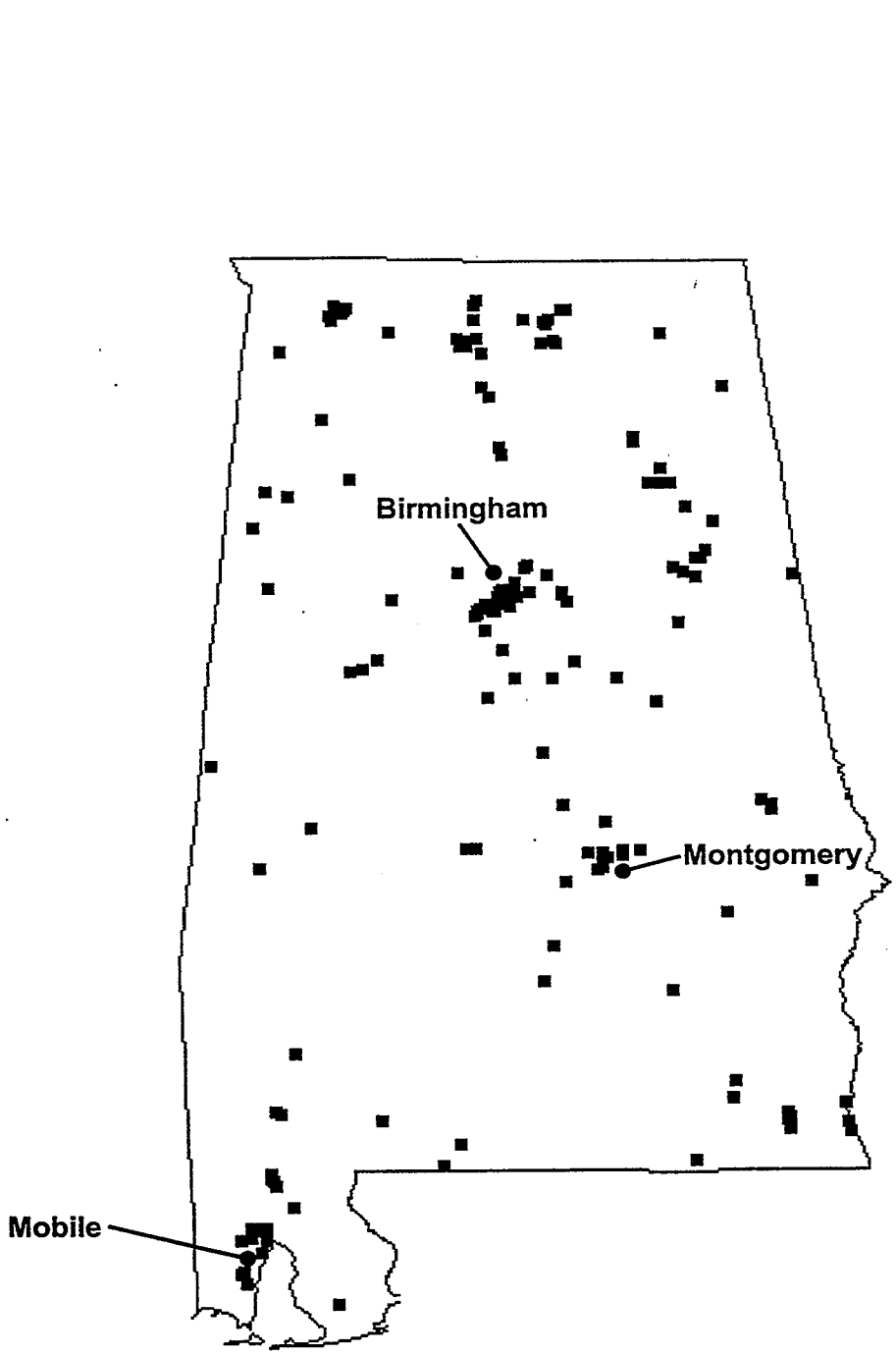
1 Figures 2-1 and 2-2 do not indicate the locations of *all* NPL sites or *all* RCRA facilities located in Alabama. LandView II™ contains information from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) on NPL and other sites. It also contains information from the Biennial Reporting System (BRS) on treatment, storage, and disposal facilities and major generators of hazardous waste.



NOT TO SCALE

Source: Modified from Landview II, based on data as of September 1994.

Figure 2-1
NPL sites in Alabama



NOT TO SCALE

Source: Modified from Landview II, based on data as of September 1994.

Figure 2-2
RCRA Facilities in Alabama

2.1 The Alabama Hazardous Waste Management Program

The Alabama Department of Environmental Management (ADEM) is responsible for the implementation and enforcement of environmental regulations. The agency consists of the Air, Water, and Land Divisions. In 1988, the Land Division created the Special Projects Branch to oversee the assessment and remediation of hazardous waste sites. The Land Division also conducts RCRA enforcement and compliance activities. According to the U.S. Environmental Protection Agency (EPA) 50-State Study, 1995 update, Alabama had 20 full-time equivalent staff working on cleanup activities.

The Special Projects Branch manages the State Superfund program. The State's enforcement authority is cited under the Code of Alabama 22-30A-1, in which the Alabama Hazardous Substance Cleanup Fund (AHSCF) also was established on September 22, 1988. This fund supports State enforcement staff to manage incidences of releases; recover costs of cleanup from liable parties; and to issue orders to liable parties to conduct cleanup activities. Alabama is not authorized to conduct corrective action under RCRA, nor does it have a State corrective action program.

According to EPA's 1995 50-State Study, the AHSCF had a balance of $478,167 at the end of fiscal year (FY) 1995. The AHSCF is funded by monies received from cost recovery actions, penalties, appropriations, and some fees. During FY95 the fund paid out $324,048 for actions at non-NPL sites. The fund can be used only at non-NPL sites at the time the remedial activity begins, for State matching of CERCLA funds, and for operations and maintenance.

Alabama has an informal voluntary cleanup program; guidelines are under development. Inactive sites with no current enforcement actions are eligible to participate. Incentives include lower oversight costs and cleanups that are achieved faster. The state is reimbursed by responsible parties for its oversight costs. Cleanup standards include water quality criteria, maximum contaminant levels (MCL) and maximum contaminant level goals (MCLG), background levels, risk assessments, and EPA guidelines. Risk levels are generally 10^{-4} for industrial and 10^{-6} for residential areas.

The Alabama UST Program operates under the authority of ADEM's Water Division, Groundwater Branch. The program is authorized under the Alabama Underground Storage Tank and Wellhead Protection Act of 1988. A second act, the Alabama Underground Storage Tank Trust Fund Act, authorized on October 1, 1988, establishes a fund for remediation of releases. The UST Program is composed of two sections, the UST Compliance Section and the UST Corrective Action Unit. The responsibility of the UST Compliance Section is to prevent the release of hazardous substances through the

implementation of UST regulations. The UST Corrective Action Unit is responsible for the remediation of releases from tanks. The funds are raised through tank fees levied on owners or operators.

2.2 The Market at Sites Managed Under State Authorities

Staff of ADEM furnished a list of 141 sites currently identified under Code of Alabama 22-30A-1 as either undergoing or awaiting remedial action. **Table 2-1 at the end of the chapter** presents that information. The list includes only the name and address of the facility and a State reference number. The higher the reference number, the more recently the site has been placed on the list.

The 1995 EPA 50-State Study also revealed that the State has seven remedial actions underway at a non-NPL site, and has completed nine others since the start of the program. It also has 15 removals underway, and has completed 80 since the start of the program.

2.3 The Market at Abandoned Sites Managed Under the Federal Superfund Program

As of May 1995, EPA has listed 13 sites located in Alabama on the NPL. Table 2-2 presents summary information from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Database on the status of the NPL sites in Alabama. **Table 2-3, at the end of this chapter**, lists 10 NPL sites at which remedial action has not yet begun at one or more OU. The sites and OUs of greatest interest to vendors are those at which technologies have been selected but vendors of the technologies have not yet been chosen. Of the 10 NPL sites listed in Table 2-3 at the end of the chapter, 3 are military installations that are discussed more fully in the section on opportunities at Federal facilities.

Table 2-2

Number of Sites and Operable Units at NPL Sites in Alabama

Phase of Activity[a]	Number of Sites[b]	Number of Operable Units[b]
Pre-remedial	11	37
Remedial	2	2

Source: Data as of May 1995 from EPA CERCLIS database; see Chapter 1 for a detailed description of the data sources.

[a] Sites with pre-remedial activities are sites where remedial design and construction have not yet begun, although the remedy may have been chosen. These sites, especially the pre-remedial sites still in the investigation phase, present long-term opportunities for vendors. Sites with remedial activities are sites where remedial design has begun and construction might not have begun. Where technologies have been selected but no vendor has been chosen, a site may present a short-term business opportunity.

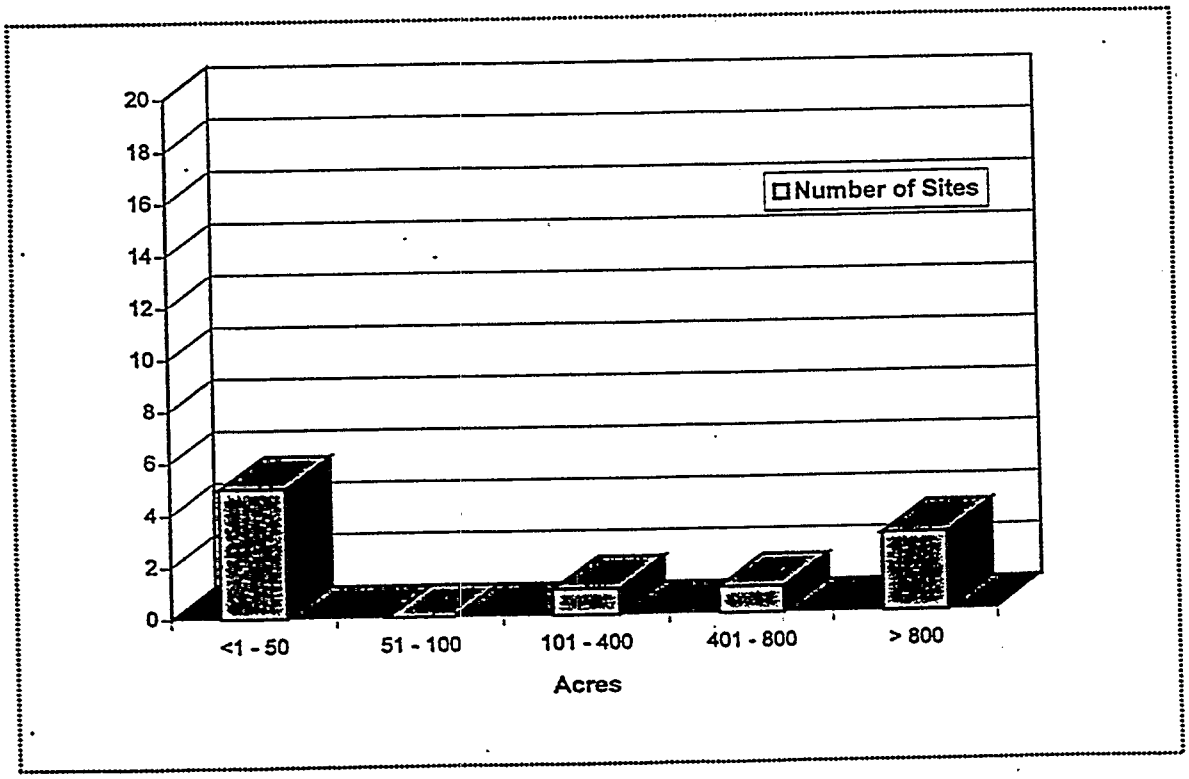
[b] A site may have more than one operable unit in each phase, so operable units may be counted more than once.

Figure 2-3 presents the distribution of sizes of the sites. Sites range in size from 1 to 38,300 acres. The sizes of all 10 sites were reported in CERCLIS. Five sites are reported to be 25 acres or less in size, with 2 of those reportedly with 1 acre. Three sites are 950 acres or more in area.

Contaminants at some of the sites include heavy metals, volatile organic compounds (VOC), pesticides, and herbicides. For other sites, there were no data indicating the contaminants present. Where available, data on contaminated media indicated that all the sites had contaminated soil, six reportedly had contaminated groundwater, and six reportedly had surface water contamination.

Six instances of contaminated sludge and 4 instances of contaminated debris were reported. In addition, Interstate Lead Co. reported contaminated air. Data on the volume of materials contaminated is available for only three sites. At the Ciba Geigy McIntosh Plant, more than 47 million gallons of groundwater and 236,000 cubic yards of soil and sludges are to be treated. The 19 OUs at the 10 sites do not have a start date for remedial action, indicating that remedial action has not yet begun and that these sites provide good opportunities for vendors of innovative technologies.

Figure 2-3
NPL Site Size Distribution for the State of Alabama



2.4 The Market at RCRA Corrective Action Sites

As noted in Section 2.1, Alabama is not authorized to conduct corrective action under RCRA, nor does it have a State mandated corrective action program. See Section 1.2 for a complete description of the Federal RCRA corrective action program.

Data from the Resource Conservation and Recovery Information System (RCRIS) database indicate that one RCRA facility in Alabama currently requires corrective action. The definition of corrective action used here is that a facility has been required to perform a CMS. The number of facilities with CMS imposed is not a direct subset of only RCRA treatment, storage, and disposal (TSD) facilities, instead it is a subset that includes both TSD facilities and hazardous waste generators. While TSD facilities are statutorily required to address corrective action, EPA has discretionary authority to impose corrective action on generators. **Table 2-4, at the end of the chapter,** presents the mailing address of the facility and identifies two solid waste management units (SWMU). In addition, 27 facilities are under a requirement to conduct a RCRA facility investigation (RFI). The number of facilities with an RFI imposed is not a direct subset of only RCRA TSD facilities, instead it is a subset that includes both TSD facilities and hazardous waste generators. While TSD facilities are statutorily required to address corrective action, EPA has discretionary authority to impose corrective action on generators. As discussed in Section 1.2, these facilities also may provide either a long-term opportunity or near-term opportunity where no CMS is necessary to begin corrective action or corrective activity begins in accordance with the stabilization initiative. No data were available in RCRIS that indicate the contaminants of concern present at these facilities.

2.5 The Market at UST Sites Managed by the State

Table 2-5 presents data on the number of USTs in Alabama. There are 22,227 active tanks in the State. Active tanks are defined as tanks still in service (EPA 1993). As of March 31, 1996, the EPA Office of Underground Storage Tanks (OUST) had identified 1,362 leaking tanks in Alabama at which cleanup has yet to be initiated. That number represents the difference between the two data elements "confirmed releases" and "cleanups initiated." Cleanup at USTs with soil contamination is usually completed within 6 months to 2 years after the site has been identified. Cleanup at USTs with groundwater contamination is usually completed within 2 to 5 years after the site has been identified. Therefore, the number of USTs identified as opportunities for vendors of innovative technologies will change rapidly.

Table 2-5
Underground Storage Tank Corrective Action Measures in Alabama as of the First Half of FY96

Active Tanks	Tanks Closed	Confirmed Releases	Cleanups Initiated	Cleanups Completed	Cleanups Not Yet Initiated
22,227	19,687	7,934	6,572	5,696	1,362

Source: EPA Office of Underground Storage Tanks Semi-Annual Activity Report, for the First Half of Fiscal Year 1996 (ending March 31, 1996)

In national studies of USTs performed by EPA in 1991 and 1992, it was found that the majority, or about 87 percent, of the tanks are used to manage gasoline or diesel fuel, kerosene, or heating oil. Of the remaining USTs, 11 percent manage other materials and wastes, such as used oil (4 percent), hazardous material (2 percent), and other material (5 percent); 2 percent are empty. The majority of the contamination problems are related to the contamination of soils and groundwater with petroleum products that contain VOCs and semivolatile organic compounds (SVOC).

2.6 The Market at Federal Facility Sites in Alabama

Alabama currently has 13 operational or closing Department of Defense (DoD) installations and formerly used defense sites (FUDS) where remedial action activities are planned or are underway. At those installations there are 304 active sites, at 121 of which future remedial action is planned. Active sites are those at which some form of remediation activity is planned or underway. The total number of sites to be remediated may exceed that figure because, in general, DoD does not plan remediation at a site until the remedial investigation and feasibility study (RI/FS) have been completed. There are no Department of Energy (DOE) or other Federal facilities in Alabama at which remedial action activities are planned.

The *Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994*, indicates that a total of $710 million is estimated to be needed through the year 2030 in all phases of cleanup at the 13 installations. Approximately half the funds ($340 million) are allocated to Redstone Arsenal. Anniston Army Depot and Fort McClellan are allocated a total of $230 million, with the remainder of the funds accounted for by other installations. Redstone and Anniston each have a single OU associated with the NPL site. Because the available data do not breakdown outyear funding by OU, it is not possible to determine how much spending is planned at the individual units. Many of the sites identified at the installations are either undergoing or are scheduled to undergo an RI/FS and therefore are at a relatively early stage of the remediation process. At Redstone Arsenal, 89 sites have activities in

progress and 16 sites have RI/FSs that are underway. Nine sites are planned for remedial design and cleanup activities. At Anniston Army Depot, 44 sites have activities in progress and 7 sites are planned for remedial design and cleanup.

Most of the contaminants at sites on military installations at which remediation currently is planned fall into one of three categories: petroleum, oil, and lubricants (POL); VOCs; or heavy metals. These contaminants are found in the soil at all sites; however, no data are available on volumes of soil and groundwater to be treated. Table 2-6 provides information on the individual installations in the State and the sites that are subject to remediation at those installations. Staff at each installation determine the individual sites at which they plan to perform remedial actions. Cleanup already may be underway at other sites; such sites are not included in the table because it is unlikely that they will afford an opportunity for vendors of innovative technologies.

Table 2-6
DoD Installations and Sites in Alabama

Name and Outyear Funding ($000)	Federal Facility Identification Number	Codes[1]	Number of Sites at Which Cleanup is Planned
Alabama Army Ammunition Plant Outyear Funding FY95-1997 $13,600	AL421002000800	A,N	30
Anniston Army Depot Outyear Funding FY95-2030 $107,023	AL421002002700	A,N	7
Birmingham Municipal Airport Outyear Funding FY95-2003 $2,653	AL457282591700	A	4
Brookley Air Force Base Outyear Funding FY95-2005 $5,576	AL49799F419700	F	2
Courtland Army Base Outyear Funding FY95-2007 $4,460	AL49799F420900	F	3
Dannelly Field Air National Guard Base Outyear Funding FY95-2004 $2,665	AL457282591900	A	1
Fort McClellan Outyear Funding FY95-2010 $123,254	AL421002056200	A	1

Table 2-6 (continued)
DoD Installations and Sites in Alabama

Name and Outyear Funding ($000)	Federal Facility Identification Number	Codes[1]	Number of Sites at Which Cleanup is Planned
Craig Air Force Base Outyear Funding FY95-2008 $4,162	AL49799F421000	F	2
Fort Rucker Outyear Funding FY95-2005 $21,279	AL421002077600	A	34
Gunter Air Force Base Outyear Funding FY95-2008 $21,576	AL457162418500	A	7
Maxwell Air Force Base Outyear Funding FY95-2020 $59,671	AL457162418200	A	17
Phosphate Development Works Outyear Funding FY95-2005 $3,345	AL421002070300	A	4
Redstone Arsenal Outyear Funding FY95-2020 $340,924	AL421002074200	A,N	9

Source: *Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994*

1 Codes:
A = The installation is currently operational or on the BRAC list, and cleanup is covered by DERA or BRAC funds
F = The installation is no longer active and is managed by the FUDS Branch
N = The site is listed on the final National Priorities List

2.7 Further Market Information for Alabama

A vendor that wishes to obtain information about sites in Alabama that are managed by EPA may write to:

U.S. Environmental Protection Agency
Region 4
345 Courtland Street, NE
Atlanta, GA 30365

For information on RCRA facilities, the envelope should be marked to the attention of the Freedom of Information Act Officer, Office of RCRA and Federal Facilities. For information on CERCLA facilities in Alabama, the envelope should be marked to the attention of the Freedom of Information Act Officer, South Superfund Remedial Branch. The requestor will be billed for the information, according to the volume of

information provided. For information on USTs handled by EPA, vendors may contact the EPA Region 4 UST program manager:

John Mason
U.S. EPA, Region 4
345 Courtland Street, NE
Mail Code 4WM-GWP-15
Atlanta, GA 30365

Information also is available on the names and addresses of UST sites in the State that require remediation. A vendor may write to:

Alabama Department of Environmental Management
Groundwater Section/Water Division
1751 Congressman W.L., Dickinson Drive
Montgomery, AL 36130
UST (334) 275-7986
Leaking Underground Storage Tanks (LUST) (334) 371-7834

For information on sites currently subject to the Alabama Hazardous Substance Control Act, vendors may write to:

Dan Cooper
Alabama Department of Environmental Management.
1751 Congressman W.L., Dickinson Drive
Montgomery, AL 36130
(334) 213-4307

Vendors also may contact Blake Roper, the department's ombudsman, at (334) 271-7925.

The U.S. Department of Energy (DOE) sponsors several different research and development assistance programs for technology vendors. The industry and university programs area is intended to promote private sector capability to provide needed environmental cleanup technologies to meet DOE needs. Tools employed to achieve this goal include program research and development announcements (PRDAs), research opportunity announcements (ROAs), and the small business technology transfer pilot program.

For information about DOE sites or any of DOE's technology development assistance programs, vendors may contact:

DOE's Center for Environmental Management Information
470 L'Enfant Plaza East
Suite 7112
Washington, DC 20024
(800) 736-3282

The U.S. Department of Defense (DoD) does not have a single point of contact that handles all of DoD's environmental restoration initiatives, site-level information, and technology programs. The Defense Environmental Restoration Program Annual Report to Congress for FY 1995 contains detailed information on environmental restoration accomplishments and schedules at DoD installations world-wide. This report is available on the Internet at the DoD Environmental Restoration home page at:

http://www.dtic.mil/envirodod/

The home page also provides links to other internet sites that pertain to DoD environmental restoration activities.

Table 2-1
Alabama Hazardous Substance Cleanup Fund Sites
at Which Marketing Opportunities Exists

State Reference No.	Site Name	Address
9001	Dupree Farms	A1 Highway 51, Marvyn, AL
9002	Fyfee Drums	DeKalb Co. Road Shop, Dekalb, AL
9003	Vulcan Materials Belt Plant	110 Avenue C. Ensley, Birmingham, AL
9004	Beauregard Pesticide Drum	Intersection of Hwy 51/51, Beauregard, AL
9005	Millbrook Abandoned Drums	3850 River Oaks Rd, Millbrook, AL
9006	Halls Mill Rd Abandoned Drum	2573 Halls Mill Road, Mobile, AL
9007	I-59 Analine Spill	I-59 Mile Marker 163, Asheville, AL
9008	Colbert County Barton Drums	County Road 33, Barton, AL
9009	Terra International	500 Air Base Blvd, Montgomery, AL
9010	Jessee Bynum Drumsite	Scottsboro, AL.
9011	Bessemer Abandoned Drums	1044 Avenue W, Ensley, AL
9012	Grant Cylinder Leak	Lake Guntersville, Grant, AL
9013	Swarengen Road Drum Dump	124 Menons Road, Grant, AL
9014	Russellvillee Abandoned Drums	Hwy 43, N, Russellville, AL
9015	Wares Ferry Road Abandoned Drums	End of David Drive, Montgomery, AL
9016	Sipsey Riverbridge Fire	Hwy 69 At Sipsey Bridge, Gullman, AL
9017	Qual Run South Drum Site	6215 Quail Run South, Mobile, AL
9018	Macedonia Crossroads	CO Rd 44, Macedonia, AL
9019	Moorersmill Road	191 Darwin Rd, Huntsville, AL
9020	John Law Hollow	9th Street, Grant, AL
9021	Beaunit	Al Hwy 235, Childersburg, AL
9022	Old Carley Tree	Corner of Depot and Pinson St, Tarrant, AL
9023	Old Range Line Road Drum	Old Range Line Rd, Mobile, AL
9024	Brookley Field Abandoned Drum	Brookley Field USCG Dock Area, Mobile Bay, AL
9025	Ethylene Glycol Spill/Bayou La Batre	RR St & Satsuma Street, Bayou La Batre, AL
9026	Reichold Abandoned Drums	1 Mile W. Of Rockford on Hwy 22, Rockford, AL
9027	North Parkway Drum	K-Mart North Park, Huntsville, AL
9028	Whittington Property	Rt 1 Box 273, Tallassee, AL

Table 2-1 (continued)
Alabama Hazardous Substance Cleanup Fund Sites
at Which Marketing Opportunities Exist

State Reference No.	Site Name	Address
9029	Patterson Drum	Not Available
9030	Virginia Carolina Chemical	1st Ave & 21st St, Opelika, AL
9031	CHEM 4	Hwy 80 West, Demopolis, AL
9032	Watts Battery Company	2018 Forrest Ave, Gadsden, AL
9033	Armor Guard Mini Storage	2895 Vaughn Plaza Dr, Montgomery, AL
9034	Brown Foundation	CO Rd 34, Northport, AL
9035	Key Battery	1109 Finley Ave North, Birmingham, AL
9036	Brewton Transformer Oil	123 Grice Street, East Brewton, AL
9037	Jeffries Landfill	Browns Ferry Road, Hillsboro, AL
9038	Fifth Ave South Drums	5113 5th Ave South, Birmingham, AL
9039	Archer Landfill	CO Rd 55 (near Kings Ranch), Westover, AL
9040	Isbell Battery Company	Wolf Creek Rd, Pell City, AL
9041	Ketona Battery Dump	101 Co Shop Rd, Birmingham, AL
9042	Southern Company Drums	Hwy 25 North, Wilsonville, AL
9043	Dawson Cash Store	Hwy 82/Allenville Rd, Prattville, AL
9044	Addsco	Pinto Island Rd, Mobile, AL
9045	Bullock County RD 47 Drums	RR 5 Box 18213/ACME Roofing, Dothan, AL
9046	Schuffert Drums	CO Rd 438/1.5 Mi West of Interstate, Verbena, AL
9047	Scott Junkyard	St. Nichols Ave, Brewton, AL
9048	Fuels & Chemicals	Off CO Rd 14, Coaling, AL
9049	Carson Rd Battery Company	Red Hollow Rd, Tarrant, AL
9050	Happy Hollow Drums	CO Rd 140, Sulphur Springs, AL
9051	Terra, Inc.	500 Air Base Blvd, Montgomery, AL
9052	Brown Street Site/Guntersville	1908 Brown Street, Guntersville, AL
9053	City of Enterprise	Enterprise, AL
9054	West End Landfill	Hwy 202 & Adams St, Anniston, AL
9055	Chevron Plant/Troy	Three Notch Rd/CO Rd 21, Troy, AL

Table 2-1 (continued)
Alabama Hazardous Substance Cleanup Fund Sites
at Which Marketing Opportunities Exist

State Reference No.	Site Name	Address
9056	UNR Rohn	911 Thomason St, Tarrant, AL
9057	Talladega Gold Mining	Mump/Talladega Crk, Talladega, AL
9058	Howell's Ferry Road Drums	Howell's Ferry Road, Mobile, AL
9059	Coosa Drums	Not Available
9060	Pine Mountain Drums	Pine Mountain Rd Fire Dept, Pine Mountain, AL
9061	Hoover Drum Site	Hoover Fire Station #6, Hoover, AL
9062	Square D Metals	940 Moores St. NE, Leeds, AL
9063	Clanton Drum Site	Chilton County Jail, Clanton, AL
9064	Heil	45th St & Valley Head Rd, Ft. Payne, AL
9065	Tanner Farm Site	Rt 1 Box 6 (Jeffrey St), Tanner, AL
9066	Tillman's Corner Drums	CO Rd, 193, Mobile, AL
9067	Good Hope Carbide Spill	I-65 MM 303/Good Hope Rest Stop, Good Hope, AL
9068	Cotaco DDT	Cotaco Fire Dept, Lacey Springs, AL
9069	Lathan Drum	162 Firestone Dr, Huntsville, AL
9070	OPP Pesticides	CO Rd 467, Kingston, AL
9071	Three Star Landfill	CO Rd 38, Lynn, AL
9072	Greenville Plating	P.O. Box 583, Greenville, AL
9073	Brockway Glass	3480 Lower Wetumpka Rd, Montgomery, AL
9074	Capitol City Plume, RSA Tower	Corners of Madison & McDonugh St, Montgomery, AL
9075	Camp Sibert	6071 Steele Station Rd, Rainbow City, AL
9076	Goodyear	7526 Akzo Blvd, Scottsboro, AL
9077	Lee County Rd 199 Drum	Lee County Rd 199 at the Bridge, Opelika, AL
9078	Deridder	Main St, Whistler, AL
9079	Clements Auto Parts	Not Available
9080	Moffett Road Drums	5016 Moffett Rd/Vet Clinic, Mobile, AL
9081	Montgomery Food Processors	4530 Mobile Hwy, Montgomery, AL
9082	Campbell Gap Road Drums	Campbell Gap Rd, Kenner, AL

Table 2-1 (continued)
Alabama Hazardous Substance Cleanup Fund Sites
at Which Marketing Opportunities Exist

State Reference No.	Site Name	Address
9083	Gates Power Drive	518 Craft St, Dothan, AL
9084	Cleburne County Drums	EMA 406 Vickery St, Heflin, AL
9085	Lee County Road Drums	Lee CO Rd 51 Recycling Center, Opelika, AL
9086	Safety Kleen	1002 Hoke Ave, Dolomite, AL
9087	Rudolph Perkins	425 Gate 3 Rd, Anniston, AL
9088	TI Aerospace System	#1 Twin Creek Dr, Tallasse, AL
9089	ABC Auto Parts	Hwy 79, Tarrant, AL
9090	County Rd 400 Drums	County Rd 400 & Hwy 72, Muscle Shoals, AL
9091	Schuffert Tanker Truck	1708 Cong., WL Dickinson Dr, Montgomery, AL
9092	Lipscomp Drums	Avenue E Between 18th & 19th Streets, Lipscomb, AL
9093	Lake Purdy Lab Dump	Not Available
9094	Southern Aluminum Castings	43575 Nicholsville Rd, Bay Minette, AL
9095	Johnson's Landfill	SR 24 & CO Rd 40, Trinity, AL
9096	31St Street Ensley Drum	31St Street, ADEM Field Office, Ensley, AL
9097	231 Troy Drum Site	Hwy 231 & Hanchey, Troy, AL
9098	Doberman Club Drums	1530 Vanderbilt Place, Birmingham, AL
9099	Jackson Landfill Spill	Jackson Landfill, Jackson, AL
9100	Alloy Castings	PO Box 1645, Columbiana, AL
9101	Atmore Aluminum	Hwy 21 N, 21/2 Miles, Atmore, AL
9102	Salco Road Drums	Not Available
9103	Godsey's Tuscumbia Tanks	16th & Georgia St, Tuscumbia, AL
9104	Sylacauga Health Dept Drum	Sylacauga Health Dept/Hickory St, Sylacauga, AL
9105	Trussville Foundry	Trussville, AL
9106	Empire Road Lead Site	1157 Empire Rd, Sumiton, AL
9107	Catalytic	Hwy 25 N, Wilsonville, AL
9108	Jones Tire & Battery	820 Ave East, Birmingham, AL
9109	Auburn Treatment Plant	S'Side Wastewater Treatment Plant, Auburn, AL

Table 2-1 (continued)
Alabama Hazardous Substance Cleanup Fund Sites
at Which Marketing Opportunities Exist

State Reference No.	Site Name	Address
9110	Bullock County AST	Bullock CO Hwy Dept Dist-Shop, Union Springs, AL
9111	Florence Wagon Works	Riverside Dr, Florence, AL
9112	Fullco Lumber	Hwy 5 N, Haleyville, AL
9113	Linden - Marengo County Lot	Hwy 43 & Ray St, Linden, AL
9114	Montgomery Zoo	329 Vandiver Blvd, Montgomery, AL
9115	Bachelor Field Airport	US Hwy 31/1.8 Mi N of Airport Rd
9116	Escatawpa River Airport	Hwy 98/Escatawpka River Bridge, Wilmer, AL
9117	Evergreen I-65 Drum	300 Yards Past Mile Marker 88
9118	Hall Chemical	1951 Guntersville Rd/Hwy 69E, Arab, AL
9119	Southland Agri Chemical/Air Pro	1075 Chandler St, Montgomery, AL
9120	Duck Springs	On Duck Springs Rd, Duck Springs, AL
9121	Cedar Street Lot	Cedar St, Demopolis, AL
9122	Opelika Pesticides Drums	Lafayette Pkwy, Opelika, AL
9123	Caren Inc. Tanks, Gulf Stores	22900 Brown Lanes, Gulf Shores, AL
9124	Benco, Ft. Deposit	#1 Benco Dr, Ft. Deposit, AL
9125	I-10 Mobile Sludge Tank	Marion & Conception Streets, Mobile, AL
9126	Allworth Drums	500 Medco Rd, Burmingham, AL
9127	Coosa Co Wildlife Mgt Area Drums	Coosa Co Hwy Dept/2 BX 53-B, Rockford, AL
9128	Madison Co Drum/Ready SEC Rd	Madison Co Hwy Dept?6084 Hwy 53, New Hope, AL
9129	Sulligent Hwy 17 Drums	Not Available
9130	Craig AFB/Selmont Service Center	Hwy 80, Craig Air Force Base, Selma, AL
9131	Averitt Express	701 West Point Parkway, Opelika, AL
9132	Blackwater River Drum	Not Available
9133	Hubbertville Drum	Not Available
9134	Birmingham Southern Precision Drum	4400 Powell Ave, Birmingham, AL
9135	NASA Marshall Space Flight Center	Redstone Arsenal, Huntsville, AL
9991	Parker Creek Drum Site	Parker Creek

Table 2-1 (continued)
Alabama Hazardous Substance Cleanup Fund Sites
at Which Marketing Opportunities Exist

State Reference No.	Site Name	Address
9992	Indian Creek Drum Site	Indian Creek, Huntsville, AL
9993	Crossway St Drum Site	500 Block of Cross St, Birmingham, AL
9994	Airport Rd & 50th St Drum Site	50th St Baptist Church, Birmingham, AL
9995	Pinedale Shores	St. Clair Rd Stop, Asheville, AL
9996	Central Foundry	Old Holt Rd off River Rd, Holt, AL

Source: ADEM, 1995

Table 2-3
NPL Sites in Alabama at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	OPERABLE UNIT (LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: CIBA-GEIGY CORP. (MCINTOSH PLANT) **NPL STATUS:** Final					**EPA ID:** ALD001221902 **SIZE:** 25 Acres		**ADDRESS:** OFF HWY 43, MCINTOSH, AL 36553 **TYPE:** Agricultural Chemicals (Organic & Inorganic); Industrial Organic Chemicals	
02	NA	(RP/FE)	6/30/96	Y	GW; SL; SO	25,714,600 gal; 127,300 cy	METALS; OTHER ORGANICS; PESTICIDES/HERBICIDES; VOC	Monitoring; Disposal of Residual; Thermal Treatment with On-Site Placement
03	WETLAND	(RP/FE)	4/2/97	N	GW; SD; SO; SW	NA	NA	NA
04	NA	(RP/FE)	6/30/96	Y	DB; GW; SL; SO; ST	9,292,000 gal; 12,726,000 gal; 63,000 cy; 46,000 cy	METALS; OTHER INORGANICS; PESTICIDES/HERBICIDES; VOC	Decontamination; Disposal of Residual; Off-Site Treatment; Monitoring; Solidification and Stabilization; Thermal Treatment with On-Site Placement
SITE NAME: INTERSTATE LEAD CO. (ILCO) **NPL STATUS:** Final					**EPA ID:** ALD041906173 **SIZE:** 8.5 Acres		**ADDRESS:** 1247 BORDEN AVE SE, LEEDS, AL 35094 **TYPE:** Abandoned - No Use	
01	SOIL REMEDIATION	(F/MR)	6/30/97	Y	AI; DB; GW; SD; SO; SW	NA	METALS	Monitoring; Surface Capping Only; Disposal of Residual; Solidification and Stabilization; Natural Attenuation
02	GROUNDWATER REMEDIATION	(F/RP/MR)	6/30/97	Y	DB; GW; RC; SD; SL; SO; SW	NA	NA	NA
03	NA	(F/RP)	3/30/98	N	NA	NA	NA	NA
SITE NAME: OLIN CORP. (MCINTOSH PLANT) **NPL STATUS:** Final					**EPA ID:** ALD008188708 **SIZE:** 325 Acres		**ADDRESS:** OLIN RD, MCINTOSH, AL 36553 **TYPE:** Industrial Organic Chemicals	
01	NA	(RP/FE)	9/30/96	Y	GW; RC; SO	NA	NA	NA
02	RI/FS	(RP/FE)	6/30/98	N	GW; SD; SW	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.

[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 2-3 (continued)
NPL Sites in Alabama at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: REDWING CARRIERS, INC. (SARALAND) NPL STATUS: Final					EPA ID: ALD980844385 SIZE: 1 Acre		ADDRESS: 627 US HWY 43, SARALAND, AL 36571 TYPE: Apartment Building Operators	
01	NA	(RP/FE)	6/30/95	Y	GW; SD; SL; SO; SW	12,000,000 gal	METALS; OTHER INORGANICS; OTHER ORGANICS; PESTICIDES/HERBICIDES; VOC	Natural Attenuation; Biodegradation and Bioremediation; Steam Stripping; Off-Site Treatment; Thermal Treatment with On-Site Placement; Temporary On-Site Storage; Solidification and Stabilization; Disposal of Residual
SITE NAME: STAUFFER CHEMICAL CO. (COLD CREEK PLANT) NPL STATUS: Final					EPA ID: ALD095688875 SIZE: 11 Acres		ADDRESS: US HWY 43, BUCKS, AL 36512 TYPE: Agricultural Chemicals (Organic & Inorganic)	
02	SOURCE	(RP/FE)	12/31/97	N	DB; SL; SO; ST	NA	NA	NA
03	SWAMP	(RP/FE/F)	12/30/95	Y	OT; SD; SO; SW	80,000 cy	METALS	Surface Capping Only; Disposal of Residual; Monitoring
SITE NAME: STAUFFER CHEMICAL CO. (LEMOYNE PLANT) NPL STATUS: Final					EPA ID: ALD008161176 SIZE: 950 Acres		ADDRESS: US HWY 43, LEMOYNE, AL 36505 TYPE: Industrial Organic Chemicals	
02	SWMU'S	(RP/FE)	6/30/97	N	DB; SL; SO; ST	NA	NA	NA
03	SWAMP STUDY	(F)	12/30/95	Y	OT; SD	NA	NA	Excavation
SITE NAME: T.H. AGRICULTURE & NUTRITION (MONTGOMERY) NPL STATUS: Final					EPA ID: ALD007454085 SIZE: 1 Acre		ADDRESS: 3017 BIRMINGHAM HWY, MONTGOMERY, AL 36108 TYPE: Manufacturing Chemicals; Other; Recycling Drums	
01	NA	(RP/FE)	3/30/97	Y	GW; SD; SO; SW	NA	NA	NA
02	ECOLOGICAL ASSESSMENT	(RP/FE)	9/30/96	N	NA	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.

[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

Al	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 2-3 (continued)
NPL Sites in Alabama at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: USA ALABAMA ARMY AMMUNITION PLANT **NPL STATUS:** Final					**EPA ID:** AL6210020008 **SIZE:** 5,168 Acres		**ADDRESS:** STATE HWY 235, CHILDERSBURG, AL 35044 **TYPE:** NA	
04	AREA B GROUNDWATER & SOILS	(FF)	9/30/97	N	GW; SO	NA	NA	NA
05	AREA A SOIL & GROUNDWATER	(FF)	3/30/97	N	SO; GW	NA	NA	NA
SITE NAME: USA ANNISTON ARMY DEPOT (SE INDUS. AREA) **NPL STATUS:** Final					**EPA ID:** AL3210020027 **SIZE:** 600 Acres		**ADDRESS:** OFF AL HWY 202, BYNUM, AL 36253 **TYPE:** Ordnance Production and Storage; Ordnance Testing and Maintenance; Buildings (Residential and commercial); Recycling; Other; Refuse Systems--Industrial Landfill; Salvage Yard/Junk Yard, and Co-disposal Landfill; Sanitary Services	
02	SOIL	(FF)	9/30/97	N	RC; SD; SL; SO; ST	NA	NA	NA
SITE NAME: USA REDSTONE ARSENAL (US ARMY/NASA) **NPL STATUS:** Final					**EPA ID:** AL7210020742 **SIZE:** 38,300 Acres		**ADDRESS:** REDSTONE ARSENAL, HUNTSVILLE, AL 35898 **TYPE:** NA	
01	OP UNIT 1	(FF)	9/30/99	N	NA	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.

[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

Al	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

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Table 2-4
RCRA Facilities Currently Undergoing Corrective Action in Alabama[1]

SITE NAME MAILING ADDRESS	EPA ID	SWMU NO. AND UNIT NAME
UNITED REDWING CARRIERS CREOLA 10565 HWY 43, CREOLA, AL 36525-5455	ALD021257951	TWO SWMUS (#4 & #14)
		PHASE II - LANDFILL & BIOLOGICAL PONDS
		AREA #1 PHASE I - NORTH & SOUTH LAGOONS
		AREA #1 PHASE II - NORTH & SOUTH LAGGONS

1 Data as of May 1995 from the EPA RCRIS database. See Chapter 1 for a detailed description of data sources.

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3.0 DEMAND FOR REMEDIATION OF SITES IN FLORIDA

This chapter provides a detailed discussion of the opportunities available in the State of Florida for vendors of innovative technologies. This chapter is organized in seven sections. The first section describes the organization and authority of the State's program. The next section discusses opportunities at sites managed by the State. The third and fourth sections discuss opportunities at sites addressed by the Federal Superfund Program and Federal Resource Conservation and Recovery Act (RCRA) corrective action sites, respectively. The U.S. Environmental Protection Agency (EPA) has not authorized Florida to administer corrective action; however, Florida does have a State corrective action program. The fifth section discusses the market at underground storage tank (UST) sites managed by the State. Subsequent sections provide information about opportunities at Federal facilities and provide further useful information about working in the State.

Figures 3-1 and 3-2 present two maps of Florida that indicate the locations of the sites in the State that are on the National Priorities List (NPL) and RCRA facilities in the State.[1] The 58 NPL sites in Florida are concentrated near the cities of Miami, Tampa, Jacksonville, and at the far western edge of the panhandle. While RCRA facilities are found throughout the State, there are major concentrations in the areas of Miami, Tampa, and Jacksonville.

Summary Information

With one of the largest numbers of NPL sites in the Southeastern region, Florida provides significant opportunities to vendors of innovative technologies. Twenty-nine of 58 NPL sites have operable units at which remedial action has not yet begun. The Florida Department of Environmental Protection manages 11 abandoned hazardous waste sites. The Resource Conservation and Recovery Information System (RCRIS) currently lists 90 facilities in Florida, 2 of which are currently under a requirement to conduct a corrective measures study (CMS). Data on USTs indicate that 20,615 tank sites in the State are in need of cleanup. There are 515 active sites at 23 DoD installations and formerly used defense sites (FUDS), 309 at which cleanup activities are planned.

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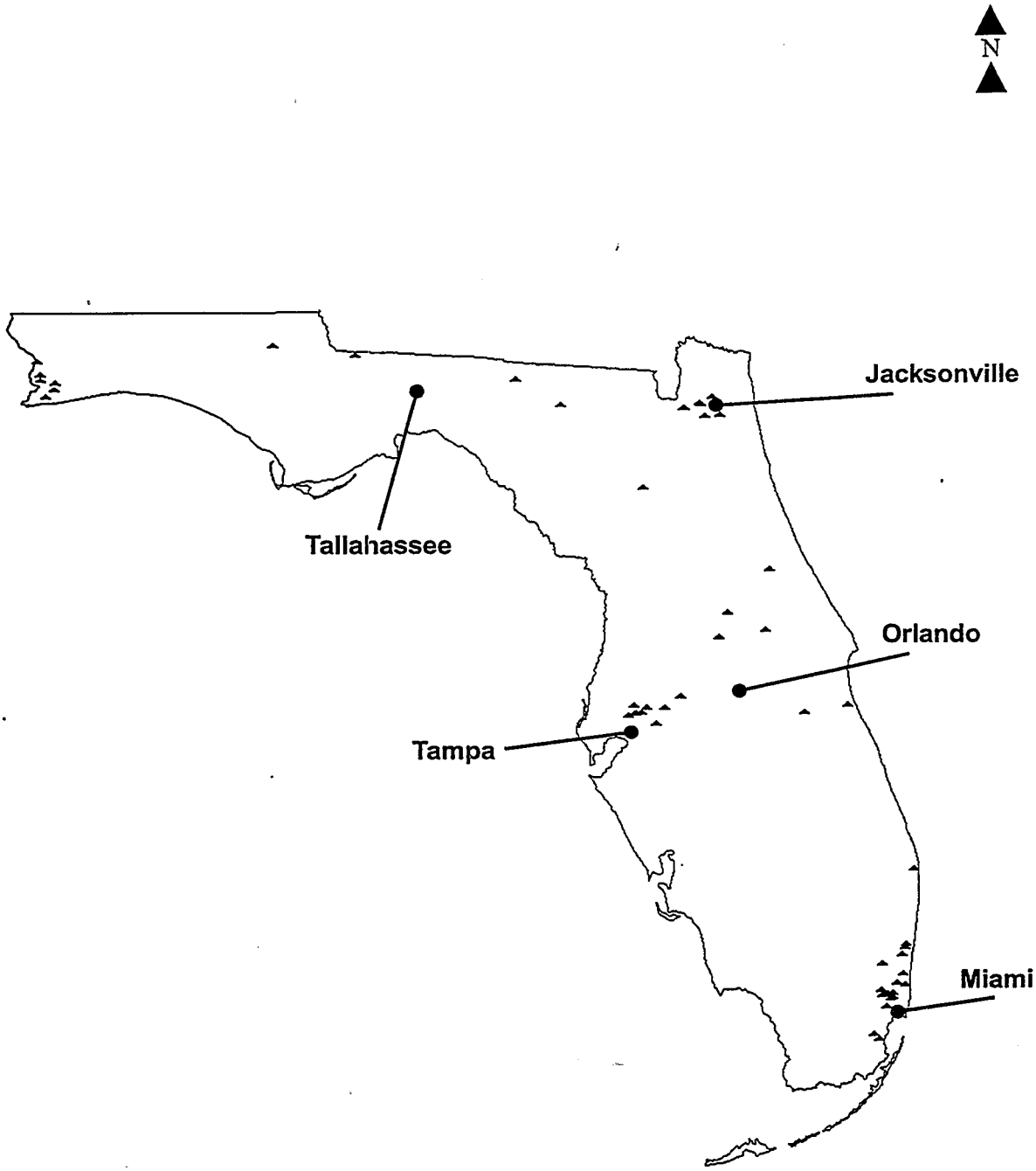
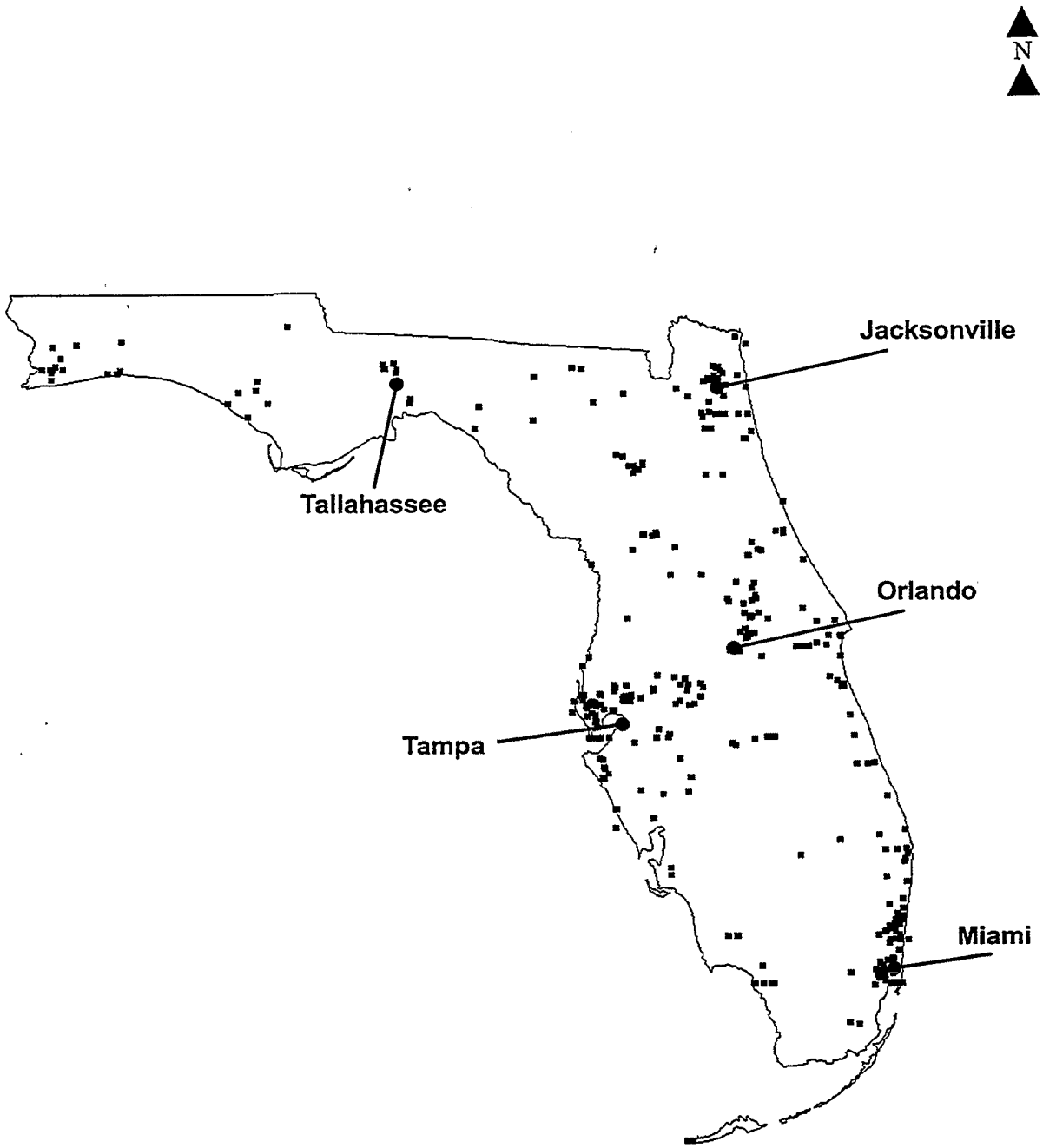
[1] Figures 3-1 and 3-2 do not indicate the locations of *all* NPL sites or *all* RCRA facilities located in Florida. LandView II™ contains information from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) on NPL sites and other sites. It also contains information from the Biennial Reporting System (BRS) on treatment, storage, and disposal facilities and major generators of hazardous waste.



NOT TO SCALE

Source: Modified from Landview II, based on data as of September 1994.

Figure 3-1
NPL Sites in Florida



NOT TO SCALE

Source: Modified from Landview II, based on data as of September 1994.

Figure 3-2
RCRA Facilities in Florida

3.1 The Florida Hazardous Waste Management Program

The Florida Department of Environmental Protection (FDEP) is authorized by Chapter 403 of the Florida Statute to implement pollution control activities, develop groundwater protection standards, and recover cleanup costs from responsible parties. FDEP's Division of Waste Management (DWM) is composed of the Bureau of Waste Cleanup and the Bureau of Waste Management. DWM implements state and Federal laws relating to solid and hazardous waste management, and regulates construction and installation of above- and below-ground storage tanks. It also is responsible for cleanup of hazardous waste sites. As of 1995, FDEP has 62 staff members and 2 attorneys located in 7 regions.

The bureaus operate under the authorities of the Pollutant Discharge Prevention and Removal Act (PDPRA), sections 376.30 through 376.319 and the State's Resource Recovery and Management Act (RRMA), sections 403.701 through 403.7721. The PDPRA provides enforcement authority and establishes the Water Quality Assurance Trust Fund and the Inland Protection Trust Fund; the RRMA also has enforcement provisions and establishes the Hazardous Waste Management Trust Fund (HWMTF). The HWMTF allocates funds for cleanup in cases in which a responsible party cannot be identified or located.

The Bureau of Waste Cleanup is responsible for all activities relating to the cleanup of the site contaminated by hazardous wastes, petroleum products, or other pollutants and the regulation of above- and below-ground storage tanks. The Bureau has seven sections:

- Storage Tank Regulation Section is responsible for implementing the State's above- and below-ground storage tank regulation programs. This section uses funds from the Inland Protection Trust Fund to accomplish its work.
- Petroleum Cleanup Reimbursement Section is responsible for administering the State's Petroleum Cleanup Reimbursement Program. This section also is funded by the Inland Protection Trust Fund.
- Petroleum Cleanup Section is responsible for managing contractors to cleanup state-lead sites in the Petroleum Cleanup program. This section is funded by the Water Quality Assurance Trust Fund.

- Hazardous Waste Cleanup Section is responsible for managing contractors for state-wide cleanup of hazardous waste sites, overseeing private party cleanups, coordinating the Federal Superfund program, and implementing the new drycleaner contamination cleanup program. This section is funded by the Water Quality Assurance Trust Fund.

- The Technical Review Section provides scientific technical assistance and reviews contamination assessment and risk assessment reports for the Department's cleanup programs. This section also administers EPA grants to assess potential contamination sites and to oversee cleanup of DoD and other Federal facilities. This section is funded by the Hazardous Waste Management Trust Fund.

- The Site Investigation Section investigates known or suspected cases of groundwater contamination, provides technical assistance, and develops recommendations in support of district enforcement actions. This section is funded by the Water Quality Assurance Trust Fund.

- The Engineering Support Section provides engineering technical assistance and reviews remedial action documents and engineering designs for FDEP's cleanup programs. This section's activities are funded by the Inland Protection and Water Quality Trust Funds.

The Bureau of Solid and Hazardous Waste is responsible for the planning of and management of solid and hazardous waste. Operations range from waste reduction and pollution prevention to permitting of landfills, and review and permitting of hazardous waste storage, treatment, and disposal. The Bureau has four sections:

- The Hazardous Waste Management Section is responsible for proper disposal of small quantity hazardous waste, management of spent mercury containing lamps and planning for hazardous waste capacity assurance.

- The Hazardous Waste Regulation Section is responsible for implementing RCRA permitting requirements.

- The Solid Waste Management Section is responsible for implementing the Municipal Solid Waste Landfill program and providing grants to local government recycling programs.

- The Waste Reduction Section is responsible for the recycling programs, pollution prevention assistance, and implementation of the Advance Disposal Fee, and Waste Reduction programs.

The Inland Protection Trust Fund is funded by a tax on petroleum products and is used to clean up petroleum contamination, test wells, etc. The Water Quality Assurance Trust Fund is funded by a tax on various hazardous substances and currently has revenues of $160 million per year. The HWMTF typically has a balance of less than $2 million per year. The HWMTF serves as a holding account for Federal funds, primarily EPA grants and DoD cleanup funds. This fund also serves as the collection point for the drycleaner tax collected for the cleanup of drycleaning facilities; these monies are transferred to the Water Quality Insurance Trust Fund when it is time to make expenditures. The fund receives money from cost

recoveries, interest, penalties, and transfers. The fund can be used for the same activities as the Water Quality Assurance Trust Fund that Florida also has in place for emergency response, site investigation, studies and design, remedial actions, operations and maintenance, grants to local governments, program administration, natural resource restoration, and State CERCLA match.

Florida's underground storage tank program is regulated by Florida Administrative Code Chapter 717-61.

3.2 The Market at Sites Managed Under State Authorities

The FDEP indicates that there are 11 sites under the authority of RRMA. The sites are presented in **Table 3-1 at the end of this chapter**. Information also exists on the types of sites, contaminants, and media contaminated. There are four industrial solvent sites, two electroplating sites, a landfill, and several manufacturing operations. Contaminants include volatile organic compounds (VOC), semivolatile organic compounds (SVOC), such as petroleum hydrocarbons, and heavy metals. All of the sites reported groundwater contamination and seven sites reported soil contamination.

3.3 The Market at Abandoned Sites Managed Under the Federal Superfund Program

As of May 1995, EPA had listed 58 sites in Florida on the NPL, 4 of which are proposed sites. Table 3-2 provides summary information obtained from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database on the number of sites and operable units (OU) listed on the NPL in Florida.

Table 3-2
Number of Sites and Operable Units at NPL Sites in Florida

Phase of Activity[a]	Number of Sites[b]	Number of Operable Units
Pre-remedial	26	87
Remedial	32	60

Source: Data as of May 1995 from EPA CERCLIS database; see Chapter 1 for a detailed description of the data sources.

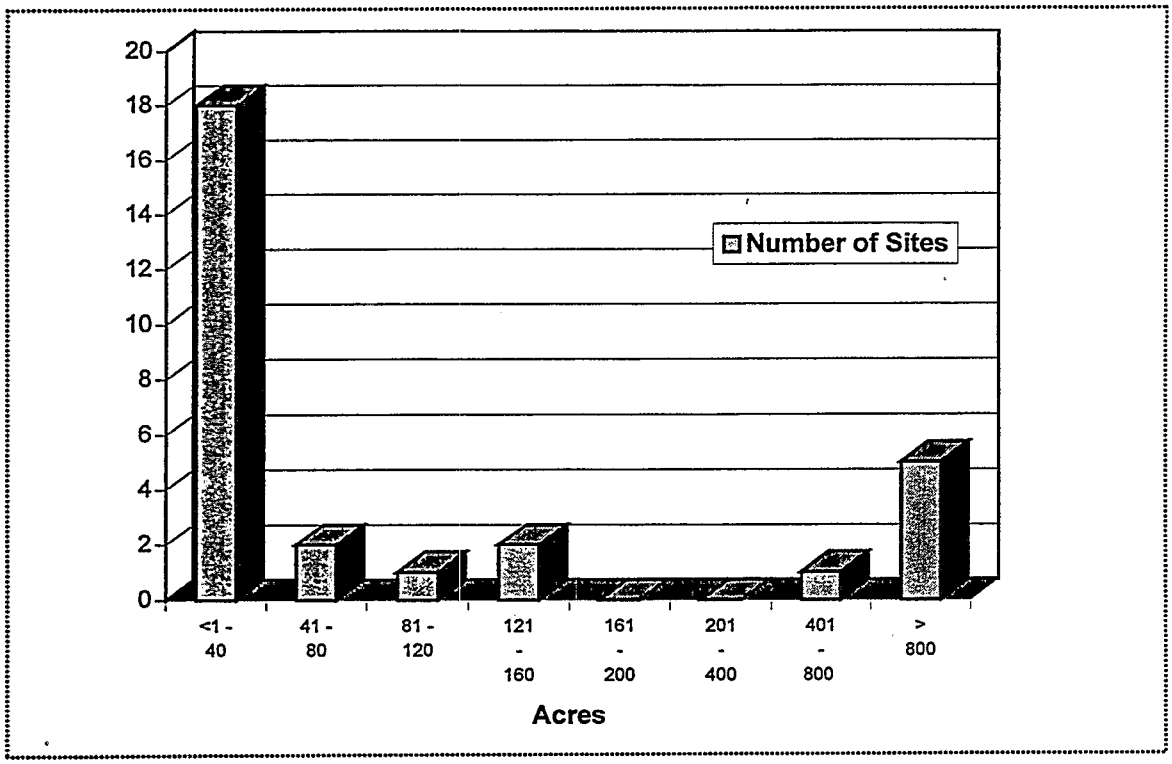
[a] Sites with pre-remedial activities are sites where remedial design and construction have not yet begun, although the remedy may have been chosen. These sites, especially the pre-remedial sites still in the investigation phase, present long-term opportunities for vendors. Sites with remedial activities are sites where remedial design has begun and construction might not have begun. Where technologies have been selected but no vendor has been chosen, a site may present a short-term business opportunity.

[b] A site may have more than one operable unit in each phase, so operable units may be counted more than once.

Table 3-3, at the end of the chapter, provides information on 29 NPL sites in Florida at which marketing opportunities exist. Data for this table also was obtained from the CERCLIS database as it existed in May 1995. The table reflects that in 29 out of 58 NPL sites, remedial action has not started at 1 or more OUs. The sites and OUs for which the technologies have been chosen but the vendors for the technologies have not, are of the greatest interest to potential vendors. Of the 29 sites that require remedial action, 5 are DoD installations. Marketing opportunities for DoD sites are discussed more fully in the section on opportunities at Federal facilities. Data on contaminants are available for only 10 of the sites. The contaminants include VOCs, heavy metals, pesticides, and herbicides. Data on contaminated media are available at 27 of the 29 NPL sites at which marketing opportunities exist in Florida. There are 15 sites with reported contamination, 25 cases of contaminated groundwater, and 14 cases of surface-water contamination. In addition, 14 cases of contaminated sediment and 6 cases of contaminated debris and sludge are reported. At the 10 sites for which data on volume of contamination are available, a range of 85 gallons to 50 million gallons of groundwater and a range of approximately 10 to 56,000 cubic yards of sludge are identified as contaminated. There are 68 OUs at those sites, 35 of which are the responsibility of DoD.

Figure 3-3 presents the distribution of sizes of the sites. The figure is a frequency histogram which indicates the site size that may be indicative of the total amount of contamination. The sites in Florida range from 1 to more than 20,000 acres. Size data were obtained from CERCLIS for all 29 sites at which marketing opportunities exist. Twenty of the sites are 50 acres or less in area. Of the remaining sites, 4 are in the range of 120 to 500 acres, and 5 are larger than 2,000 acres in area.

Figure 3-3
NPL Site Size Distribution for the State of Florida



Technologies selected for use at NPL sites include biodegradation, air stripping, solidification and stabilization, steam stripping, and leachate treatment.

3.4 The Market at RCRA Corrective Action Sites

Florida is not authorized to administer the RCRA corrective action program; however, the State does participate in the corrective action program on a site-specific basis by reviewing corrective action documents, such as RFIs and Quality Assurance Project Plans.

Data from the Resource Conservation and Recovery Information System (RCRIS) indicate that there are 90 RCRA facilities in the State. Two RCRA facilities are currently required to perform a CMS. The number of facilities with CMS imposed is not a direct subset of RCRA treatment, storage, and disposal (TSD) facilities, instead it is a subset of TSD facilities and hazardous waste generators. While TSD facilities are

statutorily required to address corrective action, EPA has discretionary authority to impose corrective action on generators.

Table 3-4, at the end of this chapter, presents those facilities. For the two facilities, the entire facility is listed as subject to requirements for corrective action. It is likely that, at those facilities, several different problems have been identified that indicate a need for corrective action for the entire facility. They include two Federal facilities, the Pinellas Plant (operated by DOE) and Naval Air Station Boca Chica, a FUDS installation. Information about these two facilities is discussed in the section on Federal facilities. The Eveready Battery facility manufactures batteries and treats wood with preservatives. There are no RCRA data available on either the contaminants or the media contaminated at the site. In addition, 36 facilities are under a requirement to conduct a RCRA facility investigation (RFI). The number of facilities with an RFI imposed is not a direct subset of RCRA TSD facilities, instead it is a subset of TSD facilities and hazardous waste generators. While TSD facilities are statutorily required to address corrective action, EPA has discretionary authority to impose corrective action on generators. As discussed in Section 1.2, these facilities also may provide either a long-term opportunity or near-term opportunity where no CMS is necessary to begin corrective action or corrective activity begins in accordance with the stabilization initiative.

3.5 The Market at UST Sites Managed by the State

The Storage Tank Regulation Section of the Division of Waste Management of FDEP administers the State's UST program. The program is funded by the Inland Protection Trust Fund. The section implements all aspects of the tank program, including rule development and providing technical assistance and training to FDEP district offices and local governments. Table 3-5 summarizes UST corrective action measures in Florida. There are 42,158 active tanks in the State. Active tanks are defined as tanks still in service (EPA 1993). As of March 31, 1996, the EPA Office of Underground Storage Tanks (OUST) had identified 20,615 leaking tanks in Florida at which cleanup had not been initiated. That number represents the difference between the two data elements "confirmed releases" and "cleanups initiated." Cleanup at USTs with soil contamination usually is completed within 6 months to 2 years after the site has been identified. Cleanup at USTs with groundwater contamination is usually completed within 2 to 5 years after the site has been identified. Therefore, the number of USTs identified as opportunities for vendors of innovative technologies will change rapidly.

Table 3-5

Underground Storage Tank Corrective Action Measures in Florida as of the First Half of FY96

Active Tanks	Tanks Closed	Confirmed Releases	Cleanups Initiated	Cleanups Completed	Cleanups Not Yet Initiated
42,158	71,597	25,184	4,569	3,040	20,615

Source: EPA Office of Underground Storage Tanks Semi-Annual Activity Report, for First Half of Fiscal Year 1996 (ending March 31, 1996).

In national studies of USTs performed by EPA 1991 and 1992, it was found that about 87 percent of the tanks, are used to manage gasoline or diesel fuel, kerosene, or heating oil. Of the remaining USTs, 11 percent manage other materials and wastes, such as used oil (4 percent), hazardous material (2 percent), and other material (5 percent) or are empty (2 percent). The majority of the contamination problems are related to the contamination of soils and groundwater with petroleum products that contain VOCs and SVOCs.

3.6 The Market at Federal Facility Sites in Florida

The Pinellas Plant is the only DOE facility in Florida at which remedial action activities are planned. Florida has 23 operational or closing DoD military installations and formerly used defense sites (FUDS) at which remedial activities are planned. There are 515 active sites at the DoD installations, 309 of which have future remedial action planned. Active sites are those at which some form of remediation activity is planned or underway. The total number of sites to be remediated may exceed that figure because, in general, DoD does not plan remediation at a site until the remedial investigation and feasibility study (RI/FS) have been completed.

The *Environmental Restoration and Waste Management Five-Year Plan* (DOE 1993) indicates that a total of more than $27 million is estimated to be needed between fiscal year (FY) 1996 and FY 1998 in all phases of cleanup activities at the Pinellas Plant. At the Pinellas Plant, there are a number of sites at which corrective action is planned under the authority of RCRA. Currently, RCRIS indicates that there are seven sites at the Pinellas Plant subject to corrective action that may present opportunities for vendors.

Groundwater contamination from VOCs is the main environmental concern of the corrective action. The Pinellas Plant is a 99 acre site that was used to produce weapons components. In 1994, the plant stopped producing components and has transitioned from a defense mission to an environmental management mission. The current mission is to achieve a safe shutdown of the facility and prepare the site for alternative uses as a community resource for economic development. Low-level radioactive waste will be generated from the cleanup of tritium processing areas, including laboratories. Hazardous waste will be generated from the cleanup of process areas.

The *Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994* indicates that a total of approximately $1.36 billion is projected to be spent through the year 2020 in all phases of cleanup at the 16 installations. The facilities that indicate an intention to spend more than $100 million are Naval Station Mayport, Naval Air Station Jacksonville, Naval Air Station Pensacola, Eglin Air Force Base, Cape Canaveral Air Force Station, and Naval Air Station Whiting Field. These installations account for approximately $1.05 billion of the $1.36 billion. Many of the sites identified at the installations either are undergoing or are scheduled to undergo an RI/FS and therefore are at a relatively early stage of the remediation process. Five of the 11 installations are on the NPL; there are 166 sites at those installations. Because the spending projections are prepared at the installation level, it is not possible to determine the amount of money allocated for activities at individual sites.

Most of the contaminants at sites on military installations at which remediation currently is planned fall into one of three categories: petroleum, oil, and lubricants (POL); VOCs; and heavy metals. Those contaminants typically are found in the soil at all sites. No data are available on volumes of soil and groundwater to be treated. Table 3-6 provides information on the individual installations in the State and the sites that are subject to remediation at those installations. Staff at each installation determine the individual sites at which they plan to perform remedial actions. Cleanup already may be underway at other sites; such sites are not included in the table because it is unlikely that they will afford an opportunity for vendors of innovative technologies.

Table 3-6
DoD Installations and Sites in Florida

Name and Outyear Funding ($000)	Federal Facility Identification Number	Codes[1]	Number of Sites at Which Cleanup is Planned
Avon Park Air Force Range Outyear Funding FY95-2004 $9,996	FL457212458700	A	1

Table 3-6 (continued)
DoD Installations and Sites in Florida

Name and Outyear Funding ($000)	Federal Facility Identification Number	Codes[1]	Number of Sites at Which Cleanup is Planned
Cape Canaveral Air Force Station Outyear Funding FY95-2010 $134,162	FL457112440700	A	46
Coastal Systems Station Panama City Outyear Funding FY95-2005 $8,280	FL417002379200	A	9
CP Gordon Johnston Outyear Funding FY95-2005 $4,213	FL49799F715100	F	4
Eglin Air Force Base Outyear Funding FY95-2013 $175,295	FL457172436600	A	5
Homestead Air Force Base Outyear Funding FY95-2020 $42,742	FL457002403700	A,N	12
MacDill Air Force Base Outyear Funding FY95-2002 $38,543	FL457002458200	A	3
Naval Air Station Cecil Field Outyear Funding FY95-2004 $87,732	FL417002247400	A,N	23
Naval Air Station Jacksonville Outyear Funding FY95-2010 $190,942	FL417002441200	A,N	20
Naval Air Station Key West Outyear Funding FY95-2005 $31,277	FL417002295200	A	18
Naval Air Station Pensacola Outyear Funding FY95-2010 $162,672	FL417002461000	A,N	53
Naval Air Station Whiting Field Outyear Funding FY95-2010 $103,668	FL417002324400	A,N	41
Naval Station Mayport Outyear Funding FY95-2020 $286,813	FL417002426000	A	26
Naval Training Center Orlando Outyear Funding FY95-2004 $45,234	FL417002436700	A	8
Patrick Air Force Base Outyear Funding FY95-2006 $4,318	FL457112440400	A	18

Table 3-6 (continued)
DoD Installations and Sites in Florida

Name and Outyear Funding ($000)	Federal Facility Identification Number	Codes[1]	Number of Sites at Which Cleanup is Planned
Bushnell Army Ammunition Facility Outyear Funding FY95-2008 $2,978	FL49799F436400	F	1
Cross City Army Ammunition Facility Outyear Funding FY95-1999 $1,226	FL49799439900	F	2
Dale Mabry Outyear Funding FY95-2010 $3,868	FL49799F715800	F	3
Fort Dade Outyear Funding FY95-2004 $4,108	FL49799F435100	F	3
Lakeland Army Ammunition Facility Outyear Funding FY95-2003 $3,155	FL49799F4331300	F	1
McCoy Air Force Base Outyear Funding FY95-2008 $4,679	FL49799F453600	F	3
Opa Locka Airport Outyear Funding FY95-2005 $4,130	FL49799F449300	F	3
Tyndall Air Force Base Outyear Funding FY95-2020 $10,545	FL457212412400	A	6

Source: *Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994*

[1] Codes:
- A = The installation is currently operational or on the BRAC list, and cleanup is covered by DERA or BRAC funds
- F = The installation is no longer active and is managed by the FUDS Branch
- N = The site is listed on the final National Priorities List

3.7 Further Market Information for Florida

A vendor that wishes to obtain information about sites in Florida that are managed by EPA may write to:

U.S. Environmental Protection Agency
Region 4
345 Courtland Street, NE
Atlanta, GA 30365

For information on RCRA facilities, the envelope should be marked to the attention of the Freedom of Information Act Officer, Office of RCRA and Federal Facilities. For information on CERCLA facilities in Florida, the envelope should be marked to the attention of the Freedom of Information Act Officer, South Superfund Remedial Branch. The requestor will be billed for the information, according to the volume of information provided.

For more information on USTs handled by EPA, vendors may contact:

John Mason
U.S. EPA, Region 4
345 Courtland Street, NE
Mail Code 4WM-GWP-15
Atlanta, GA 30365

Information also is available on the names and addresses of UST sites in the State that require remediation. A vendor may write to:

Florida Department of Environmental Protection
Storage Tank Regulation Section
Twin Towers Office Bldg., Room 403
Tallahassee, FL 32399-2400
(904) 488-3935

A vendor that wishes to obtain information about sites in Florida that are managed by the state may contact the following individuals at the Division of Waste Management:

BUREAU OF WASTE CLEANUP

Bureau Chief: Doug Jones
Phone: (904) 488-0190

Storage Tank Regulation Section
Adminstrator: Marshall Mott-Smith
Phone: (904) 488-3935

Petroleum Cleanup Reimbursement Section
Adminstrator: Chuck Williams
Phone: (904) 487-3299

Petroleum Cleanup Section
Adminstrator: Brian Dougherty
Phone: (904) 487-3299

Hazardous Waste Cleanup Section
Administrator: Dan DiDomenico
Phone: (904) 488-0190

Technical Review Section
Adminstrator: Jim Crane
Phone: (904) 488-3935

Site Investigation Section
Adminstrator: Bill Martin
Phone: (904) 488-0190

Engineering Support Section
Adminstrator: Tom Conrardy
Phone: (904) 488-3935

BUREAU OF SOLID AND HAZARDOUS WASTE

Bureau Chief: Bill Hinkley
Phone: (904) 488-0300

Hazardous Waste Management Section
Adminstrator: Raoul Clarke
Phone: (904) 488-0300

Hazardous Waste Regulation Section
Administrator: Satish Kastury
Phone: (904) 488-0300

Solid Waste Management Section
Administrator: Mary Jean Yon
Phone: (904) 488-0300

Waste Reduction Section
Administrator: Ron Henricks
Phone: (904) 488-0300

For information about DOE sites or any of DOE's technology development assistance programs, vendors may contact:

DOE's Center for Environmental Management Information
470 L'Enfant Plaza East
Suite 7112
Washington, DC 20024
(800) 736-3282

The U.S. Department of Defense (DoD) does not have a single point of contact that handles all of DoD's environmental restoration initiatives, site-level information, and technology programs. The Defense Environmental Restoration Program Annual Report to Congress for FY 1995 contains detailed information on environmental restoration accomplishments and schedules at DoD installations world-wide. This report is available on the Internet at the DoD Environmental Restoration home page at:

http://www.dtic.mil/envirodod/

The home page also provides links to other internet sites that pertain to DoD environmental restoration activities.

Table 3-1

Florida Resource Recovery and Management Act Sites in Florida at Which Marketing Opportunities Exist

LEAD	STATE NPL STATUS	REMEDIAL PHASE	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: AMERICAN CELCURE WOOD PRESERVING CORP **ADDRESS:** 1074 E 8TH ST, JACKSONVILLE, FL 32206-3974				**EPA ID:** FLD004062170 **STATE ID:** FL97		**SIZE:** NA **TYPE:** Wood Preservative Treatment
Bureau of Waste Cleanup	Proposed, active	Planned completion of contamination assessment report (02/93)	Groundwater	NA	Chromium, Cyanide, Other Volatile Organic Compounds, Phenol	To be determined
SITE NAME: CITY CHEMICAL - SANFORD **ADDRESS:** AIRPORT BLVD && JEWETT LANE, SANFORD, FL 32771				**EPA ID:** FLD980494702 **STATE ID:** FL58		**SIZE:** 1-2 Acres **TYPE:** Industrial Solvent Site
Bureau of Waste Cleanup	Active	Soil excavated (9/93); Design and construction of primary charcoal treatment system for groundwater planned to begin 9/94	Soil, Groundwater	NA	Trichloroethylene, Tetrachloroethylene, 1,2-dichloroethane, Other Organic Compounds	Soil -- excavation and treatment Groundwater -- primary charcoal treatment system and discharge to POTW
SITE NAME: CITY CHEMICAL - UNIVERSITY BLVD **ADDRESS:** 6586 UNIVERSITY BLVD, ORLANDO, FL 32817				**EPA ID:** FLD980845796 **STATE ID:** FL41		**SIZE:** 1 Acre **TYPE:** Industrial Solvent Site
Bureau of Waste Cleanup	Active	Planned completion of final design (11/94) and construction bidding thereafter	Groundwater	NA	Tetrachloroethene, Trichloroethene	Air stripping and carbon polishing with surface water discharge
SITE NAME: FASHION DRY CLEANERS **ADDRESS:** 6157 N 9TH AVE, ESCAMBIA, FL				**EPA ID:** NA **STATE ID:** FL78		**SIZE:** NA **TYPE:** Industrial Solvent Site
Bureau of Waste Cleanup	Active	Planned completion of final remedial design (12/94)	Groundwater	NA	Tetrachloroethylene	Installation of excavation wells; air stripping with carbon absorption and discharge
SITE NAME: HELMS DRUM SERVICE **ADDRESS:** 1764 HWY STATE ROAD 655, AUBURNDALE, FL 33823				**EPA ID:** FLD115397416 **STATE ID:** FL98		**SIZE:** 4-5 Acres **TYPE:** Drum Cleaning Operation
Bureau of Waste Cleanup	Proposed, active	Planned completion of contamination assessment report (7/94)	Soil, Groundwater	NA	Chromium, Cyanide, Lead, Mercury, Other Organic Compounds, Sodium, Zinc	Potential remediation: natural attenuation and monitoring but to be determined

Table 3-1 (continued)
Florida Resource Recovery and Management Act Sites in Florida at Which Marketing Opportunities Exist

LEAD	STATE NPL STATUS	REMEDIAL PHASE	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: OCALA PLATING ADDRESS: 3200 NW 16TH AVE, OCALA, FL 34475-3377				EPA ID: FLD072566102 STATE ID: FL60		SIZE: 6.6 Acres TYPE: Electroplating
Bureau of Waste Cleanup	Active	Planned completion of remedial design (6/95)	Soil, Sludge, Groundwater	NA	Cadmium, Chromium, Tetrachloroethylene	Soil -- excavation and off-site disposal as nonhazardous Sludge -- off-site disposal Groundwater -- recovery and treatment through POTW
SITE NAME: OMNI-VEST LANDFILL ADDRESS: IDLEWOOD DR, PENSACOLA, FL 32505				EPA ID: FLD980845143 STATE ID: FL50		SIZE: 6 Acres TYPE: Landfill/dump
Bureau of Waste Cleanup	Active	Remedial Design completed (02/92); remedial action pending	Soil, Groundwater, LNAPL	NA	Chromium, Copper, Ethylbenzene, Lead, Mercury, PAHs, Tetrachloroethane, Toluene, VOCs (LNAPL), Xylene, Zinc	Multimedia capping and groundwater monitoring; vapor extraction (LNAPL)
SITE NAME: RELIABLE CIRCUIT SYSTEMS ADDRESS: 12880 AUTOMOBILE BLVD, CLEARWATER, FL 34622-4711				EPA ID: FLD096597711 STATE ID: FL51		SIZE: NA TYPE: Steel/metal/electrical Processes
Bureau of Waste Cleanup	Active	Planned completion of feasibility study for groundwater remediation (12/94)	Groundwater	NA	Cis-1,2-dichloroethene, Trans-1,2-dichloroethene, Trichloroethene	To be determined
SITE NAME: SILVEX CORPORATION ADDRESS: SR 16, 8 MILES WEST OF I-95, NEAR ELWOOD, FL 32084				EPA ID: FLD061919668 STATE ID: FL52		SIZE: 1 Acre TYPE: Silver Smelting Operation
Bureau of Waste Cleanup	Active	Planned soil excavation (6/94); Final design and bidding services for soil submitted (4/91); Interim remedial measures for groundwater began operation (9/93)	Soil, Groundwater	NA	1,1,1-trichloroethane, Cadmium, Chloroform, Chromium, Copper, Ketones, Lead, Methylene Chloride, Nickel, Phenols, Silver, Tetrachloroethene, Toluene, Trichloroethene, Zinc	Soil -- solidification/fixation Groundwater -- bioremediation

Table 3-1 (continued)
Florida Resource Recovery and Management Act Sites in Florida at Which Marketing Opportunities Exist

LEAD	STATE NPL STATUS	REMEDIAL PHASE	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: SKIPPER'S III				**EPA ID:** FLD065920241		**SIZE:** 0.4 Acre
ADDRESS: 2409 N COCOA BLVD (US HWY 1), COCOA, FL 32922-7065				**STATE ID:** FL92		**TYPE:** Electroplating
Bureau of Waste Cleanup	Active	Contamination assessment work plan completed (01/94)	Soil, Groundwater	NA	Arsenic, Barium, Cadmium, Chromium, Cyanide, Lead, Mercury, Nickel, Selenium, Silver, Thallium	To be determined
SITE NAME: TOWN & COUNTRY DRY CLEANERS				**EPA ID:** NA		**SIZE:** NA
ADDRESS: 1925 PARK AVE, ORANGE PK, FL 32073-4914				**STATE ID:** FL55		**TYPE:** Industrial Solvent Site
Bureau of Waste Cleanup	Active	Percent remedial design for soil completed (02/93); Planned completion of remedial design for groundwater (3/95); soil removal and construction of groundwater treatment system planned to begin 8/95	Soil, Groundwater	1,000 cy	Petroleum Hydrocarbons, Tetrachloroethylene, Trichloroethylene	Soil -- excavation and off-site treatment Groundwater -- air stripping and granular activated carbon

Table 3-3

NPL Sites in Florida at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	OPERABLE UNIT (LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: AGRICO CHEMICAL CO					EPA ID: FLD980221857		ADDRESS: 118 E FAIRFIELD DR @ I-110, PENSACOLA, FL 32505	
NPL STATUS: Final					SIZE: 6 Acres		TYPE: Industrial Inorganic Chemicals	
02	RI/FS	(RP/FE)	12/30/96	Y	GW	NA	NA	NA
SITE NAME: ARCO PLATING CO					EPA ID: FLD004145140		ADDRESS: 3636 NW 46 STREET, MIAMI, FL 33142	
NPL STATUS: Final					SIZE: 2 Acres		TYPE: Manufacturing - Electroplating	
01	RI/FS	(F/FE/RP)	12/31/95	Y	GW; RC; SO	NA	NA	NA
SITE NAME: AMERICAN CREOSOTE WORKS (PENSACOLA PLT)					EPA ID: FLD008161994		ADDRESS: 701 S J ST, PENSACOLA, FL 32501	
NPL STATUS: Final					SIZE: 18 Acres		TYPE: Wood Preserving	
01	SOURCE CONTROL	(F)	9/30/96	Y	GW; LW; SD; SL; SO; ST	85 gal; 10,560 gal; 7,554,800 gal; 10 cy; 59 cy	VOC; CREOSOTES; PESTICIDES/ HERBICIDES	Off-Site Treatment; Drums/Other Containers Staged Only; Disposal of Residual; Biodegradation/Land Application; No Action; Monitoring; Final Removal to Off-Site Landfill; Solidification and Stabilization
02	GROUNDWATER	(EP/F)	3/31/96	Y	GW	NA	NA	NA
SITE NAME: ANODYNE, INC					EPA ID: FLD981014368		ADDRESS: 1270 NW 165 STREET, MIAMI, FL 33169	
NPL STATUS: Final					SIZE: 1 Acre		TYPE: General Warehousing and Storage	
01	GROUNDWATER/SOIL REMEDIATION	(RP/FE/F)	9/30/95	Y	GW; SO	NA	METALS; VOC; PCBS; PESTICIDES/ HERBICIDES	Natural Attenuation; Air Stripping; Disposal of Residual; Incineration with On-Site Disposal of Residuals; Leachate Treatment; Monitoring; Off-Site Treatment; Solidification and Stabilization

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.

[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

Al	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 3-3 (continued)
NPL Sites in Florida at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME (LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: B&B CHEMICAL CO., INC.				EPA ID: FLD004574190		ADDRESS: 875 W 20TH ST, HIALEAH, FL 33010	
NPL STATUS: Final				SIZE: 1 Acre		TYPE: Manufacturing Chemicals; Industrial Inorganic Chemicals; Industrial Organic Chemicals	
01	GROUNDWATER PUMP & TREAT (F/RP)	6/30/96	Y	GW; SO	NA	NA	NA
SITE NAME: CABOT/KOPPERS				EPA ID: FLD980709356		ADDRESS: MAIN ST & 23RD AVE, GAINESVILLE, FL 32601	
NPL STATUS: Final				SIZE: 38 Acres		TYPE: Nonresidential Building Operators; Wood Preserving	
02	(F)	9/30/96	N	NA	NA	NA	NA
SITE NAME: CHEVRON CHEMICAL CO. (ORTHO DIVISION)				EPA ID: FLD004064242		ADDRESS: 3100 ORANGE BLOSSOM TRAIL, ORLANDO, FL 32810	
NPL STATUS: Final				SIZE: 4.3 Acres		TYPE: NA	
01	(RP/FE)	3/30/97	N	NA	NA	NA	NA
SITE NAME: COLEMAN-EVANS WOOD PRESERVING CO				EPA ID: FLD991279894		ADDRESS: 101 CELERY ST, JACKSONVILLE, FL 32210	
NPL STATUS: Final				SIZE: 11 Acres		TYPE: Wood Preserving	
01	RD TECHNICAL ASSISTANCE (F/FE)	9/30/96	Y	DB; GW; MS; SD; SO; ST; SW	900,000 gal; 9,000 cy	VOC; METALS	Biodegradation and Bioremediation; Disposal of Residual; Leachate Treatment; Precipitation; Solidification and Stabilization; Incineration with On-Site Disposal of Residuals
SITE NAME: DAVIE LANDFILL				EPA ID: FLD980602288		ADDRESS: SW 142ND AVE, DAVIE, FL 33314	
NPL STATUS: Final				SIZE: 120 Acres		TYPE: Refuse Systems--Municipal Landfill & Co-disposal Landfill	
02	GW CONT./LANDFILL ASSESSMENT (RP/FE)	6/30/95	Y	AI; GW; SD; SW	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 3-3 (continued)
NPL Sites in Florida at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME (LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: FLORIDA STEEL CORP. NPL STATUS: Final				EPA ID: FLD050432251 SIZE: 150 Acres		ADDRESS: SR 710 INDIANTOWN, FL 33456 TYPE: Abandoned - No Use	
02	WETLANDS & GROUNDWATER (FE/RP)	12/30/95	Y	GW; SD	NA	NA	NA
SITE NAME: HARRIS CORP. (PALM BAY PLANT) NPL STATUS: Final				EPA ID: FLD000602334 SIZE: 500 Acres		ADDRESS: OFF PALM BAY BLVD PALM BAY, FL 32905 TYPE: Semiconductors and Related Devices; Electronic Components	
01	GROUNDWATER (PS/FE/RP)	5/30/95	Y	GW	50,000,000 gal	METALS; OTHER INORGANICS; VOC	Air Stripping; Disposal of Residual; Monitoring; Pump and Treatment
02	SOURCE CONTROL (PS/FE)	10/01/96	Y	GW	NA	NA	NA
SITE NAME: HELENA CHEMICAL CO. (TAMPA PLANT) NPL STATUS: Final				EPA ID: FLD053502696 SIZE: 8 Acres		ADDRESS: 2405 N 71TH ST TAMPA, FL 33675 TYPE: Industrial Inorganic Chemicals	
01	RI/FS SOILS AND GROUNDWATER (RP/FE)	9/28/97	N	GW; SO; SW	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 3-3 (continued)
NPL Sites in Florida at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	OPERABLE UNIT (LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: PEAK OIL CO./BAY DRUM CO.					EPA ID: FLD004091807		ADDRESS: S.R. 574, TAMPA, FL 33619	
NPL STATUS: Final					SIZE: 15 Acres		TYPE: Abandoned - No Use	
01		(F/FE/RP)	9/30/96	Y	DB; GW; SD; SO; SW	6,000 cy; 46,000 cy	METALS; PCBS; VOC	Surface Capping Only; Disposal of Residual; Monitoring; Solidification and Stabilization
02	BAY/PEAK GROUNDWATER	(RP/FE)	9/30/96	Y	GW	NA	METALS; PESTICIDES/ HERBICIDES; VOC	Air Stripping; Disposal of Residual; Leachate Treatment; Pump and Treat at POTW with Discharge; Off-Site Treatment; Steam Stripping; Monitoring
03	BAY SOURCE	(EP/F/RP)	9/30/96	Y	DB; GW; SD; SO; ST	27,000 cy	METALS; PCBS; PESTICIDES/ HERBICIDES; VOC	Decontamination; Off-Site Treatment; Monitoring; Surface Capping Only; Soil Cover; Disposal of Residual; Solidification and Stabilization
04	WETLANDS	(EP/F/RP)	6/29/96	Y	SD; SW	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

Al	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 3-3 (continued)
NPL Sites in Florida at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: PENSACOLA NAVAL AIR STATION				EPA ID: FL9170024567			ADDRESS: NAVAL AIR STATION BUILDING 3, PENSACOLA, FL 32508	
NPL STATUS: Final				SIZE: 5,900 Acres			TYPE: Misc.	
01	SANITARY LANDFILL	(FF)	6/30/97	N	GW; SD; SO; SW	NA	NA	NA
02	N CHEVALIER DISP/ SUPPLY DEPOT	(FF)	9/30/97	N	GW; SD; SO; SW	NA	NA	NA
03	WATERFRONT SEDIMENT AREA	(FF)	9/30/97	N	SD; SW	NA	NA	NA
04	PESTICIDE RINSATE DISP AREA	(FF)	12/31/97	N	GW; SO	NA	NA	NA
05	BLDG 649 & 755 SOIL N 648	(FF)	9/30/97	N	GW; SD; SO; SW	NA	NA	NA
06	SOIL S OF BLDG 3460/ NAVY YD	(FF)	3/30/97	N	GW; SO	NA	NA	NA
07	RADIUM DIAL SHOP SEWER	(FF)	6/30/97	N	GW; SO	NA	NA	NA
08	CRASH CREW TRAINING AREA	(FF)	9/30/97	N	GW; SD; SO; SW	NA	NA	NA
09	SUP DEP/OUTSIDE STOR (USN OU18)	(FF)	3/30/98	N	NA	NA	NA	NA
10	IWTP SLUDGE DRYING BEDS/WWTP	(FF)	6/30/97	N	GW; LW; SD; SL; SO; ST; SW	NA	NA	Backfilling; Removal: Off-Site Locations (Treatment/Final Disposal)
11	BUILDING 71	(FF)	9/30/97	N	GW; SO	NA	NA	NA
12	OAK GROVE CAMPGROUND AREA	(FF)	6/30/97	N	GW; SO; SW	639 cy	NA	Backfilling; Removal: Off-Site Locations (Treatment/Final Disposal)

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 3-3 (continued)
NPL Sites in Florida at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
13	REFUELER REPAIR SHOP	(FF)	3/31/98	N	GW; SO	NA	NA	NA
SITE NAME: PENSACOLA NAVAL AIR STATION **NPL STATUS:** Final					**EPA ID:** FL9170024567 **SIZE:** 5,900 Acres		**ADDRESS:** NAVAL AIR STATION BUILDING 3, PENSACOLA, FL 32508 **TYPE:** Misc.	
14	TRANSFORMER STORAGE YARD	(FF)	12/30/97	N	GW; SO	NA	NA	NA
15	BOYOU GRANDE AREA	(FF)	12/30/98	N	SD; SW	NA	NA	NA
16	NASP WETLANDS	(FF)	12/30/98	N	SD; SW	NA	NA	Removal: Off-Site Locations (Treatment/Final Disposal; Surface Drainage Control
17	PENSACOLA BAY AREA	(FF)	12/30/98	N	SD; SW	NA	NA	NA
SITE NAME: PETROLEUM PRODUCTS CORP **NPL STATUS:** Final					**EPA ID:** FLD980798698 **SIZE:** 2 Acres		**ADDRESS:** 14000 BLOCK PEMBROKE RD, PEMBROKE PINES, FL 33024 **TYPE:** General Warehousing and Storage; Nonresidential Building Operators	
02	SOURCE/SOIL & GW CONTAMINATION	(F/RP)	6/30/97	N	SO	NA	NA	NA
SITE NAME: PIPER AIRCRAFT/VERO BEACH WATER & SEWER **NPL STATUS:** Final					**EPA ID:** FLD004054284 **SIZE:** 8 Acres		**ADDRESS:** PIPER DR & AVIATION BLVD, VERO BEACH, FL 32960 **TYPE:** Aircraft, Manufacturing and Assembly	
01	NA	(EP/F)	9/30/97	Y	GW	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

Al	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 3-3 (continued)
NPL Sites in Florida at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	OPERABLE UNIT (LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: REEVES SOUTHEAST GALVANIZING CORP				EPA ID: FLD000824896			ADDRESS: 9510-20 E BROADWAY, TAMPA, FL 33619	
NPL STATUS: Final				SIZE: 10 Acres			TYPE: Coke Ovens	
01	REEVES SITE SOURCE	(RP/FE)	6/30/95	Y	GW; OT; SD; SO	6,000 cy	METALS; PCBS; VOC	Monitoring; Surface Capping Only; Disposal of Residual; Solidification and Stabilization
02	INTERIM ACTION	(RP/FE)	9/30/95	Y	GW; SD	NA	METALS	Natural Attenuation; Monitoring
03	AREA-WIDE WETLANDS	(EP/FE/RP)	9/30/95	Y	NA	NA	NA	NA
SITE NAME: SAPP BATTERY SALVAGE				EPA ID: FLD980602882			ADDRESS: COUNTY RD C-280, ALFORD, FL 32431	
NPL STATUS: Final				SIZE: 30 Acres			TYPE: Abandoned - No Use	
02	STEELE CITY BAY	(F)	NA	N	SD; SW	NA	NA	NA
SITE NAME: SHERWOOD MEDICAL INDUSTRIES				EPA ID: FLD043861392			ADDRESS: 2010 HWY 92 PO BOX 2078, DELAND, FL 32720	
NPL STATUS: Final				SIZE: 1 Acre			TYPE: Metal Sanitary Ware; Plastic Resins	
01	RD/RA - CONSENT DECREE	(RP/FE)	12/31/99	Y	AI; GW; SD; SO; SW	NA	VOC	Monitoring; Air Stripping; Disposal of Residual
03	OU3 - LAKE SEDIMENTS	(RP/FE)	6/30/96	N	SD	NA	NA	NA
SITE NAME: STAUFFER CHEMICAL CO (TARPON SPRINGS)				EPA ID: FLD010596013			ADDRESS: ANCLOTE ROAD, TARPON SPRINGS, FL 33589	
NPL STATUS: Final				SIZE: 160 Acres			TYPE: NA	
01	OPERABLE UNIT 1	(RP/FE)	9/30/97	N	GW; SO; SW	NA	METALS	NA
SITE NAME: TAYLOR ROAD LANDFILL				EPA ID: FLD980494959			ADDRESS: TAYLOR RD, TAMPA, FL 33619	
NPL STATUS: Final				SIZE: 42 Acres			TYPE: Abandoned - No Use; Refuse Systems-Co-disposal Landfill	
01	TECH. ASST. GRANTS	(RP/FE)	12/31/97	N	GW	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 3-3 (continued)
NPL Sites in Florida at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	OPERABLE UNIT (LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: USAF HOMESTEAD AFB **NPL STATUS:** Final				**EPA ID:** FL7570024037 **SIZE:** 2,916 Acres			**ADDRESS:** FLORIDA TURNPIKE EAST, HOMESTEAD AIR FORCE BASE, FL 330395300 **TYPE:** Other	
01	FIRE PROT TRAIN AREA#2(FPTA#2)	(FF)	9/30/96	N	GW; SO	NA	NA	NA
02	PEST DISP AREA	(FF)	3/30/97	N	SO	NA	NA	NA
04	MOTOR POOL OIL LEAK	(FF)	6/30/96	N	GW; SO	NA	NA	NA
SITE NAME: USAF HOMESTEAD AFB **NPL STATUS:** Final				**EPA ID:** FL7570024037 **SIZE:** 2,916 Acres			**ADDRESS:** FLORIDA TURNPIKE EAST, HOMESTEAD AIR FORCE BASE, FL 330395300 **TYPE:** Other	
05	ELECTROPLATE WD AREA	(FF)	3/30/97	N	GW; SO	NA	NA	NA
06	AIRCRAFT WASH RACK	(FF)	6/30/96	N	GW; SO	NA	NA	NA
07	ENTO. STORAGE AREA	(FF)	3/30/97	N	GW; SO	1,100 cy	NA	Backfilling; Excavation and Final Removal to Off-Site
08	FPTA #3	(FF)	3/30/97	N	GW; SO	2,317 cy	NA	Backfilling; Thermal Treatment with Off-Site Disposal
09	BOUNDARY CANAL	(FF)	6/30/97	N	SD; SW	NA	NA	NA
19	HUSH HOUSES	(FF)	3/31/97	N	NA	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

Al	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 3-3 (continued)
NPL Sites in Florida at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: USN AIR STATION CECIL FIELD NPL STATUS: Final				EPA ID: FL6170022474 SIZE: 20,099 Acres			ADDRESS: 103RD ST AND NORMANDY BLVD, JACKSONVILLE, FL 32215 TYPE: Metal Coating and Allied Services; Ordnance Production and Storage; Apartment Building Operators; Dwelling Operators, Except Apartments; Airports, Flying Fields, and Services	
01	LANDFILLS (SITES 1 & 2)	(FF)	12/31/96	N	GW; LW; RC; SO; ST; SW	1,600 cy	NA	Thermal Treatment with Off-Site Disposal
03	RUBBLE DISP AREA	(FF)	6/30/97	N	GW; LW; MS; RC; SO; ST	NA	NA	NA
04	FIRE FIGHTER TRAINING AREA	(FF)	3/31/97	N	GW; LW; MS; RC; SO	NA	NA	NA
05	ORDANCE DISPOSAL AREAS	(FF)	3/31/97	N	GW; RC; SO; ST	NA	NA	NA
06	PESTICIDE DISPOSAL AREA (11)	(FF)	12/30/95	Y	GW; RC; SO; ST	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.

[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

Al	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 3-3 (continued)
NPL Sites in Florida at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME (LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: USN NAS JACKSONVILLE **NPL STATUS:** Final				**EPA ID:** FL6170024412 **SIZE:** 3,350 Acres		**ADDRESS:** NAS BLDG 826, JACKSONVILLE, FL 32212 **TYPE:** Manufacturing - Electroplating; Metal Coating and Allied Services; Buildings (Residential and commercial); Other (Highways, bridges, heavy); Misc.; Medical Laboratories; Apartment Building Operators; Dwelling Operators, Except Apartments; Airports, Flying Fields, and Services	
01	CHILD STREET LF & PCB STORAGE (FF)	6/30/97	N	AI; DB; GW; LW; MS; RC; SD; SL; SO; ST; SW	NA	NA	NA
02	INDUST WASTE WATER TREAT PLT (FF)	9/30/98	N	AI; DB; GW; LW; MS; RC; SD; SL; SO; ST; SW	NA	NA	NA
03	INDUSTRIAL COMPLEX (FF)	3/30/97	N	AI; DB; GW; LW; MS; RC; SD; SL; SO; ST; SW	NA	NA	NA
SITE NAME: USN NAVAL AIR STA WHITING FIELD SITE 5 **NPL STATUS:** Final				**EPA ID:** FL2170023244 **SIZE:** 2,560 Acres		**ADDRESS:** NAS WHITING FIELD, MILTON, FL 32570 **TYPE:** NA	
01	OP UNIT 1 (FF)	9/30/99	N	GW; SO; SW	NA	DB; VOCs	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 3-3 (continued)
NPL Sites in Florida at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	OPERABLE UNIT (LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: WHITEHOUSE OIL PITS NPL STATUS: Final					EPA ID: FLD980602767 SIZE: 6 Acres		ADDRESS: ONE HALF MILE IN OF HWY 90, WHITEHOUSE, FL 32220 TYPE: Recycling Waste Oil	
01	PIT STUDY	(S/F/RP)	9/30/96	Y	GW; SD; SL; SO; SW	11,499,860 gal; 56,930 cy	NA	Disposal of Residual; Precipitation; Leachate Treatment; Monitoring; Solidification and Stabilization
SITE NAME: WINGATE ROAD MUNICIPAL INCINERATOR DUMP NPL STATUS: Final					EPA ID: FLD981021470 SIZE: 40 Acres		ADDRESS: 1300 N. W. 34TH AVE, FT. LAUDERDALE, FL 33311 TYPE: Refuse Systems--Incinerator, Municipal Landfill--Co-disposal Landfill	
01	LANDFILL	(RP/FE)	3/31/97	N	GW; MS; SD; SO; SW	NA	NA	NA
SITE NAME: YELLOW WATER ROAD DUMP NPL STATUS: Final					EPA ID: FLD980844179 SIZE: 15 Acres		ADDRESS: 1,190 YELLOW WATER ROAD, BALDWIN, FL 32234 TYPE: Abandoned - No Use	
01	RI/FS	(RP/FE)	9/30/95	Y	GW; SD; SO	3,560 cy	PCBS	Monitoring; Disposal of Residual; Solidification and Stabilization
02	GROUNDWATER	(RP/FE)	9/30/99	Y	GW; SO	NA	PCBS	Natural Attenuation; Monitoring
SITE NAME: ZELLWOOD GROUND WATER CONTAMINATION NPL STATUS: Final					EPA ID: FLD049985302 SIZE: 50 Acres		ADDRESS: 803 JONES AVE, ZELLWOOD, FL 32798 TYPE: Recycling Drums	
02	GROUNDWATER REMEDIATION	(F)	6/29/98	N	GW	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.

[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 3-4

RCRA Facilities Currently Undergoing Corrective Action in Florida[1]

SITE NAME MAILING ADDRESS	EPA ID	SWMU NO. AND UNIT NAME
EVEREADY BATTERY CO INC US 441 N OF HAGUE HAGUE, FL 32614	FLD043860451	ENTIRE FACILITY
USDOE PINELLAS PLANT 7887 BRYAN DAIRY RD, LARGO, FL 34649-9	FL6890090008	ENTIRE FACILITY
		OLD DRUM STOR SITE/BLDG 100 AREA CAMU1
		PISTOL RANGE - CAMU2
		NE SITE & E. POND - CAMU 3
		WEST FENCELINE AREA
		PRODUCTION COMPONENTS SCRAP AREA
		WASTEWATER NEUTRTALIZATION AREA
		BUILDING 200
USNAS BOCA CHICA NAVAL AIR STATION BLDG A827, KEY WEST, FL 33040-0	FL6170022952	ENTIRE FACILITY

1 Data as of May 1995 from the EPA RCRIS database. See Chapter 1 for a detailed description of data sources.

2 No data were available in RCRIS to indicate the media contaminated or the contaminants of concern.

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4.0 DEMAND FOR REMEDIATION OF SITES IN GEORGIA

This chapter provides a detailed discussion of the opportunities available in the State of Georgia for vendors of innovative technologies. The chapter is organized into seven sections. The first section describes the organization and authority of the State's program. The next section discusses opportunities at sites subject to Georgia's Hazardous Sites Response Act. That section is followed by a similar discussion of opportunities at Superfund National Priorities List (NPL) sites. The fourth and fifth sections discuss the markets at Resource Conservation and Recovery Act (RCRA) facilities subject to corrective action and at underground storage tanks (UST) sites managed by the State. Subsequent sections provide information on opportunities at Federal facilities and provide other useful information about working in the State.

Figures 4-1 and 4-2 present two maps of Georgia that indicate the locations of sites in the State that are on the NPL and the RCRA facilities in the State.[1] The 13 NPL sites in Georgia are found throughout the State, with several near the city of Macon. RCRA facilities also are found throughout the state, with two major concentrations of such sites in the southeast and northwest corners of the state.

Summary Information

There are a number of potential opportunities for vendors of innovative technologies in the State of Georgia. Of the 13 NPL sites in the state, 2 are federal facilities. Ten of the NPL sites have operable units at which remedial action has not yet begun. Listed on the Georgia Hazardous Site Inventory List are 336 sites, 12 of which are sites that have been assigned the Georgia Department of Natural Resources' (GADNR) highest priority for remediation. There are 98 RCRA facilities in Georgia, 5 of which are currently under a requirement to conduct a corrective measures study (CMS). According to the EPA Office of Underground Storage Tanks, 1,292 USTs in the state require remediation. Finally, there are 15 active Department of Defense (DoD) installations and formerly used defense sites (FUDS) located in Georgia. Of the installations' 226 sites, remediation currently is planned for 78 sites.

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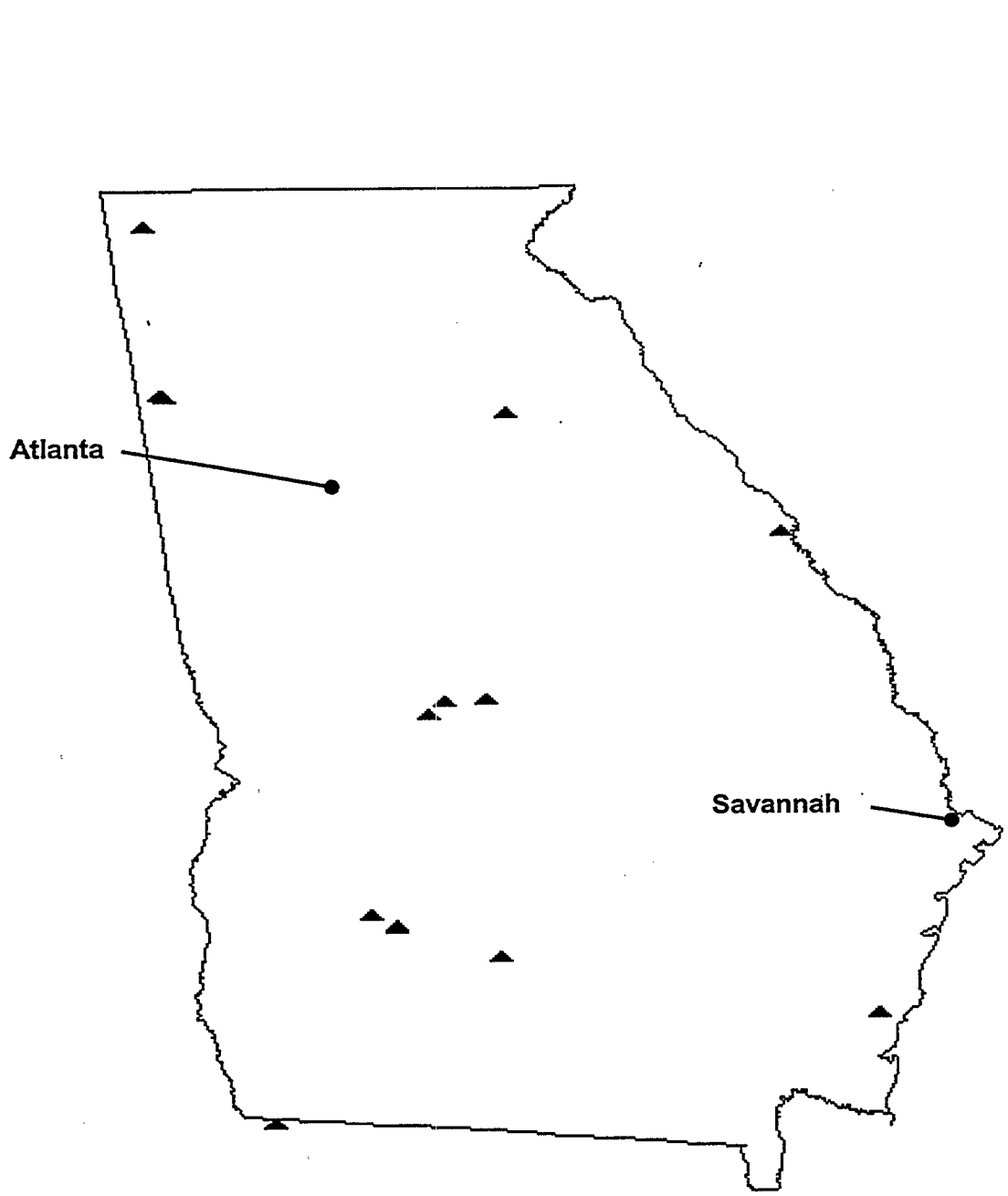
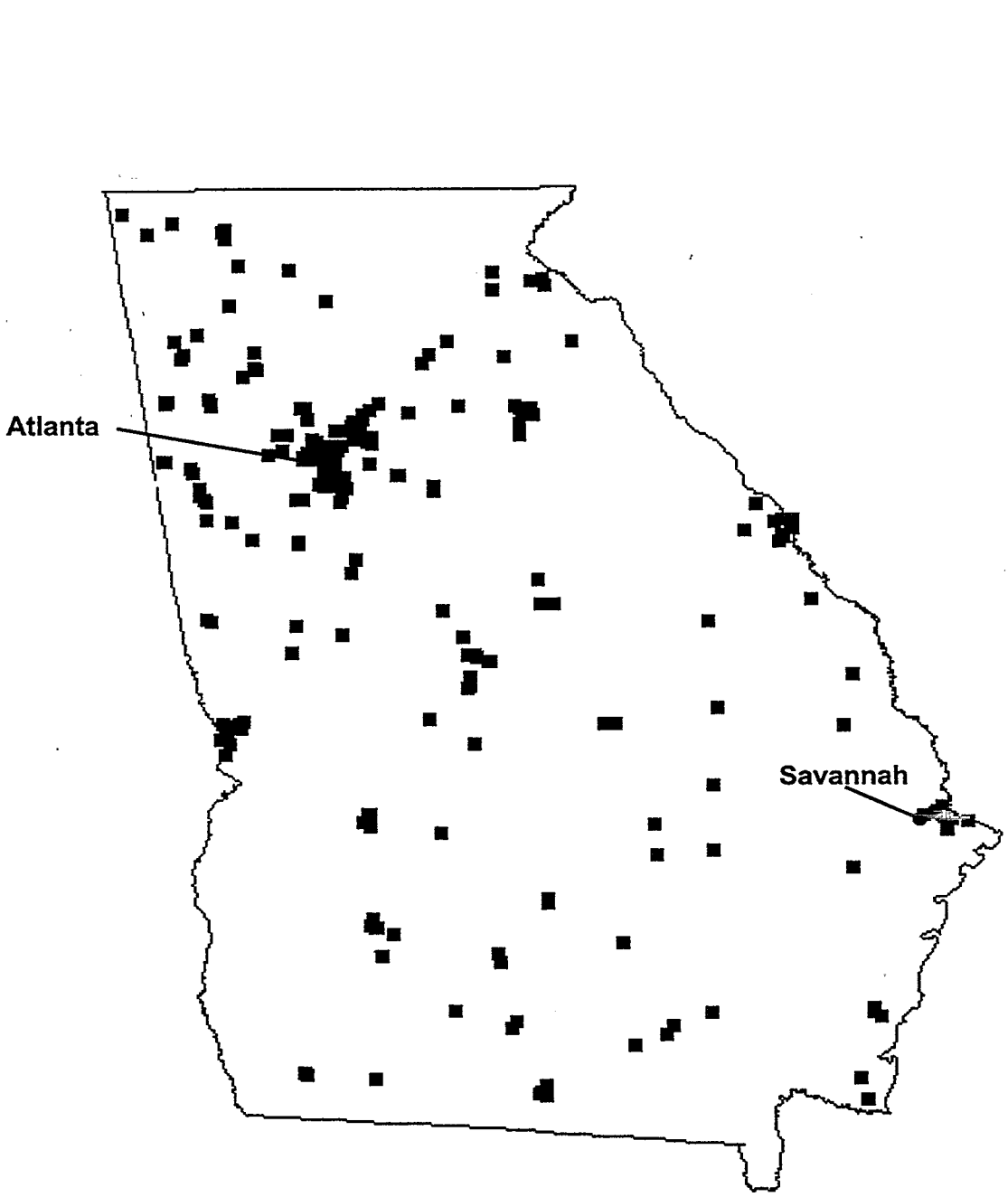
1 Figures 4-1 and 4-2 do not indicate the locations of *all* NPL sites and *all* RCRA facilities located in Georgia. LandView II™ contains information from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) on NPL sites and other sites. It also contains information from the Biennial Reporting System (BRS) on treatment, storage, and disposal facilities and major generators of hazardous waste.



NOT TO SCALE

Source: Modified from Landview II, based on data as of September 1994.

Figure 4-1
NPL Sites in Georgia



NOT TO SCALE

Source: Modified from Landview II, based on data as of September 1994.

Figure 4-2
RCRA Facilities in Georgia

4.1 The Georgia Hazardous Waste Management Program

The Georgia Department of Natural Resources (GADNR) is responsible for administering the state's regulations governing the environment. GADNR is composed of the Hazardous Waste Management Branch, Environmental Protection Division (EPD), and the Land Protection Branch. As of 1993, EPD, Hazardous Sites Response Program has nine full-time equivalent employees. The Hazardous Waste Management Branch oversees compliance and corrective action under RCRA as well as the State's Superfund activities.

The State's cleanup program regulated under the Hazardous Site Response Act (HSRA) is underway. Remediation also is being conducted under the State's delegated RCRA authorities. The HSRA of 1992 is part of the Official Code of Georgia, Section 12-8-6, as amended, which authorizes a cleanup fund, enforcement authorities, strict joint and several liability, punitive damages, provisions governing transfer of property, and a site priority list. The Georgia Board of Natural Resources has adopted regulations establishing cleanup standards which provide for use of published numeric standards or site-specific standards derived from using risk assessment. The Georgia Hazardous Site Inventory includes sites that EPD has identified as requiring remediation under HSRA.

Georgia does not have a voluntary cleanup program. The Hazardous Waste Trust Fund (HWTF), implemented under HSRA, allocates funds for all phases of remediations including emergency response, site investigations, removal actions, studies and design, remedial action, and operation and maintenance. The fund also provides matching funds for sites regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); promotes pollution prevention; and provides program administration. On February 29, 1996, HWTF had a balance of $21.95 million. The HWTF is funded by monies from fees on solid and hazardous waste management activities and from penalties and interest. If the balance of the fund equals or exceeds $25 million, the collection of fees is suspended until the unencumbered balance is less than or equal to $12.5 million.

The Land Protection Branch administers the activities of the State's UST Program. The Georgia Underground Storage Tank Management Rules, Chapter 391-3-15, were promulgated under the authority of the Georgia Underground Storage Tank Act of 1988. The State's UST program's responsibilities include investigating conditions related to UST management practices; determining violations of regulations governing USTs; conducting remediation activities; and enforcing tank registration requirements. The Georgia Underground Storage Tank Trust Fund, established on July 1, 1988, provides coverage to participating owners and operators for release response and corrective

action in the event of a release from a UST. Funds to support the trust fund are raised from import fees collected from UST owners and operators that import petroleum products into Georgia.

4.2 The Market at Sites Managed Under State Authorities

The State of Georgia published the first Hazardous Site Inventory (HSI) in July 1994. The HSI lists the sites located in Georgia that are known or suspected to have had a release of a regulated substance exceeding a reportable quantity as defined by rules adopted by EPD. There currently are 336 sites listed on the HSI. The inventory is compiled and published by the EPD at least once each year. Once the HSI is published, the clerk of the superior court of each county in Georgia receives one copy. The clerk is required to keep the most current copy of the HSI where the land records of the county are located in order to have ready access to the document.

Sites are listed on the inventory when a release of a regulated substance is determined to pose a potential threat to human health and the environment. The property owner of the site must determine whether notification to EPD is required under the State's Rules for Hazardous Site Response. If it is required, the property owner submits a notification and EPD determines whether a reportable release has occurred. Sites are placed on the inventory if the release has exceeded a reportable quantity.

EPD evaluated for HSI listings, all those sites listed on Region 4's version of the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database known as Wastelan, on March 2, 1994. The Wastelan report is a list of all sites in Georgia that the U.S. EPA is or will be investigating under the Federal Superfund program. If EPA determines that a site listed on Wastelan is a high priority for cleanup under the criteria of the Federal Superfund program, the site is placed on the NPL. Non-NPL sites will not be remediated by EPA under the Federal Superfund program unless they pose an imminent danger to human health and the environment, then in this case, EPA may clean up the site through an emergency action. Non-NPL sites that are not cleaned up by EPA then fall under Georgia's HSRA program.

Of the 904 sites listed on the March 2, 1994 EPA Wastelan report, EPA has placed only 13 on the NPL. Many contaminated sites in Georgia will not be remediated by the EPA under the Federal Superfund program because the sites do not pose a sufficient threat to human health and the environment to be considered a high priority for cleanup using Federal resources. However, sites listed on the HSI are required to meet the State's risk reduction standards for hazardous sites. The risk

reduction standards establish limits on levels of regulated substances that are protective of human health and the environment under specific conditions. Sites listed on the HSI are separated into four classes:

Number of Sites	Georgia Hazardous Site Inventory Classes
12	CLASS I: Sites at which known human exposure to regulated substances has occurred, that have sources of continuing releases, or that are causing serious environmental problems are designated on the HSI as Class I sites. EPD has assigned these sites highest priority for corrective action. Persons responsible for remediating these sites are required to put a notice in the deed to the property. If a responsible party fails to perform site remediation as required, EPD may use the state hazardous waste trust fund to clean up the site and later recover the cost of the cleanup from the responsible party. Class I sites retain that classification until they are cleaned up to meet applicable risk reduction standards.
241	CLASS II: For many sites listed on the HSI, further evaluation is necessary before EPD can decide whether remediation is needed. These sites are categorized as Class II sites. Persons responsible for Class II sites are given a period of time to investigate the site to determine the extent of contamination and to submit the results of the investigation to EPD. Persons responsible for Class II sites also are encouraged to clean up the sites within that time period. EPD then will either remove the site from the HSI or reclassify the site as Class I or III, depending on whether it meets the risk reduction standards. While classified as Class II, a site will not be designated as in need of remediation, so property owners will not be required to immediately place notices on deeds and other property records. If a responsible party at a Class II site fails to perform the required investigation, the priority of the site can be upgraded to Class I. The majority of sites on this edition of the HSI are Class II.
0	CLASS III: Sites designated on the HSI as Class III sites are those that cannot meet the residential risk reduction standards but do meet alternative risk reduction standards. These sites are designated as in need of corrective action; the property owners are required to file deed notices as for Class I sites. These sites may require continued monitoring to ensure that they continue to meet applicable standards and will require further remediation before they can be used for residential purposes. As of July 1996, no site had ever been designated as Class III.
83	CLASS IV: Class IV sites are sites at which remediation already is being conducted or has been completed under other Federal or state authority, including sites that are listed on the NPL and have a signed Record of Decision. They are designated as in need of corrective action and remain on the HSI; the property owner is required to file deed notices. If it is determined at any time that the corrective action at a Class IV site does not protect human health or the environment, the site may be redesignated from Class IV to Class I. If it can be certified that the site meets one of the other risk reduction standards, it can be reclassified and may be removed from the HSI.

GADNR provides site summaries that have general information about each site on the HSI, including:

- Name of the site
- Location of the site
- Identity of the property owner of the site
- Description of the regulated substances released at the site
- Possible threats to human health and the environment the release may pose at the site

The HSI also indicates the status of cleanup activities at the site, the priority of remediation assigned to the site, and whether EPD determines that the site requires corrective action.

Data provided by GADNR in Table 4-1 indicates that groundwater contamination is present at most Class I sites regulated under HSRA. Most sites also are contaminated by heavy metals. Table 4-1 presents the names of HSRA Class I sites at which investigation or remediation has not yet begun. These are the sites that EPA has assigned the highest priority for corrective action. The table also identifies the media contaminated and describes the contaminants present at the sites. Information included in the table was collected in July 1996. A complete list of HSI sites is available from GADNR (see section 4.7).

Table 4-1
Georgia Hazardous Waste Site Inventory Class I Sites at Which Remediation Activities Have Not Yet Begun

Site Name	Media	Contaminants
Alco Controls 400 East First Street Haslehurst, GA 31539 Jeff Davis County Owner: Emerson Electric Company 8000 West Florissant Avenue St. Louis, MO 63136	Groundwater	Trichloroethylene; dichloroethylene, N.O.S.; trans-, 1,2-dichloroethane; 1,1,2-trichloroethane; 1,2-dichloroethane, acetone, benzene, ethylbenzene, tetrachloroethylene, toluene, xylenes, methylene chloride
American Linen Supply Company 1081 Experiment Station Road Watkinsville, GA 30677 Oconee County Owner: American Linen Supply Company P.O. Box 9374 Minneapolis, MN 55440	Soil	Trichloroethylene, dichloroethylene, N.O.S.; chlorobenzene, chloroform, 1,1,-dichloroethene, vinyl chloride
Damascus Groundwater Contamination City of Damascus Damascus, GA 31741 Early County	Groundwater	Carbon tetrachloride

Table 4-1 (continued)
Georgia Hazardous Waste Site Inventory Class I Sites
at Which Remediation Activities Have Not Yet Begun

Site Name	Media	Contaminants
Douglas & Lomason 1016 State Hwy 16 Newnan, GA 30363 Coweta County Owner: Douglas & Lomason Company P.O. Box 20783 Atlanta, GA 30320	Groundwater	1,1-dichloroethane, benzene, 1,1,1-trichloroethane, methylene chloride, toluene, disulfide, chloroform, 1,2-dichloroethane, trans-1,2-dichloroethene, tetrachloroethane, vinyl chloride, carbon tetrachloride
Herdon Homes 511 John Street, NW Atlanta, GA 30318 Fulton County Owner: Housing Authority of the City of Atlanta 739 W. Peachtree Street, NE Atlanta, GA 30365	Soil	Lead (see HSI report for complete list of contaminants)
LCP Chemicals Ross Road Brunswick, GA 31520 Owner: Hamlin Group, Inc. 3100 Woodbridge Avenue, Suite 401 Edison, NJ 08837	Groundwater, soil, surface water	Mercury, PCBs, pentachlorophenol, chloroform, trichloroethylene, tetrachloroethylene, hexachloroethane, HCB, dieldrin, toluene, ethylbenzene, naphthalene, heavy metals
Martin Marietta Aggregates G.A. Highway 80 Thomson, GA 30824 Warren County Owner: Martin Marrietta Aggregates P.O. Box 30013 Raliegh, NC 27622	Groundwater	Trichloroethylene, toluene, dichloroethylene, N.O.S.
Monroe Auto Equipment Company 200 McIntyre Drive Hartwell, GA 30643 Hart County Owner: Monroe Auto Equipment Company 1 International Drive Monroe, MI 48161	Groundwater	Vinyl chloride, trichlorethylene, 1,1-dichloroethane, 1,1,1-trichlorethane
Reliant Corporation U.S. Highway 19/129 Blairsville, GA 30512 Union County Owner: Reliant Corporation P.O. Drawer 970 Marietta, GA 30061	Groundwater	1,1-Dichloroethylene, 1,1-dichloroethene, 1,1,1-trichloroethane, trichloroethylene
Rheem Manufacturing Company 139 Brampton Road Savannah, GA 31408 Chatham County Owner: Dale Hendrix, Trustee P.O. Box 22967 Old Dean Forest Road Savannah, GA 31403	Soil, groundwater	Lead (soil), vinyl chloride (groundwater) (see HSI report for a complete list of contaminants)

Table 4-1 (continued)
Georgia Hazardous Waste Site Inventory Class I Sites at Which Remediation Activities Have Not Yet Begun

Site Name	Media	Contaminants
Tift Site South Martin Drive East Point, GA 30344 Fulton County Owner: Thomas W. Tift 3401 Norman Perry Drive East Point, GA 30344	Soil	Lead, silver, acetophenone, zinc, copper, nickel

Source: Georgia Department of Natural Resources, Environmental Protection Division, Hazardous Site Inventory, July 1994

GW = groundwater
SO = soil

4.3 The Market at Abandoned Sites Managed Under the Federal Superfund Program

As of May 1995, the EPA had placed 13 sites located in Georgia on the NPL. Currently, no sites in Georgia are proposed for placement on the NPL. Table 4-2 presents summary information from the CERCLIS database on the number of sites and operable units (OU) in Georgia that are listed on the NPL in Georgia. The table provides information on the phase of remediation activity by sites with pre-remedial activities planned or ongoing and sites that have begun remedial activity.

Table 4-2
Number of Sites and Operable Units at NPL Sites in Georgia

Phase of Activity[a]	Number of Sites[b]	Number of Operable Units
Pre-remedial	1	1
Remedial	12	27

Source: Data as of May 1995 from EPA CERCLIS database; see Chapter 1 for a detailed description of the data sources.

[a] Sites with pre-remedial activities are sites where remedial design and construction have not yet begun, although the remedy may have been chosen. These sites, especially the pre-remedial sites still in the investigation phase, present long-term opportunities for vendors. Sites with remedial activities are sites where remedial design has begun and construction might not have begun. Where technologies have been selected but no vendor has been chosen, a site may present a short-term business opportunity.

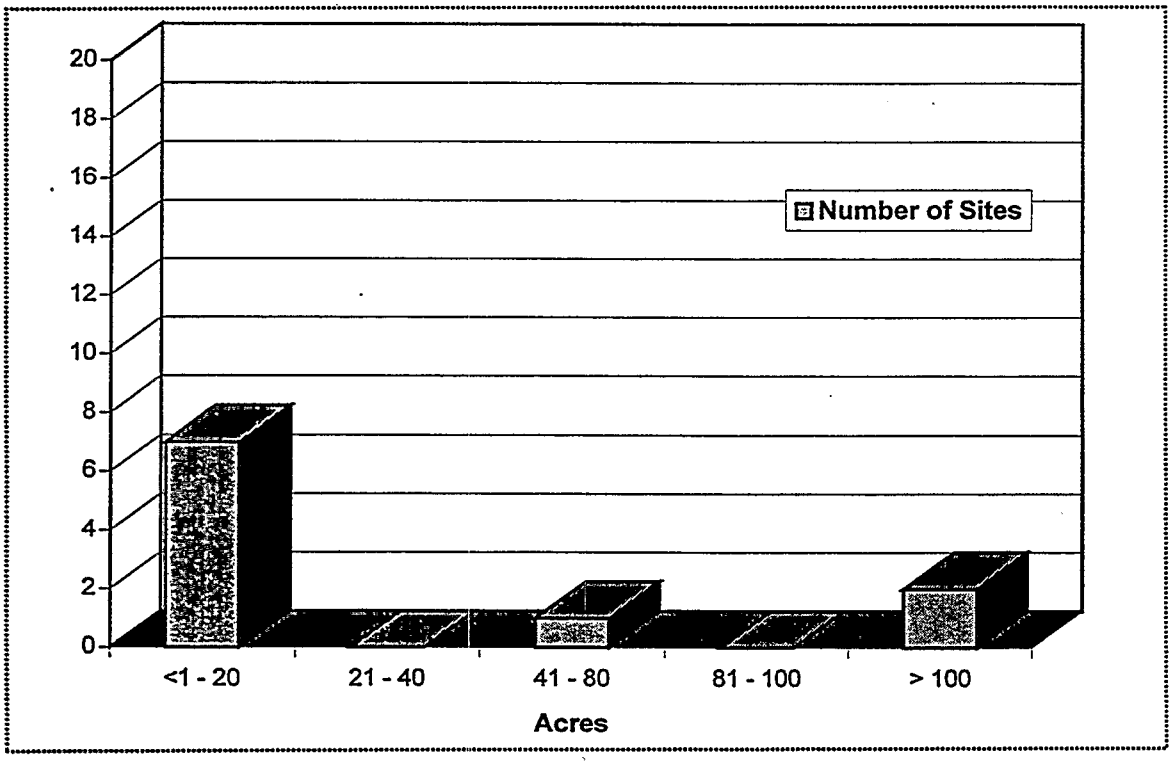
[b] A site may have more than one operable unit in each phase, so operable units may be counted more than once.

Table 4-3, at the end of the chapter, provides information from the CERCLIS database about 10 sites and 17 OUs at which remediation activities have not been initiated. The sites and OUs for which the

technologies have been chosen but the vendors for the technologies have not are of the greatest interest to potential vendors. Of the 10 sites, 2 are military installations. Marketing opportunities for DoD sites are discussed more fully in the section on opportunities at Federal facilities.

A review of the NPL site summaries indicates that contamination by volatile organic compounds (VOC) in both the soil and groundwater exists at the majority of the 10 NPL sites. Contamination of the soil and groundwater by metals also exists at four of the sites. Figure 4-3 presents data on the size distribution of NPL sites located in Georgia. The sizes of the contaminated areas range from less than 1 acre to more than 32,000 acres. Seven of the NPL sites in the State range from 1 to 20 acres in size. Technologies selected for use at the 10 NPL sites include biodegradation and soil vapor extraction. Limited data were available on the volumes of contaminated media present at the various sites.

Figure 4-3
NPL Site Size Distribution for the State of Georgia



4.4 The Market at RCRA Corrective Action Sites

Georgia is authorized by EPA to issue RCRA Part B permits for hazardous waste facilities and is authorized to administer the corrective action program.

Data from the Resource Conservation and Recovery Information System (RCRIS) database indicate that 98 facilities regulated under RCRA exist in the State. Five of the RCRA facilities currently require corrective action. The definition of corrective action used here is that a facility has been required to perform a CMS. The number of facilities with CMS imposed is not a direct subset of RCRA treatment, storage, and disposal (TSD) facilities, instead it is a subset of TSD facilities and hazardous waste generators. While TSD facilities are statutorily required to address corrective action, EPA has discretionary authority to impose corrective action on generators. **Table 4-4, at the end of the chapter,** presents those facilities and identifies nine solid waste management units (SWMU). For five facilities, the entire facility is listed as subject to requirements for corrective action. It is likely that, at those facilities, several different problems have been identified that indicate a need for corrective action for the entire facility. In addition, 41 facilities are under a requirement to conduct a RCRA facility investigation (RFI). The number of facilities with an RFI imposed is not a direct subset of RCRA TSD facilities, instead it is a subset of TSD facilities and hazardous waste generators. While TSD facilities are statutorily required to address corrective action, EPA has discretionary authority to impose corrective action on generators. As discussed in Section 1.2, these facilities may also provided either a long-term opportunity or near-term opportunity where no CMS is necessary to begin corrective action or corrective activity begins in accordance with the stabilization initiative.

Data were not available in RCRIS to identify contaminants of concern or the media contaminated at the facilities regulated under RCRA in the State.

4.5 The Market at UST Sites Managed by the State

The Land Protection Branch of GADNR administers the State's UST program. Georgia has more active tanks than any other state in Region 4. Active tanks are defined as tanks still in service.
Table 1-5 presents data on the number of USTs in Region 4. Table 4-5 below presents specific information on USTs located in Georgia.

Table 4-5
Underground Storage Tank Corrective Action Measures in Georgia as of First Half of FY96

Active Tanks	Tanks Closed	Confirmed Releases	Cleanups Initiated	Cleanups Completed	Cleanups Not Yet Initiated
49,005	15,677	6,147	4,855	2,469	1,292

Source: EPA Office of Underground Storage Tanks Semi-Annual Activity Report for First Half of Fiscal Year 1996 (ending March 31, 1996)

As of March 31, 1996, the EPA Office of Underground Storage Tanks (OUST) has identified 1,292 leaking tanks in Georgia at which cleanup has yet to be initiated. This number represents the difference between the two data elements "confirmed releases" and "cleanups initiated." Cleanup at USTs with soil contamination usually is completed within 6 months to 2 years after the site has been identified. Cleanup at USTs with groundwater contamination is usually completed within 2 to 5 years after the site has been identified. Therefore, the number of USTs identified as marketing opportunities for vendors of innovative technologies will change rapidly.

In national studies of USTs performed by EPS in 1991 and 1992, it was found that the majority, or about 87 percent are used to store gasoline or diesel fuel, kerosene, or heating oil. Of the remaining USTs, 11 percent store various materials and wastes such as used oil (4 percent), hazardous material (2 percent), and other material (5 percent), or are empty (2 percent). The majority of the contamination problems are related to the contamination of soils and groundwater with petroleum products that contain VOCs and SVOCs.

4.6 The Market at Federal Facility Sites in Georgia

Fifteen operational or closing DoD installations and FUDS are located in Georgia. DOE does not operate any facilities in the State. There are 226 active sites at the 15 DoD installations of which 78 sites have future remedial action planned. Active sites are those at which some form of remediation activity is planned or underway. The total number of sites to be remediated may exceed this figure because DoD does not plan remediation at a site until at least the remedial investigation and feasibility study (RI/FS) have been completed.

The *Defense Environmental Restoration Program Annual Report to Congress for 1994* indicates that a total of $429 million is estimated to be needed through the year 2031 for all phases of cleanup at the 15 installations. The two facilities that have the largest allocations of funds are Robins Air Force Base ($71,938,000) and Albany Marine Corps Logistics Base ($64,515,000). Six sites at Robins Air Force Base have cleanup planned and Albany Marine Corps Logistics Base has 24 sites at which cleanup is planned. Many of the sites identified at the 15 installations either are undergoing or are scheduled to undergo an RI/FS and therefore are at a relatively early stage of the remediation process.

The majority of the contaminants at the sites at which remediation is planned fall into one of three categories: petroleum, oil, and lubricants (POL), VOCs, and metals. Those contaminants are found in the soil at all the sites and in the groundwater in a large percentage of the sites. Data on volumes of soil and groundwater to be treated are not available. Table 4-6 provides information on the individual installations and sites subject to remediation at those installations. Remediation already may be underway at other sites; such sites have not included in the total because it is unlikely that they will afford opportunity for vendors of innovative technologies. Two DoD installations in Georgia, Albany Marine Corps Logistics Base and Robins Air Force Base, are on the NPL. At some of the sites, there also may be areas subject to RCRA corrective action requirements.

Table 4-6
DoD Installations and Sites in Georgia

Name and Outyear Funding ($000)	Federal Facility Identification Number	Codes[1]	Number of Sites at Which Cleanup is Planned
Air Force Plant No. 6 Outyear Funding FY95-2012 $28,251	GA457172460600	A	12
Albany Marine Corps Logistics Base Albany, GA 31704 Outyear Funding FY95-2005 $64,515	GA417302369400	A,N	24
Dobbins Air Force Base Outyear Funding FY95-2006 $22,000	GA457122458700	A	2
Fort Benning Outyear Funding FY95-2005 $40,856	GA421002101800	A	14

Table 4-6 (continued)
DoD Installations and Sites in Georgia

Name and Outyear Funding ($000)	Federal Facility Identification Number	Codes[1]	Number of Sites at Which Cleanup is Planned
Fort Gillem Outyear Funding FY95-2031 $38,395	GA421002004600	A	3
Fort Gordon Outyear Funding FY95-2002 $5,640	GA421002036800	A	3
Fort McPherson Outyear Funding FY95-2005 $7,869	GA421002056500	A	1
Fort Stewart Outyear Funding FY95-2015 $31,702	GA421002087200	A	1
Hunter Army Airfield Outyear Funding FY95-2005 $12,209	GA421002273300	A	2
Moody Air Force Base Outyear Funding FY95-2010 $37,218	GA457212410600	A	2
Naval Submarine Base Kings Bay Outyear Funding FY95-2007 $33,930	GA417009000100	A	2
Robins Air Force Base Outyear Funding FY95-2011 $71,938	GA457172433000	A,N	6
Savannah International Airport Outyear Funding FY95-2002 $18,950	GA457282608100	A	2
Cp Toccoa Military Reservation Outyear Funding FY95-2007 $2,539	GA49799F47300	F	2
Turner Air Force Base Outyear Funding FY95-2008 $13,102	GA49799F474900	F	2

Source: *Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994*

[1] Codes:
A = The installation is currently operational or on the BRAC list, and cleanup is covered by DERA or BRAC funds
F = The installation is no longer active and is managed by the FUDS Branch
N = The site is listed on the final National Priorities List

4.7 Further Market Information for Georgia

A vendor that wishes to obtain information about sites in Georgia that are managed by EPA may write to:

U.S. Environmental Protection Agency
Region 4
345 Courtland Street, NE
Atlanta, GA 30365

For information on RCRA facilities, the envelope should be marked to the attention of the Freedom of Information Act Officer, Office of RCRA and Federal Facilities. For information on CERCLA facilities in Georgia, the envelope should be marked to the attention of the Freedom of Information Act Officer, South Superfund Remedial Branch. The requestor will be billed for the information, according to the volume of information provided. For more information or USTs handled by EPA, vendors may contact the EPA Region 4 UST program manager:

John Mason
U.S. EPA Region 4
345 Courtland Street, NE
Mail Code 4WM-GWP-15
Atlanta, GA 30365

A list of leaking USTs is available from GADNR's Land Protection Division. The list and additional information can be obtained from:

Georgia Department of Natural Resources
Environmental Protection Division
Land Protection Branch
4244 International Parkway, Suite 104
Atlanta, GA 30354
(404) 362-2687

A vendor can obtain an updated list or more information about a site listed on the HSI by contacting:

Georgia Department of Natural Resources
Environmental Protection Division
Hazardous Sites Response Program
205 Butler Street, S.E., Suite 1462
Atlanta, GA 30354
(404) 657-8600

Cost for updated lists is $14.25 for hard copy; $1.55 for diskette copy.

For information about DOE sites or any of DOE's technology development assistance programs, vendors may contact:

DOE's Center for Environmental Management Information
470 L'Enfant Plaza East
Suite 7112
Washington, DC 20024
(800) 736-3282

The U.S. Department of Defense (DoD) does not have a single point of contact that handles all of DoD's environmental restoration initiatives, site-level information, and technology programs. The Defense Environmental Restoration Program Annual Report to Congress for FY 1995 contains detailed information on environmental restoration accomplishments and schedules at DoD installations world-wide. This report is available on the Internet at the DoD Environmental Restoration home page at:

http://www.dtic.mil/envirodod/

The home page also provides links to other internet sites that pertain to DoD environmental restoration activities.

Table 4-3

NPL Sites in Georgia at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: CEDARTOWN INDUSTRIES, INC **NPL STATUS:** Final					**EPA ID:** GAD095840674 **SIZE:** 7 Acres		**ADDRESS:** S FURNACE ST, CEDARTOWN, GA 30125 **TYPE:** Abandoned - No Use	
01	NA	(RP/FE)	9/30/95	Y	AI; DB; GW; SO	19,280 cy; 500,000 gal	METALS; OTHER INORGANICS; VOC	Monitoring; Off-Site Treatment; Surface Capping Only; Disposal of Residual; Solidification and Stabilization; Natural Attenuation
SITE NAME: DIAMOND SHAMROCK CORP. LANDFILL **NPL STATUS:** Final					**EPA ID:** GAD990741092 **SIZE:** 1 Acre		**ADDRESS:** W. GIRARD AVENUE, CEDARTOWN, GA 30125 **TYPE:** Abandoned - No Use	
01	NA	(RP/FE)	9/30/95	Y	GW; SO	NA	NA	NA
SITE NAME: FIRESTONE TIRE & RUBBER CO(ALBANY PLANT) **NPL STATUS:** Final					**EPA ID:** GAD990855074 **SIZE:** 329 Acres		**ADDRESS:** 3300 SYLVESTER RD, ALBANY, GA 31701 **TYPE:** Tires and Inner Tubes	
01	NA	(RP/FE)	6/30/95	Y	GW; SO	NA	METALS; PCBS; VOC	Air Stripping; Pump and Treat at POTW with Discharge; Off-Site Treatment; Steam Stripping; Monitoring
SITE NAME: HERCULES 009 LANDFILL **NPL STATUS:** Final					**EPA ID:** GAD980556906 **SIZE:** 7 Acres		**ADDRESS:** BENEDICT RD & ROUTE 25, BRUNSWICK, GA 31521 **TYPE:** Refuse Systems-Industrial Landfill	
01	SOILS/SEDIMENTS	(RP/FE)	9/30/95	Y	AI; GW; SD; SL; SO; SW	4,848,000 gal; 13,500 cy; 18,000 cy	METALS; PESTICIDES/ HERBICIDES; VOC	Monitoring; Natural Attenuation; Disposal of Residual; Solidification and Stabilization

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.

[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 4-3 (continued)
NPL Sites in Georgia at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: MARZONE INC./CHEVRON CHEMICAL CO.				EPA ID: GAD991275686			ADDRESS: GOLDEN ROAD, TIFTON, GA 31794	
NPL STATUS: Final				SIZE: 3 Acres			TYPE: Abandoned - No Use	
01	SOURCE AREA	(RP/FE/EP)	9/30/96	Y	GW; SO; SW	NA	NA	NA
02	INTERIM ACTION	(F/FE/RP)	10/ 3/99	N	SD; SO; SW	NA	NA	NA
SITE NAME: MATHIS BROTHERS LANDFILL				EPA ID: GAD980838619			ADDRESS: S MARBLE TOP RD, LAFAYETTE, GA 30728	
NPL STATUS: Final				SIZE: 5 Acres			TYPE: Abandoned - No Use; Refuse Systems - Co-disposal Landfill	
01	RI-FS	(RP/FE)	3/30/97	Y	DB; GW; SO; SW	4,000 cy; 1,500,000 gal; 97,700 cy	METALS; PESTICIDES/ HERBICIDES; VOC; ACIDS; OTHER ORGANICS; PLASTICS; RADIOACTIVE MATERIALS	Surface Capping Only; Disposal of Residual; Incineration with On-Site Disposal of Residual; Off-Site Treatment; Monitoring; Biodegradation and Bioremediation

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.

[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
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DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 4-3 (continued)
NPL Sites in Georgia at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	OPERABLE UNIT (LEAD)	RA PLANNED START DATE[2]	RI/FS COMPLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: T.H. AGRICULTURE & NUTRITION (ALBANY)				**EPA ID:** GAD042101261			**ADDRESS:** 1401 SCHLEY AVE, ALBANY, GA 31707	
NPL STATUS: Final				**SIZE:** 7 Acres			**TYPE:** Nonresidential Building Operators	
01	NA	(RP/FE)	12/31/95	Y	AI; GW	NA	OTHER INORGANICS; PESTICIDES/ HERBICIDES; VOC	Monitoring; Disposal of Residual; Leachate Treatment; Pump and Treat at POTW with Discharge; Off-Site Treatment; Thermal Treatment with On-Site Placement
02	EASTERN PARCEL/JONES/GOLDKIST	(RP/FE)	12/31/97	N	SD; SO; SW	NA	NA	NA
SITE NAME: USAF ROBINS AFB (LNDFL/SLUDGE LA)				**EPA ID:** GA1570024330			**ADDRESS:** ROBINS AFB, WARNER ROBINS, GA 31098	
NPL STATUS: Final				**SIZE:** 67 Acres			**TYPE:** Manufacturing - Electroplating; Metal Coating and Allied Services; Buildings (Residential and commercial); Other (Highways, bridges, heavy); Ordnance Production and Storage; Medical Laboratories; Apartment Building Operators; Dwelling Operators, Except Apartments; Airports, Flying Fields, and Services; Refuse Systems--Industrial Landfill and Co-disposal Landfill	
02	WETLANDS	(FF)	6/30/95	Y	GW; SD; SW	NA	NA	NA
03	ZONE 1 GROUNDWATER	(FF)	3/30/97	N	GW	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
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DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 4-3 (continued)
NPL Sites in Georgia at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: USMC LOGISTICS BASE 555				EPA ID: GA7170023694		ADDRESS: FLEMING ROAD ALBANY, GA 31704		
NPL STATUS: Final				SIZE: 32,000 Acres		TYPE: Refuse Systems--Industrial Landfill; Miscellaneous Metalwork; Refuse Systems--Waste Processing Facility; Misc: National Security; Sanitary Services--Wastewater Treatment Plant		
01	PSC 1,2,3,26	(FF)	9/30/97	N	GW; SO	NA	NA	NA
02	PSC 11	(FF)	9/30/97	N	GW; SO	NA	NA	NA
04	PSC 6,10,12,13,22	(FF)	3/30/97	N	GW; SO	NA	NA	NA
05	PSC 8 & 14	(FF)	3/30/97	N	GW; SO	NA	NA	NA
SITE NAME: WOOLFOLK CHEMICAL WORKS, INC				EPA ID: GAD003269578		ADDRESS: E MAIN ST P O BOX 938, FORT VALLEY, GA 31030		
NPL STATUS: Final				SIZE: 18 Acres		TYPE: Agricultural Chemicals (Organic & Inorganic)		
01	RI/FS	(RP/FE)	3/30/96	Y	GW	NA	NA	NA
02	RI/FS	(RP/FE)	12/30/97	N	MS; SD; SO; SW	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.

[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

Al	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 4-4

RCRA Facilities Currently Undergoing Corrective Action in Georgia[1]

SITE NAME MAILING ADDRESS	EPA ID	SWMU NO. AND UNIT NAME
ALTERNATE ENERGY RESOURCES INC 2730 WALDEN DR, AUGUSTA, GA 30904-4	GAD033582461	ENTIRE FACILTIY SPILL AREAS AT STORAGE PAD CLOSED IMPOUNDMENT - OFFSITE PLUME
BLACKMAN-UHLER CHEM DIV AUGUSTA PLT, GLASS FACTORY AVENUE AUGUSTA, GA 30903-3	GAD042125146	ENTIRE FACILITY
CSX TRANSPORTATION HAINES AVENUE EXTENSION WAYCROSS, GA 31501	GAD991275900	ACID LIME SLUDGE AREA ALUM SLUDGE BASIN SEGMENT A OF WAYCROSS CANAL OLD DRUM STORAGE AREA SHOP AREA
DOW CHEMICAL CO 1468 PROSSER DR SE, DALTON, GA 30720-0	GAD045929643	MONITORING WELL 2A AREA OFF-SITE AREA ENTIRE FACILITY

[1] Data as of May 1995 from the EPA RCRIS database. See Chapter 1 for a detailed description of data sources.

Table 4-4 (continued)
RCRA Facilities Currently Undergoing Corrective Action in Georgia[1]

SITE NAME MAILING ADDRESS	EPA ID	SWMU NO. AND UNIT NAME
ENSCO ENVIRONMENTAL SERVICES 1015 SOUTH HARRIS STREET DALTON, GA 30720	GAD000222083	STREAM AND DITCH ENTIRE SITE
ENTECH RECOVERY INC (CP CHEMICAL INC) 4080 INDUSTRY RD P O BOX 25, POWDER SPRINGS, GA 30073	GAD981027055	ENTIRE FACILITY SI CLOSED AS LF
GULFSTREAM AMERICAN CORP TRAVIS FIELD, SAVANNAH, GA 31402-22	GAD061022216	CLOSED LANDFILL LANDFILL ENTIRE FACILITY
USMC LOGISTICS BASE 555 FLEMING ROAD, ALBANY, GA 31704-4112	GA7170023694	PSC 23 & PSC 24 [FORMER STORAGE AREAS] DOMESTIC WASTEWATER TREATMENT PLANT DWTP REGULATED UNIT - IWTP ENTIRE FACILITY OPERABLE UNIT 3

[1] Data as of May 1995 from the EPA RCRIS database. See Chapter 1 for a detailed description of data sources.

5.0 DEMAND FOR REMEDIATION OF SITES IN KENTUCKY

This chapter provides a detailed discussion of the opportunities available in the State of Kentucky for vendors of innovative technologies. The chapter is organized in seven sections. The first section describes the organization and authority of the State's program. The next section discusses opportunities at sites managed by Kentucky's hazardous waste management program. That section is followed by a similar discussion of opportunities at Superfund National Priorities List (NPL) sites. The fourth and fifth sections discuss the markets at Resource Conservation and Recovery Act (RCRA) facilities subject to corrective action and at underground storage tank (UST) sites managed by the State. Subsequent sections provide information on opportunities at Federal facilities and provide information about working in the State.

Figures 5-1 and 5-2 present two maps of Kentucky that indicate the locations of sites in the State that are on the NPL, and the RCRA facilities in the State[1]. The 20 NPL sites in Kentucky are concentrated in the western part of the State. RCRA facilities are distributed relatively evenly across the State, with two areas of higher density located near its borders with Indiana and Ohio.

Summary Information

There are a number of potential opportunities for vendors of innovative technologies in the State of Kentucky. Of the 20 NPL sites in the state, 10 sites have 16 operable units (OU) at which remedial action has not yet begun. One of the sites is the Paducah Gaseous Diffusion Plant operated by the Department of Energy. Currently, there is a very small market for facilities subject to corrective action under RCRA; currently only one facility is under a requirement to conduct a corrective measures study (CMS). There are 63 USTs in need of remediation. There are 6 military installations or formerly used defense sites (FUDS) in Kentucky. Of the installations' 146 active sites, remediation currently is planned for 67 sites.

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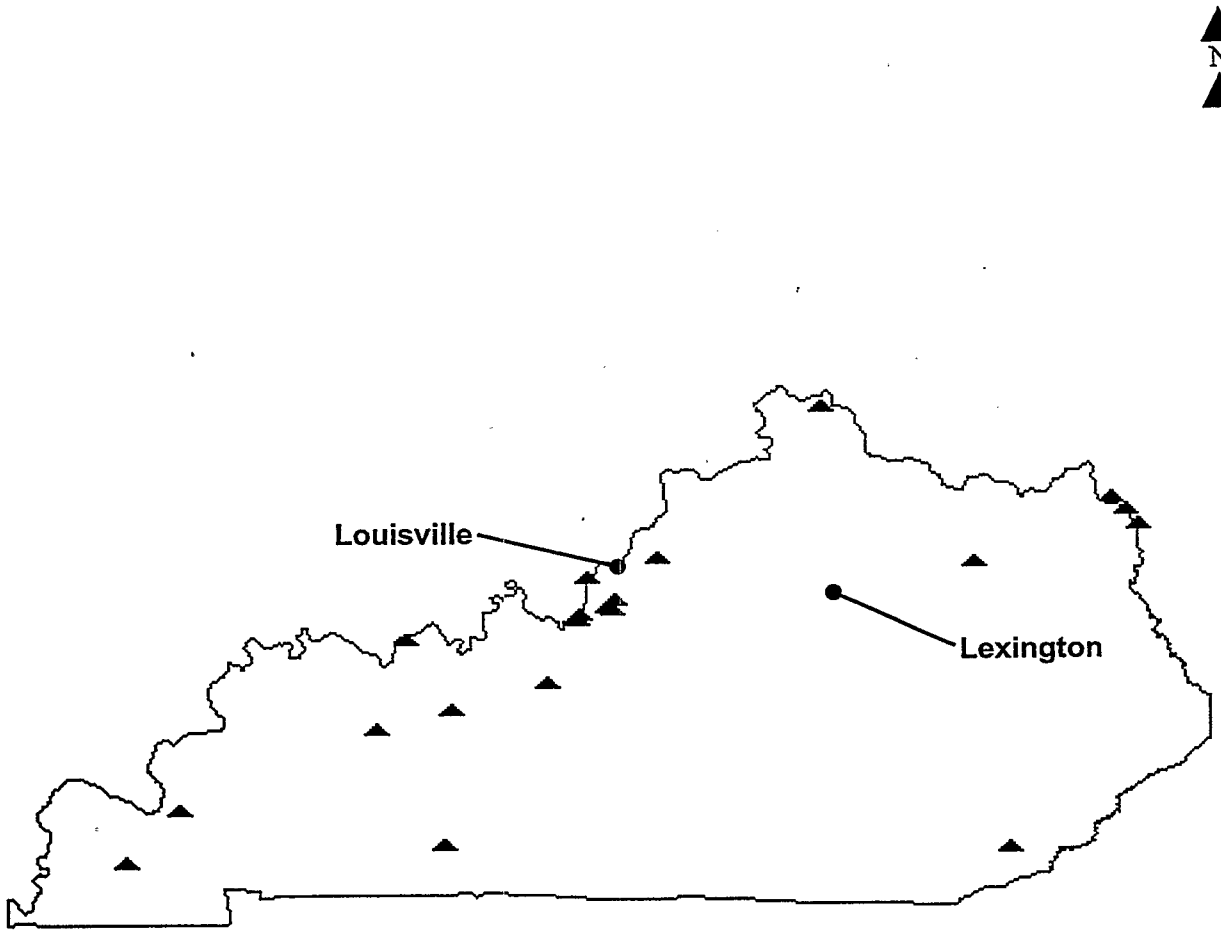
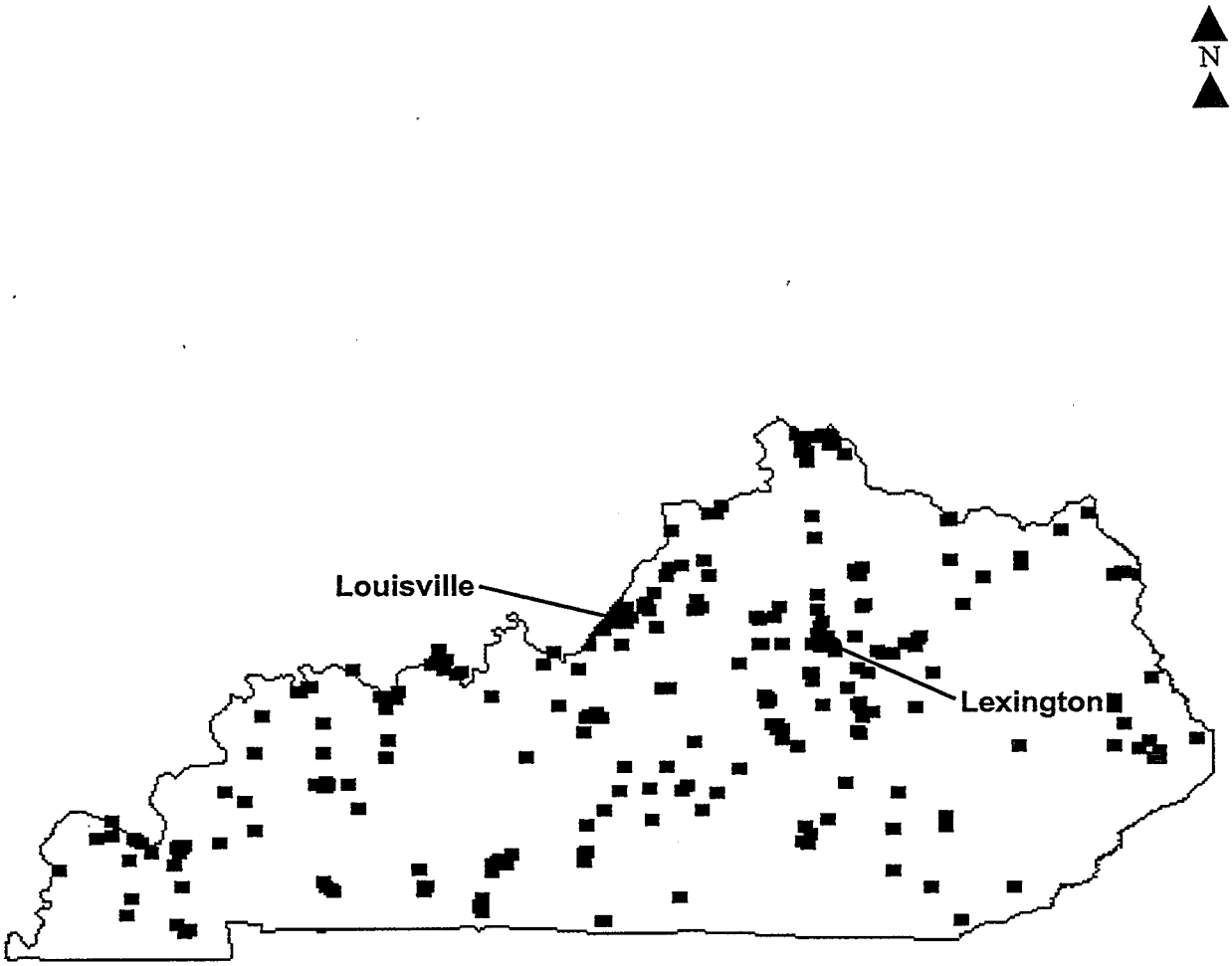
1 Figures 5-1 and 5-2 do not indicate the locations of *all* NPL sites or *all* RCRA facilities located in Kentucky. LandView II™ contains information from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) on NPL sites and other sites. It also contains information from the Biennial Reporting System (BRS) on treatment, storage, and disposal facilities and major generators of hazardous waste.



NOT TO SCALE

Source: Modified from Landview II, based on data as of September 1994.

Figure 5-1
NPL Sites in Kentucky



NOT TO SCALE

Source: Modified from Landview II, based on data as of September 1994.

Figure 5-2
RCRA Facilities in Kentucky

5.1 The Kentucky Hazardous Waste Management Program

The Kentucky Department of Environmental Protection (KDEP), Division of Waste Management oversees and regulates hazardous waste management activities in the State. Under the provisions of the Kentucky Revised Statute, Chapter 224.01-400, the Division of Waste Management's Superfund Branch regulates releases and oversees the characterization of two groups of contaminants at abandoned hazardous waste sites: those identified as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and other substances deemed hazardous by the State. In 1993, the Environmental Protection Agency's (EPA) 50-state study reported 28 staff working on Federal NPL issues and State sites. The Hazardous Waste Management Fund, established under Kentucky Statute 224.46-580, provides monies for site remediation. The monies are obtained from companies operating in the State that report production of RCRA hazardous substances and from cost recoveries. The 1995 EPA study found the balance in the fund to be $1.77 million at the end of fiscal year 1995. There is a $6 million cap on the fund. A total of $2.78 million was added to the fund during the year, and $1.6 million was paid out ($1.5 million for work at non-NPL sites). A total of $2.4 million was obligated during the year ($2.04 million for work at non-NPL sites).

Kentucky has no formal voluntary cleanup program, but voluntary cleanups are permissible under its regular cleanup program.

The State is not authorized to conduct the RCRA corrective action program and does not operate a state corrective action program. Kentucky is authorized to implement the UST regulatory program established by Subtitle I. The Division of Waste Management's Underground Storage Tank Branch is composed of four sections: corrective action, closure, compliance, and administration. The UST Branch operates under Kentucky Statute 224.42-401. Under that statute, the State regulates UST registration and notification, tank closure, releases of contaminants, and remediation activities.

5.2 The Market at Sites Managed Under State Authorities

The State of Kentucky maintains a database that lists all hazardous waste sites that the State has investigated or is investigating or at which it is pursuing remediation. The database contains more than 750 sites. The State currently classifies 238 sites as active, including NPL sites (KDEP 1995).

The database contains the name and address of each facility and some information in comment fields. However, no information was available on contaminants or media contaminated. Because of the voluminous nature of the data, the table containing the names and addresses of the facilities was not included in this document. Information on how to obtain this information from the State of Kentucky is found at the end of this chapter.

5.3 The Market at Abandoned Sites Managed Under the Federal Superfund Program

EPA has listed 20 sites in Kentucky on the NPL; no additional sites were proposed for listing as of the end of FY 94. Table 5-1 presents summary information from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database on the status of NPL sites in Kentucky. **Table 5-2, at the end of this chapter,** lists 10 NPL sites at which remedial action has not yet begun at operable units (OU). The sites and OUs of greatest interest to vendors are those at which technologies have been selected but vendors of the technologies have not yet been chosen. Of the 10 sites, one is a Department of Energy (DOE) installation discussed more fully in the section that examines opportunities at Federal facilities.

Table 5-1
Number of Sites and Operable Units at NPL Sites in Kentucky

Phase of Activity[a]	Number of Sites[b]	Number of Operable Units
Pre-remedial	6	6
Remedial	14	41

Source: Data as of May 1995 from EPA CERCLIS database; see Chapter 1 for a detailed description of the data sources.

[a] Sites with pre-remedial activities are sites where remedial design and construction have not yet begun, although the remedy may have been chosen. These sites, especially the pre-remedial sites still in the investigation phase, present long-term opportunities for vendors. Sites with remedial activities are sites where remedial design has begun and construction might not have begun. Where technologies have been selected but no vendor has been chosen, a site may present a short-term business opportunity.

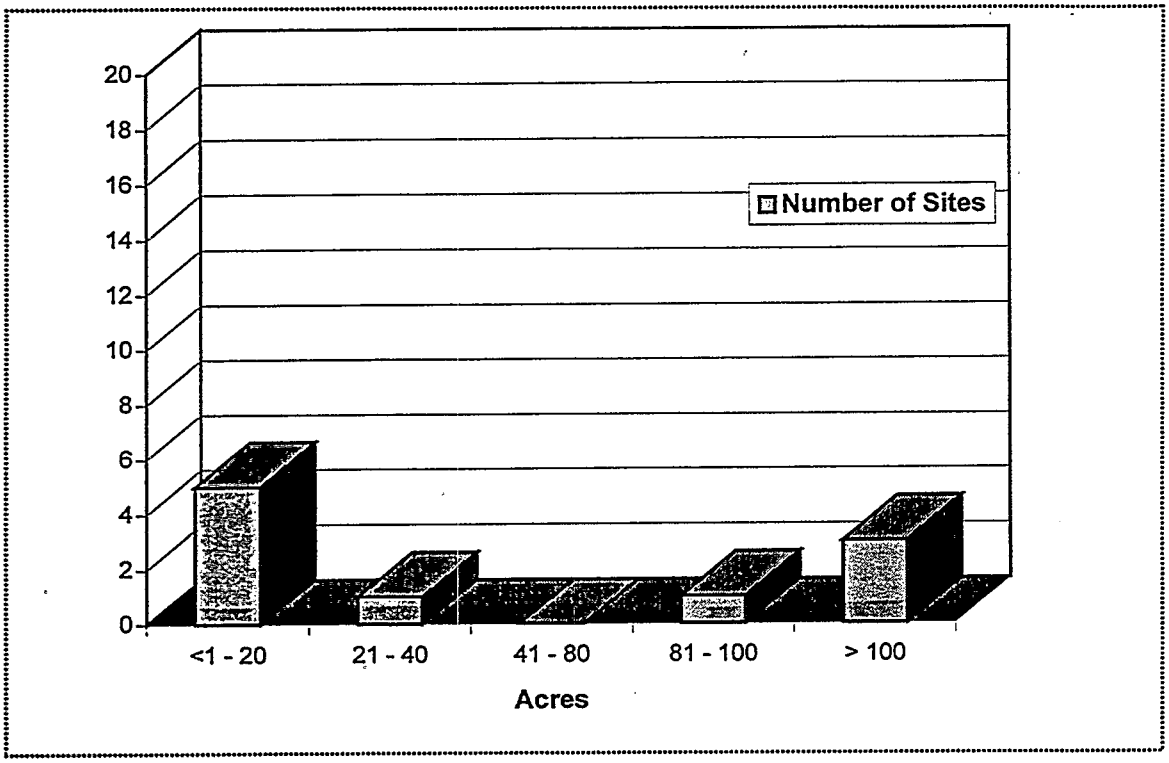
[b] A site may have more than one operable unit in each phase, so operable units may be counted more than once.

Figure 5-3 presents the distribution of sizes of the sites. The sites range in size from 3 to 1,350 acres. Data on the size of the sites were reported in CERCLIS for all 20 sites.

Data on contaminants are available for only five of the 20 NPL sites; contaminants include volatile organic compounds (VOC), heavy metals, and pesticides and herbicides. Data on contaminated media are available for only eight of the sites. Five sites reported soil contamination, six sites reported groundwater contamination, and five sites reported surface-water contamination. In addition, three cases of

contaminated sediment and two cases of contaminated debris and sludge were reported. There are 16 OUs at the NPL sites in Kentucky, seven of which are the responsibility of DOE.

Figure 5-3
NPL Site Size Distribution for the State of Kentucky



5.4 The Market at RCRA Corrective Action Sites

As Table 5-3 indicates, data from the Resource Conservation Recovery Information System (RCRIS) database show that only a single RCRA facility currently is under a requirement to conduct a CMS. That facility is owned by Safety-Kleen Corporation, a vendor of parts cleaning equipment and solutions. The RCRIS data indicate that the entire facility is of concern. Because of the nature of Safety-Kleen's business, VOCs would be one of the major contaminants of concern.

Table 5-3
RCRA Facilities Currently Undergoing Corrective Action in Kentucky[1]

Site Name Mailing Address	EPA ID	SWMU No. and Unit Name
SAFETY-KLEEN CORP. (4-075-01) 1592 WOLOHAN DRIVE ASHLAND, KY 41101	KYD000776724	Entire Facility

[1] Data as of May 1995 from the EPA RCRIS database. See Chapter 1 for a detailed description of data sources. No data were available in RCRIS to indicate the media contaminated or the contaminants of concern.

5.5 The Market at UST Sites Managed by the State

Table 5-4 presents data on UST corrective action measures in Kentucky as of the first half of fiscal year (FY) 1996. There are 22,560 active tanks in the State. Active tanks are defined as tanks still in service (EPA 1993). As of March 31, 1996, the EPA Office of Underground Storage Tanks (OUST) had identified 63 leaking tanks in Kentucky at which cleanup has yet to be initiated. That number represents the difference between the two data elements "confirmed releases" and "cleanups initiated." Cleanup at USTs with soil contamination usually is completed within 6 months to 2 years after the site has been identified. Cleanup at USTs with groundwater contamination usually is completed 2 to 5 years after the site has been identified. Therefore, the number of USTs identified as opportunities for vendors of innovative technologies will change rapidly.

Table 5-4
Underground Storage Tank Corrective Action Measures in Kentucky as of First Half of FY96

Active Tanks	Tanks Closed	Confirmed Releases	Cleanups Initiated	Cleanups Completed	Cleanups Not Yet Initiated
22,560	18,701	6,131	6,068	4,918	63

Source: EPA Office of Underground Storage Tanks Semi-Annual Activity Report for First Half of Fiscal Year 1996 (ending March 31, 1996).

In national studies of USTs performed by EPA in 1991 and 1992, it was found that the majority, or about 87 percent of the tanks, are used to manage gasoline or diesel fuel, kerosene, or heating oil. Of the

remaining USTs, 11 percent manage other materials and wastes, such as used oil (4 percent), hazardous material (2 percent), and other material (5 percent) or are empty (2 percent). The majority of the contamination problems are related to the contamination of soils and groundwater with petroleum products that contain VOCs and semivolatile organic compounds (SVOCs).

5.6 The Market at Federal Facility Sites in Kentucky

There is one DOE installation at which remedial action activities are planned, and six operational or closing DoD installations and formerly used defense sites (FUDS) in Kentucky at which such activities are planned. At the DoD installations are 146 active sites, 67 at which future remedial action currently is planned. Active sites are those at which some form of remediation activity is planned or underway. The total number of sites to be remediated may exceed that figure because, in general, DoD does not plan remediation at a site until the remedial investigation and feasibility study (RI/FS) has been completed. The number of sites where remedial activity is planned could rise as RI/FS are completed.

The *Environmental Restoration and Waste Management Five-Year Plan* (DOE 1993) indicates that a total of more than $94 million is estimated to be needed between FY96 and FY98 in all phases of cleanup activities at the Paducah Gaseous Diffusion Plant. The Paducah plant is on the NPL and has seven OUs that may present opportunities for vendors. Contaminants identified at the site include uranium, technetium, trichloroethylene, and polychlorinated biphenyls. In its 1993 five-year plan, DOE indicated that groundwater at the plant was being treated.

The *Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994* indicates that a total of approximately $185 million is estimated to be needed through the year 2043 in all phases of cleanup at the six installations. The bulk of the funds ($88 million) is allocated to Fort Campbell, followed by the Blue Grass Facility (an ammunition depot), for which $40 million has been allocated. Allocation of the remaining $56 million is distributed among the other four installations. Many of the sites identified at the installations either are undergoing or are scheduled to undergo an RI/FS and therefore, are at a relatively early stage of the remediation process.

Most of the contaminants at sites on military installations at which remediation currently is planned fall into one of three categories: petroleum, oil, and lubricants (POL); VOCs; and heavy metals. Those

contaminants are found in the soil at all sites and in the groundwater in a large percentage of the sites. No data are available on volumes of soil and groundwater to be treated. Table 5-5 provides information on the individual installations in the State and the sites that are subject to remediation at those installations. Staff at each installation determine the individual sites at which they plan to perform remedial actions. Cleanup already may be underway at other sites; such sites are not included in the table because it is unlikely that they will afford an opportunity for vendors of innovative technologies. None of the DoD installations have been listed on the NPL.

Table 5-5
DoD Installations and Sites in Kentucky

Name and Outyear Funding ($000)	Federal Facility Identification Number	Codes[1]	Number of Sites at Which Cleanup is Planned
Blue Grass Facility - Lexington Bluegrass Ammunition Depot Outyear Funding FY95-2010 $40,583	KY421002010500	A	11
Fort Campbell Outyear Funding FY95-2043 $88,679	KY421002014000	A	31
Fort Knox Outyear Funding FY95-2010 $18,230	KY421002047900	A	20
Kentucky Ordnance Works Outyear Funding FY95-2009 $16,344	KY49799F349600	F	4
Lexington Facility - Lexington Bluegrass Ammunition Depot Outyear Funding FY95-2001 $13,520	KY421002050900	A	0
Louisville Naval Surface Warfare Center Outyear Funding FY95-2005 $8,144	KY417002417300	A	1

Source: *Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994*

[1] Codes:
A = The installation is currently operational or on the BRAC list, and cleanup is covered by DERA or BRAC funds
F = The installation is no longer active and is managed by the FUDS Branch

5.7 Further Market Information for Kentucky

A vendor that wishes to obtain information about sites in Kentucky that are managed by EPA may write to:

U.S. Environmental Protection Agency
Region 4
345 Courtland Street, NE
Atlanta, GA 30365

For information on RCRA facilities, the envelope should be marked to the attention of the Freedom of Information Act Officer, Office of RCRA and Federal Facilities. For information on CERCLA facilities in Kentucky, the envelope should be marked to the attention of the Freedom of Information Act Officer, North Superfund Remedial Branch. The requestor will be billed for the information, according to the volume of information provided. For more information on USTs handled by EPA, vendors may contact the EPA Region 4 UST program manager:

John Mason
U.S. EPA Region 4
345 Courtland Street, NE
Mail Code 4WM-GWP-15
Atlanta, GA 30365

For information on USTs handled through the State's UST program, vendors may contact:

Kentucky Department of Environmental Protection
Division of Waste Management
UST Branch
18 Reilly Road
Frankfurt, KY 40601
(502) 564-6716

For information on hazardous waste sites managed through the state's waste programs, vendors may contact:

Bob Padgett
Kentucky Department of Environmental Protection
Division of Waste Management
18 Reilly Road
Frankfurt, KY 40601
(502) 564-6716

For information about DOE sites or any of DOE's technology development assistance programs, vendors may contact:

DOE's Center for Environmental Management Information
470 L'Enfant Plaza East
Suite 7112
Washington, DC 20024
(800) 736-3282

The U.S. Department of Defense (DoD) does not have a single point of contact that handles all of DoD's environmental restoration initiatives, site-level information, and technology programs. The Defense Environmental Restoration Program Annual Report to Congress for FY 1995 contains detailed information on environmental restoration accomplishments and schedules at DoD installations world-wide. This report is available on the Internet at the DoD Environmental Restoration home page at:

http://www.dtic.mil/envirodod/

The home page also provides links to other internet sites that pertain to DoD environmental restoration activities.

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Table 5-2
NPL Sites in Kentucky at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	OPERABLE UNIT (LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: AIRCO **NPL STATUS:** Final					**EPA ID:** KYD041981010 **SIZE:** 5 Acres		**ADDRESS:** HWY 1523, CALVERT CITY, KY 42029 **TYPE:** Refuse Systems--Industrial Landfill	
01	RI/FS	(FE/RP)	9/30/95	Y	GW; SL; SO	1,227,150,000 gal; 7,070,000 gal; 5,000 cy	VOC	Air Stripping; Leachate Treatment; Off-Site Treatment; Steam Stripping; Monitoring; Disposal of Residual; Solidification and Stabilization
SITE NAME: B.F. GOODRICH **NPL STATUS:** Final					**EPA ID:** KYD006370167 **SIZE:** 3 Acres		**ADDRESS:** KY HWY 1523, CALVERT CITY, KY 42029 **TYPE:** Refuse Systems--Industrial Landfill	
01	RI/FS	(FE/RP)	9/30/95	Y	GW; SL; SO; SW	1,227,150,000 gal; 7,070,000 gal; 5,000 cy	VOC	Air Stripping; Leachate Treatment; Off-Site Treatment; Steam Stripping; Monitoring; Disposal of Residual; Solidification and Stabilization
SITE NAME: BRANTLEY LANDFILL **NPL STATUS:** Final					**EPA ID:** KYD980501019 **SIZE:** 4 Acres		**ADDRESS:** HWY 85, ISLAND, KY 41098 **TYPE:** Abandoned - No Use	
01	RI/FS	(RP/FE)	8/30/96	Y	AI; GW; SW	NA	NA	NA
SITE NAME: FORT HARTFORD COAL CO. STONE QUARRY **NPL STATUS:** Final					**EPA ID:** KYD980844625 **SIZE:** 100 Acres		**ADDRESS:** DAVIDSON STATION RD, OLATON, KY 42361 **TYPE:** Abandoned - No Use	
01	RI/FS	(RP/FE)	12/30/96	Y	AI; RC; SW	NA	NA	NA
SITE NAME: GREEN RIVER DISPOSAL, INC. **NPL STATUS:** Final					**EPA ID:** KYD980501076 **SIZE:** 14 Acres		**ADDRESS:** KELLY CEMETARY RD, MACEO, KY 42355 **TYPE:** Refuse Systems--Industrial Landfill, Municipal Landfill, and Co-disposal Landfill	
01	NA	(RP/FE)	12/31/95	N	DB; LW; SD	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 5-2 (continued)
NPL Sites in Kentucky at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	OPERABLE UNIT (LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: MAXEY FLATS NUCLEAR DISPOSAL NPL STATUS: Final					EPA ID: KYD980729107 SIZE: 279 Acres		ADDRESS: MAXEY FLATS RD, HILLSBORO, KY 41049 TYPE: Refuse Systems--Radioactive Waste Disposal	
01	NA	(F/FE/RP/MR)	6/30/97	Y	AI; DB; GW; LW; SD; SO; SW	NA	METALS; OTHER INORGANICS; PESTICIDES/ HERBICIDES; RADIOACTIVE MATERIALS; VOC	Monitoring; Surface Capping Only; Disposal of Residual; Solidification and Stabilization
SITE NAME: NATIONAL ELECTRIC COIL/COOPER INDUSTRIES NPL STATUS: Final					EPA ID: KYD986069954 SIZE: 3.5 Acres		ADDRESS: OLD HIGHWAY 119, DAYHOIT, KY 40824 TYPE: Other	
01	NA	(RP/FE/F)	9/30/95	Y	AI; GW; SO	3,774 cy	VOC; METALS	Leachate Treatment; Off-Site Treatment; Monitoring; Air Stripping; Disposal of Residual; Backfilling; Excavation and Final Removal to Off-Site; Pump and Treat, Final On-Site Discharge
SITE NAME: NATIONAL SOUTHWIRE ALUMINUM CO NPL STATUS: Final					EPA ID: KYD049062375 SIZE: 1,100 Acres		ADDRESS: JCT KY HWY 271 & 334, HAWESVILLE, KY 42348 TYPE: NA	
02	NA	(F/RP)	4/1/97	N	NA	NA	NA	NA
SITE NAME: SMITH'S FARM NPL STATUS: Final					EPA ID: KYD097267413 SIZE: 30 Acres		ADDRESS: PRYOR VALLEY RD, SHEPERDSVILLE, KY 40165 TYPE: Abandoned; No Use; Refuse Systems--Co-disposal Landfill	
02	FORMERLY PERMITTED LANDFILL	(RP/FE/F)	3/30/96	Y	GW; LW; RC; SD; SO; ST; SW	NA	VOC; METALS; PESTICIDES/ HERBICIDES	Disposal of Residual; Monitoring; Surface Capping Only

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 5-2 (continued)
NPL Sites in Kentucky at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: US DOE PADUCAH GAS DIFFUSION PLANT					EPA ID: KY8890008982		ADDRESS: P O BOX 1410, PADUCAH, KY 42001	
NPL STATUS: Final					SIZE: 1350 Acres		TYPE: NA	
07	WAG 13	(FF)	12/30/00	N	NA	NA	NA	NA
08	WAG 22 BURIAL GROUNDS	(FF)	3/30/97	NA	NA	NA	NA	NA
09	WAG 23 PCB SPILL	(FF)	3/30/02	NA	NA	NA	NA	NA
10	SURF WATER INTEGRATER	(FF)	3/30/01	N	NA	NA	NA	NA
11	GW INTEGRATOR	(FF)	9/30/00	N	NA	NA	NA	NA
12	WAG 17	(FF)	6/30/01	N	NA	NA	NA	NA
13	WAG 6	(FF)	3/30/02	N	NA	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

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6.0 DEMAND FOR REMEDIATION OF SITES IN MISSISSIPPI

This chapter provides a detailed discussion of the opportunities available in the State of Mississippi for vendors of innovative technologies. The chapter is organized into seven sections. The first section describes the organization and authority of the State's program. The next section discusses opportunities at sites subject to Mississippi's Solid Waste Disposal Act and Air and Water Pollution Control Act. That section is followed by a similar discussion of opportunities at National Priorities List (NPL) sites. The fourth and fifth sections discuss facilities subject to corrective action under the Resource Conservation and Recovery Act (RCRA) and underground storage tank (UST) sites managed by the State. Subsequent sections provide information on opportunities at Federal facilities and provide further useful information about working in the State.

Figures 6-1 and 6-2 present two maps of Mississippi that indicate the locations of sites in the State that are on the NPL and the RCRA facilities in the State[1]. Of the 4 NPL sites in Mississippi, one is near Jackson, one is in the northwest portion of the state near Greenville and one is in the southern section of the state, near Foxworth. RCRA facilities also are found throughout the State, with clusters around Jackson and along its southern boundary and the Gulf of Mexico.

Summary Information

Mississippi offers a variety of opportunities for vendors of innovative technologies. Mississippi currently has four sites on the NPL. Of those four sites, none are Federal facilities and one NPL site has an operable unit (OU) at which remedial action has not yet begun. Listed on the Mississippi Uncontrolled Sites List are 156 sites. There are 33 RCRA facilities in Mississippi, 1 of which currently is under a requirement for a corrective measures study (CMS) to be performed. According to the EPA Office of Underground Storage Tanks, 118 USTs in the State require remediation. Finally, there are seven Department of Defense (DoD) installations and formerly used defense sites (FUDS) located in Mississippi. Of the installations' 61 sites, remediation currently is planned for 38.

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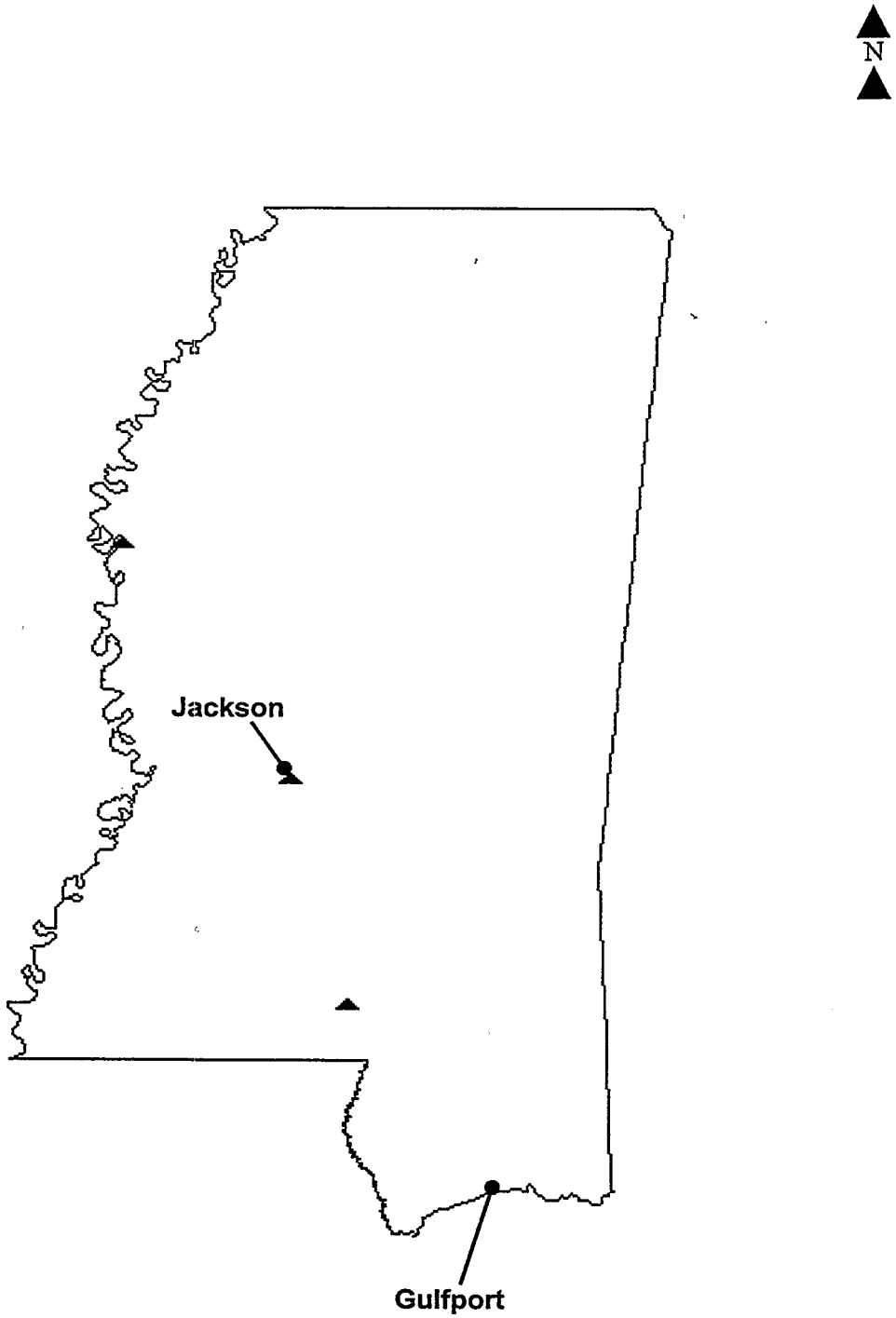
1 Figures 6-1 and 6-2 do not indicate the locations of *all* NPL sites or *all* RCRA facilities located in Mississippi. LandView II™ contains information from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) on NPL sites and other sites. It also contains information from the Biennial Reporting System (BRS) on treatment, storage, and disposal facilities and major generators of hazardous waste.



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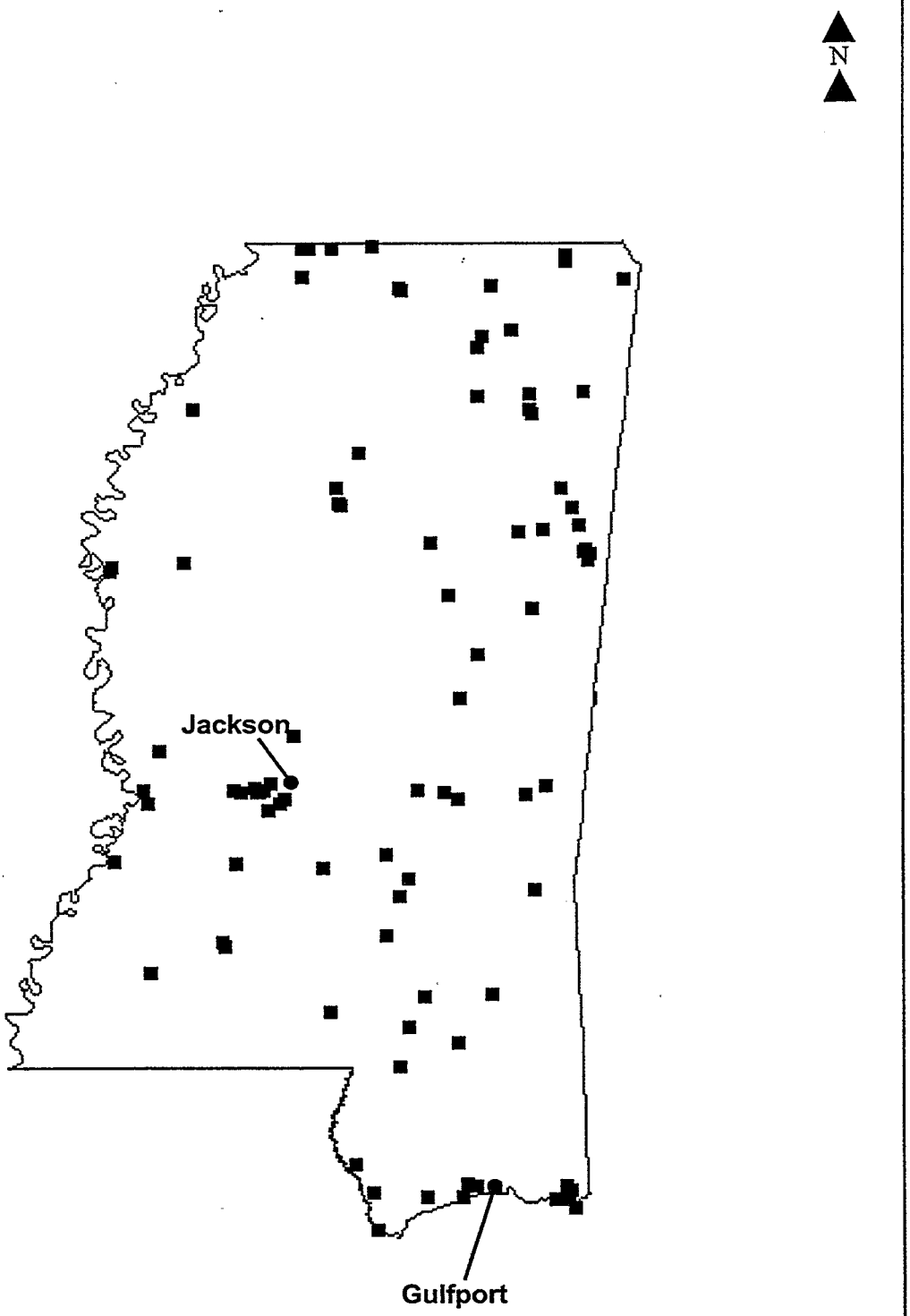
Source: Modified from Landview II, based on data as of September 1994.

Figure 6-1
NPL Sites in Mississippi



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Source: Modified from Landview II, based on data as of September 1994.

Figure 6-2
RCRA Facilities in Mississippi

6.1 The Mississippi Hazardous Waste Management Program

The Mississippi Department of Environmental Quality (MSDEQ) is responsible for administering the State's regulations governing the environment. The Hazardous Waste Division of the Office of Pollution Control is responsible for the oversight of hazardous waste management activities. The Superfund Branch is specifically responsible for the investigation of uncontrolled sites and remediation of releases. According to EPA's 50-State Study, in 1995 MSDEQ's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) section had 11 full-time employees.

The Solid Waste Disposal Act of 1974 (amended numerous times, most recently in 1990) Mississippi Code Annotated section 17-17-29(4) and (6), enables the State to take response action at waste sites, but the State has no state-specific version of Superfund. The Property Transfer Act 1993 requires disclosure of contamination before transfer. The 1988 amendments to the Air and Water Pollution Control Act, Mississippi Code Annotated, sections 49-17-1 *et seq.*, authorize hazardous waste response actions and create the Pollution Emergency Response Fund (Mississippi Code Annotated section 49-17-68). Although Mississippi is authorized to issue RCRA Part B permits for hazardous waste facilities, the State is not authorized to administer the corrective action program; all corrective action activities are managed by the U.S. Environmental Protection Agency (EPA) Region 4. The state has no formal voluntary cleanup program.

According to EPA's 1995 50-State Study, Mississippi's Pollution Emergency Response Fund was created in 1988 and had a balance of $1.3 million as of June 30, 1995. It added $669,000 during the fiscal year and paid out $2.5 million, all for work on non-NPL sites. The fund is authorized to receive money from civil penalties from the pollution regulatory programs and cost recoveries. The fund may be used for site investigation, studies and design, removal actions, and emergency response. Mississippi appropriates funds site by site to provide matching funds for sites addressed under CERCLA. The Mississippi Uncontrolled Sites List includes sites that MSDEQ has determined to require investigation under the state Solid Waste Disposal Act. A description of those sites is included in section 6.2.

The state considers background level, water quality criteria, maximum contaminant levels (MCL) EPA guidelines, risk assessment with a generic level of 10^{-6}, and EPA's Hazard Index to determine cleanup levels. The state then selects the most stringent of these criteria as the cleanup level.

The MSDEQ Groundwater Division houses the UST Branch. The UST Branch is composed of technical and financial staff who oversee the registration of USTs as well as prevention, investigation, and remediation of releases. In addition, the UST Branch conducts public outreach activities, specializing in certification of UST removers and installers. Under the Mississippi Underground Storage Tank Act of 1988, the Federal UST regulations were adopted for implementing State UST regulations. The act also created the Mississippi Groundwater Protection Trust Fund that provides monies for the assessment and remediation of releases from USTs. The trust fund is supported by a Statewide gasoline tax.

6.2 The Market at Sites Managed Under State Authorities

As of May 1995, 156 sites were listed on the Mississippi Uncontrolled Sites List. MSDEQ has determined that all of those sites require investigation. Currently, approximately 100 to 110 sites are under investigation. Current information on the cleanup status of the sites is available from the State. See Section 6.7 for information on how to obtain the Uncontrolled Sites List.

6.3 The Market at Abandoned Sites Managed Under the Federal Superfund Program

EPA has placed four sites in Mississippi on the NPL, of which two sites are proposed for listing. Table 6-1 presents summary information from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database on the status of NPL sites in Mississippi. **Table 6-2, at the end of this chapter,** lists information from the CERCLIS database available on the one listed site and one operable unit (OU) at which remediation activities have not yet begun. The Newsom Brothers site and OU are of the greatest interest to technology vendors; technologies themselves may have been selected, but vendors of the technologies have not. According to EPA's *Innovative Treatment Technologies Annual Status Report*, Sixth Edition, no innovative technologies have been selected for use at the site. Review of NPL site summaries indicates that there is contamination with volatile organic compounds (VOC) in both the soil and groundwater at the NPL site. No data were available on the volumes of contaminated media present at the site.

Table 6-1
Number of Sites and Operable Units at NPL Sites in Mississippi

Phase of Activity	Number of Sites	Number of Operable Units
Pre-remedial	2	3
Remedial	2	4

Source: Data as of May 1995 from EPA CERCLIS database; see Chapter 1 for a detailed description of the data sources.

[a] Sites with pre-remedial activities are sites where remedial design and construction have not yet begun, although the remedy may have been chosen. These sites, especially the pre-remedial sites still in the investigation phase, present long-term opportunities for vendors. Sites with remedial activities are sites where remedial design has begun and construction might not have begun. Where technologies have been selected but no vendor has been chosen, a site may present a short-term business opportunity.

[b] A site may have more than one operable unit in each phase, so operable units may be counted more than once.

6.4 The Market at RCRA Corrective Action Sites

As stated in Section 6.1, Mississippi is authorized by EPA to issue RCRA Part B permits for hazardous facilities, but not authorized to administer the corrective action program. As a result, all corrective action activities are managed by EPA Region 4.

Data from the Resource Conservation and Recovery Information System (RCRIS) database indicate that there are 33 RCRA facilities in the State. One of the RCRA facilities currently requires corrective action. The definition of corrective action used here is that a facility has been required to perform a CMS. The number of facilities with CMS imposed is not a direct subset of RCRA treatment, storage, and disposal (TSD) facilities, instead it is a subset of TSD facilities and hazardous waste generators. While TSD facilities are statutorily required to address corrective action, EPA has discretionary authority to impose corrective action on generators. **Table 6-3, at the end of the chapter,** presents the facility and its two solid waste management units (SWMU). In addition, 19 facilities are under a requirement to conduct a RCRA facility investigation (RFI). The number of facilities with an RFI imposed is not a direct subset of RCRA TSD facilities, instead it is a subset of TSD facilities and hazardous waste generators. While TSD facilities are statutorily required to address corrective action, EPA has discretionary authority to impose corrective action on generators. As discussed in Section 1.2, these facilities also may provide either a long-term opportunity or near-term opportunity where no CMS is necessary to begin a corrective action or a corrective activity begins in accordance with the stabilization initiative.

6.5 The Market at UST Sites Managed by the State

The MSDEQ's UST Branch in the Groundwater Division administers the State UST program. Mississippi has fewer active tanks than any other state in Region 4. There are 11,602 active tanks in the state. Active tanks are defined as tanks still in service. Table 6-4 presents data on the number of USTs in Mississippi.

Confirmed releases have occurred at 38 percent of the tanks. As of March 31, 1996, the EPA Office of Underground Storage Tanks (OUST) has identified 118 leaking tanks sites in Mississippi at which cleanup had yet to be initiated. That number represents the difference between the two data elements "confirmed releases" and "cleanups initiated." Cleanup at USTs with soil contamination usually is completed within 6 months to 2 years after the site has been identified. Cleanup at USTs with groundwater contamination usually is completed 2 to 5 years after the site has been identified. Therefore, the number of USTs identified as marketing opportunities for vendors of innovative technologies will change rapidly.

In national studies of USTs performed by EPA in 1991 and 1992, it was found that the majority, or about 87 percent of the tanks, are used to manage gasoline or diesel fuel, kerosene, or heating oil. Of the remaining USTs, 11 percent manage other materials and wastes, such as used oil (4 percent), hazardous material (2 percent), and other material (5 percent) or are empty (2 percent). The majority of the contamination problems are related to the contamination of soils and groundwater with petroleum products that contain VOCs and semivolatile organic compounds (SVOC).

As indicated above, the UST program is managed by MSDEQ's Groundwater Protection Division, UST Branch, located in MSDEQ's central office in Jackson. Further information on the locations of leaking USTs can be obtained from the State (see section 6.7).

Table 6-4
Underground Storage Tank Corrective Action Measures in Mississippi as of the First Half of FY 1996

Active Tanks	Tanks Closed	Confirmed Releases	Cleanups Initiated	Cleanups Completed	Cleanups Not Yet Initiated
11,602	16,715	4,408	4,290	4,006	118

Source: EPA Office of Underground Storage Tanks Semi-Annual Activity Report, for the First Half of Fiscal Year 1996 (ending March 31, 1996)

6.6 The Market at Federal Facility Sites in Mississippi

Although there are no Department of Energy (DOE) facilities in Mississippi, there are seven operational or closing Department of Defense (DoD) installations and formerly used defense sites (FUDS) located in the State at which remediation action activities are planned or underway. At those installations are 61 active sites, 38 of which have future remediation planned. Active sites are those at which some form of remediation activity is planned or underway. The total number of sites to be remediated may exceed this

figure because DoD typically does not plan remediation at a site until at least the remedial investigation and feasibility study (RI/FS) has been completed.

The *Defense Environmental Restoration Program Annual Report to Congress for 1994* (DERP report), indicates that a total of $213 million is estimated to be needed through the year 2020 in all phases of cleanup at the seven installations. Facilities having the largest allocations of funds are Gulfport National Construction Battalion Center ($122 million) and Naval Air Station Meridian ($45 million). Many of the sites identified at the seven installations are undergoing or are scheduled to undergo an RI/FS and therefore are at a relatively early stage of the remediation process. As the RI/FS is completed, the number of sites at which remediation is planned could increase.

The majority of the contaminants at the sites at which remediation currently is planned fall into one of three broad categories: petroleum, oil, and lubricants (POL); VOCs; and metals. Those contaminants are found in the soil at all the sites and in the groundwater in a large percentage of the sites. Data on volumes of soil and groundwater to be treated are not available. Table 6-5 provides information on the individual installations and sites subject to remediation at those installations. The number of sites to be cleaned up in the future is defined in the DERP report. Cleanup already may be underway at other sites; such sites have not been included in the total because it is unlikely that they will afford opportunity for vendors of innovative technologies. Of the DoD sites in Mississippi, none is listed on the NPL.

Table 6-5
DoD Installations and Sites in Mississippi

Name, Address, and Outyear Funding ($000)	Federal Facility Identification Number	Codes[1]	Number of Sites at Which Cleanup is Planned
Allen C. Thompson Outyear Funding FY95-2004 $1,826	MS457282647800	A	1
Columbus Air Force Base Outyear Funding FY95-2020 $9,592	MS457152406000	A	4
Gulf Ordnance Plant Outyear Funding FY95-2007 $6,374	MS49799F000500	F	3
Gulfport Naval Construction Battalion Center Outyear Funding FY95-2015 $122.822	MS417002262600	A	8

Table 6-5 (continued)
DoD Installations and Sites in Mississippi

Name, Address, and Outyear Funding ($000)	Federal Facility Identification Number	Codes[1]	Number of Sites at Which Cleanup is Planned
Keesler Air Force Base Outyear Funding FY95-2020 $15,070	MS457152416400	A	9
Key Field Air National Guard Base Outyear Funding FY95-2004 $12,066	MS457282590400	A	6
Naval Air Station Meridian Outyear Funding FY95-2010 $45,626	MS417009001200	A	7

Source: *Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994*

[1] Codes:
A = The installation is currently operational or on the BRAC list, and cleanup is covered by DERA or BRAC funds
F = The installation is no longer active and is managed by the FUDS Branch

6.7 Further Market Information for Mississippi

A vendor that wishes to obtain information about sites in Mississippi that are managed by EPA may write to:

U.S. Environmental Protection Agency
Region 4
346 Courtland Street, NE
Atlanta, GA 30365

For information on RCRA facilities, the envelope should be marked to the attention of the Freedom of Information Act Officer, Office of RCRA and Federal Facilities. For information on CERCLA facilities in Mississippi, the envelope should be marked to the attention of the Freedom of Information Act Officer, South Superfund Remedial Branch. The requestor will be billed for the information, according to the volume of information. For more information on USTs handled by EPA, vendors may contact the EPA Region 4 UST program manager:

John Mason
U.S. EPA
345 Courtland Street, NE
Mail Code 4WM-GWP-15
Atlanta, GA 30365

MSDEQ's Uncontrolled Sites Section is a good source of information about the hazardous waste sites that MSDEQ manages. The section can be contacted at:

Mississippi Department of Environmental Quality
Office of Pollution Control
Uncontrolled Sites Section
P.O. Box 10385
Jackson, MS 39289-0385
(601) 961-5072
(601) 961-5741 (fax)

A list of leaking USTs is available from MSDEQ's UST Program. The list and additional information can be obtained from:

Mississippi Department of Environmental Quality
Office of Pollution Control
Underground Storage Tank Program
P.O. Box 10385
Jackson, MS 39289-0385
(601) 961-5171

For information about DOE sites or any of DOE's technology development assistance programs, vendors may contact:

DOE's Center for Environmental Management Information
470 L'Enfant Plaza East
Suite 7112
Washington, DC 20024
(800) 736-3282

The U.S. Department of Defense (DoD) does not have a single point of contact that handles all of DoD's environmental restoration initiatives, site-level information, and technology programs. The Defense Environmental Restoration Program Annual Report to Congress for FY 1995 contains detailed information on environmental restoration accomplishments and schedules at DoD installations world-wide. This report is available on the Internet at the DoD Environmental Restoration home page at:

http://www.dtic.mil/envirodod/

The home page also provides links to other internet sites that pertain to DoD environmental restoration activities.

Table 6-2

NPL Sites in Mississippi at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	OPERABLE UNIT (LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: NEWSOM BROTHERS/OLD REICHHOLD CHEMICALS					EPA ID: MSD980840045		ADDRESS: WADE ST & PEARL ST, COLUMBIA, MS 39429	
NPL STATUS: Final					SIZE: 80 Acres		TYPE: Industrial Organic Chemicals	
02	NA	(RP/FE)	12/31/97	N	NA	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.

[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because: (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

Al	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Constituents
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

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TABLE 6-3

RCRA Facilities Currently Undergoing Corrective Action in Mississippi[1]

SITE NAME MAILING ADDRESS	EPA ID	SWMU NO. AND UNIT NAME
ROGERS RENTAL & LANDFILL COMPANY HIGHWAY 24 WEST CENTREVILLE, MS 39631	MSD083543009	BARL RETENTION POND

1 Data as of May 1995 from the EPA RCRIS database. See Chapter 1 for a detailed description of data sources.

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7.0 DEMAND FOR REMEDIATION OF SITES IN NORTH CAROLINA

This chapter provides a detailed discussion of the opportunities available in the State of North Carolina for vendors of innovative technologies. The chapter is organized in seven sections. The first section describes the organization and authority of the State's program. The next section discusses opportunities at sites subject to North Carolina's Inactive Hazardous Sites Cleanup Fund. That section is followed by a similar discussion of opportunities at Superfund National Priorities List (NPL) sites. The fourth and fifth sections discuss the markets at Resource Conservation and Recovery Act (RCRA) facilities subject to corrective action, and at underground storage tank (UST) sites managed by the State. Subsequent sections provide information on opportunities at Federal facilities and provide other useful information about working in the State.

Figures 7-1 and 7-2 present two maps of North Carolina that indicate the locations of the sites in the State that are on the NPL and the RCRA facilities in the State.[1] The 23 NPL sites in North Carolina are distributed throughout the State. RCRA facilities also are found distributed throughout the State, with small clusters around Charlotte and Raleigh.

Summary Information

North Carolina offers the vendor of innovative technologies a variety of potential marketing opportunities. North Carolina currently has 23 NPL sites. Of those 23, 2 are Federal facilities covered under the Defense Environmental Restoration Program. Fifteen NPL sites have 31 operable units at which remedial action has not yet begun. Listed on the North Carolina Priority List are 158 sites at which State funds will be required to complete cleanup, each of which may require remediation. There are 72 RCRA facilities in North Carolina, 5 of which currently are under a requirement for the conduct of a corrective measures study. According to the EPA OUST, 937 USTs in the State require remediation. Finally, there are 13 DoD installations and formerly used defense sites (FUDS) located in North Carolina. Of the installations' 206 sites, remediation currently is planned for 149.

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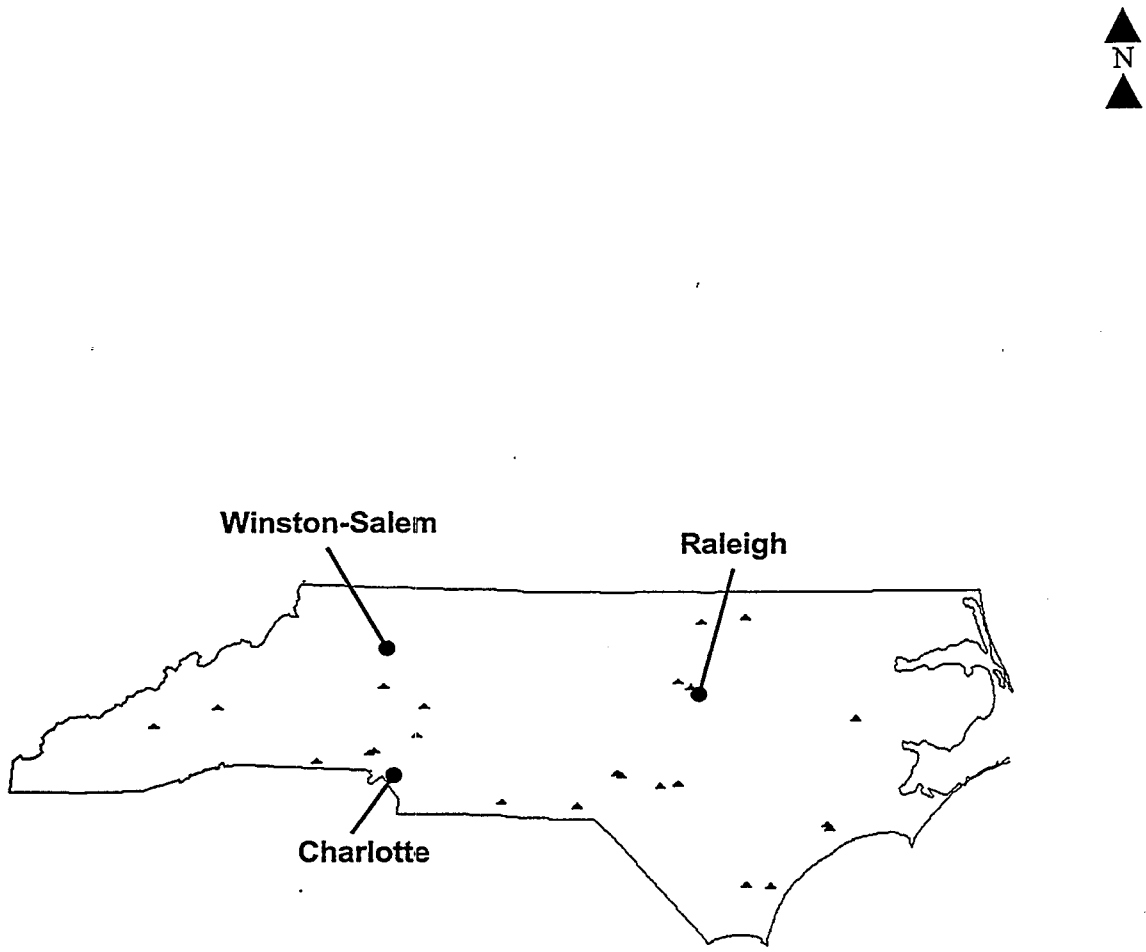
1 Figures 7-1 and 7-2 do not indicate the locations of *all* NPL sites or *all* RCRA sites located in North Carolina. LandView II™ contains information from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) on NPL sites and other sites. It also contains information from the Biennial Reporting System (BRS) on treatment, storage, and disposal facilities and major generators of hazardous waste.



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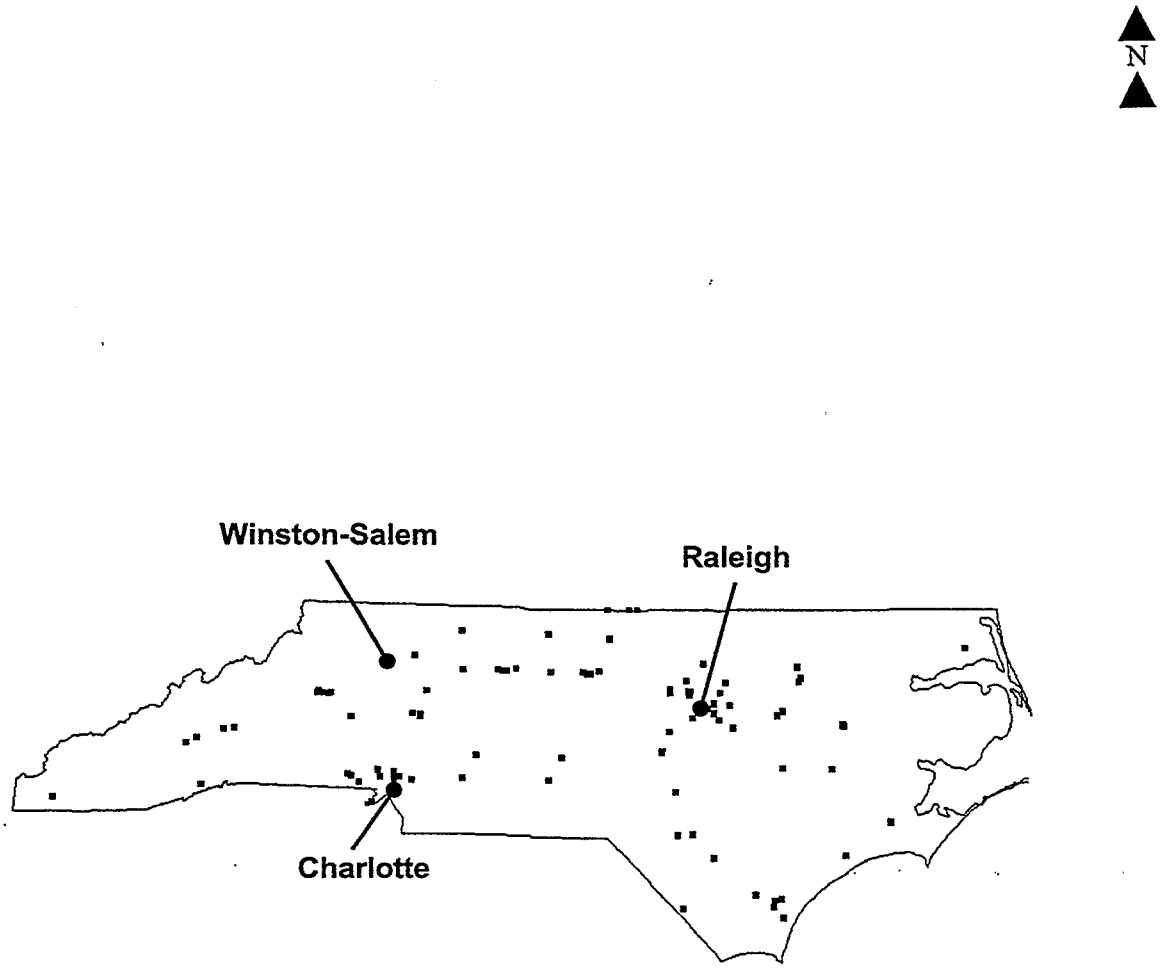
Source: Modified from Landview II, based on data as of September 1994.

Figure 7-1
NPL Sites in North Carolina



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Source: Modified from Landview II, based on data as of September 1994.

Figure 7-2
RCRA Facilities in North Carolina

7.1 The North Carolina Hazardous Waste Management Program

The North Carolina Department of Environment, Health, and Natural Resources (DEHNR) is responsible for administering the State's regulations governing abandoned waste sites. DEHNR has four major divisions: Environmental Protection, Health, Natural Resources, and Administration. Under the direction of the Assistant Secretary of Environmental Protection are 7 divisions: Coastal Management, Air Quality, Land Resources, Radiation Protection, Waste Management, Waste Reduction, and Water Resources. The two divisions of interest to vendors of innovative technologies are the Water Quality Division that oversees the UST program and the Waste Management Division that oversees State involvement at NPL sites, the State Superfund program, and RCRA programs. The Division of Waste Management, which has about 150 to 200 employees throughout the State, contains the State Superfund Section. The Superfund section of the Waste Management Division of DEHNR has about 32 staff positions. The Inactive Hazardous Sites Program was created to address sites contaminated with hazardous substances that are not being cleaned up under other environmental programs. The Hazardous Waste Section of the Waste Management Division adminsters the RCRA program. The Groundwater Section of the Water Quality Division administers the Incident Management Database that tracks pertinent information about releases from underground storage tanks (UST).

In 1987, the legislature enacted voluntary cleanup provisions. These cap remedial action costs for volunteers at $3 million. Any PRP may participate, and there is no requirement to pay for State oversight or administrative costs. Under recent statutory amendments in 1994 and 1995, the voluntary cleanup program will be privatized, so that certification of cleanups will be a private transaction.

The Inactive Hazardous Sites Response Act of 1987, North Carolina General Statute (NCGS) Sections 130A-310, *et seq,* authorizes the Inactive Hazardous Sites Cleanup Fund; provides authority to order responsible parties to conduct cleanup and recover costs; and establishes a priority list, the Inactive Hazardous Sites Inventory, and requirements governing transfer of property (EPA 1993). The Solid and Hazardous Waste Management Act, NCGS Sections 130A-290, *et seq*, authorizes the Emergency Response Fund for emergency clean up of hazardous waste, provides enforcement authorities, and requires property transfers to be recorded.

At the same time, NCGS Sections 130A-310.2 requires that sites catalogued in the Inactive Hazardous Sites Inventory be assigned priority based on the degree of threat posed by each to public health and the environment. After a site is discovered, it is placed in the evaluations pending category to await ranking. Criteria used to determine site ranking include residential or nonresidential use, number of contaminated media, and whether drinking-water supplies are in the immediate vicinity of the site. The Inactive Hazardous Sites Program ascertains cleanup levels as would be applied under CERCLA, including the application of the risk range of 10^{-4} to 10^{-6} for carcenogenic risks. Once a site has been ranked, it is transferred from the evaluations pending category to the Inactive Hazardous Waste Sites Priority List in the Inactive Hazardous Sites Inventory.

North Carolina administers several pools of funds, each serving a different purpose. According to the U.S. Environmental Protection Agency's (EPA) 1995 50-State Study, the Inactive Hazardous Sites Cleanup Fund (IHSCF) had a balance of about $2.5 million at the end of fiscal year 1995. In general, if a responsible party who does not comply with an order to clean up a site is insolvent or if no responsible party can be identified at a priority site, the fund will be used to pay for cleanup of the site. Cost of cleanup of individual sites can range from a few thousand to several million dollars; however, the State has estimated an average cleanup cost of $470,000 for each site on the priority list, with that estimate based on costs for cleanups conducted in North Carolina and other states.

According to the EPA's 1995 50-State Study, the IHSCF originally received most of its money from appropriations. Penalties are the most significant source of funding. The IHSCF can be used for site investigations, studies and designs, removals, emergency response actions, and for covering the cost of recording on deeds notices of Inactive Hazardous Substance or Waste Disposal Sites. Second, the Emergency Response Fund is used only for emergency response and obtains all of its funding from RCRA penalties. It is capped at $500,000, and excess funds are transferred to the IHSCF. It paid out $53,576 during fiscal year 1995. Finally, the Cost Share Trust Fund, which is only used for the State's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) match at NPL sites, had a balance of $4.8 million at the end of fiscal year 1995 (FY95). It obtains its funding from appropriations. This fund received $800,000 during 1995 and $200,000 was paid out. The remainder of the Cost Share Trust Fund, $4.5 million, is obligated for use at NPL sites.

As required by statute, the secretary of DEHNR ascertains the cleanup levels in conformance with CERCLA requirements. The state uses a health-based risk assessment, with an acceptable risk level of 10^{-6} and a Hazard Index of 1. Cleanup levels are calculated for each contaminant by environmental media based on site-specific risks. Water quality criteria, groundwater standards, and other applicable state standards also are used where appropriate.

DEHNR also administers the State UST program under the Water Quality Division. North Carolina ranks third in the number of active tanks in Region 4; active tanks are defined as tanks still in service (EPA 1993). As indicated above, the UST program is managed by DEHNR's Environmental Management Division. The facilities and sites managed under the programs identified above are discussed in the following sections.

7.2 The Market at Sites Managed Under State Authorities

As of February 1995, the Hazardous Sites Inventory contained about 1,020 sites (DEHNR 1995). The Inactive Hazardous Sites Program conducts work at 87 percent of the sites, in the following categories: sites on the state priority list (almost 16 percent), sites at which the responsible party is conducting voluntary remedial action (RA) (2 percent), sites for which evaluations are pending (47 percent), and sites that require no further action (22 percent). DEHNR as a whole conducts work at all of the sites. As of February 1995, there were 158 sites on the priority list.

Table 7-1 presents the 11 sites currently on the priority list at which State funds will be required to complete cleanup as well as the 14 sites on the priority list at which State funds may be required to complete cleanup because the ability of the responsible parties to pay for cleanup is questionable or the location or existence of responsible parties is uncertain. Responsible party searches are only conducted at priority sites at the time the State takes action. It is expected that many of the sites will either not have financially-viable responsible parties, or will have recalcitrant responsible parties. About 400 sites remain to be ranked and transferred to the priority list. Many of these sites will not have responsible parties. The priority list is revised in February each year. Data provided by DEHNR as of February 1995 and listed in Table 7-1 indicates that groundwater and soil are contaminated at most sites on the priority list. Typical contaminants include organics and metals.

Table 7-1
North Carolina Priority List Sites That Require State Funds and Other Priority List Sites That May Require State Funds

Priority	Site Name	Municipality	County	Site Type/Media/Contaminants
Priority Sites That Require State Funding				
104	Carolina Production Finishing	Ashville	Buncombe	Metal plating/Groundwater/Chromium
155	Forbush Metal Speer Bridge Road	Yadkinville	Yadkin	Metal plating/Soil/Cyanide, metals, phthalates, and organic solvents
28	Jones and Presnell Studio	Charlotte	Mecklenburg	Photography studio/Groundwater/Chlorinated organic solvents
74	Kidd Lane Battery Disposal	Charlotte	Mecklenburg	Battery lead plate recovery/Soil/Lead
84	Love Battery	Concord	Cabarrus	Battery lead plate recovery/Soil/Lead
68	Martin's Battery Salvage, Inc.	Kannapolis	Cabarrus	Battery lead plate recovery/Soil/Lead
2	North Belmont PCE Site	Charlotte	Mecklenburg	Dry cleaning/Groundwater/Organics
30	Old ATC Refinery	Wilmington	New Hanover	Dry cleaning/Groundwater and soil/Chlorinated organic solvents
62	Rainbow Drive Battery	Kannapolis	Cabarrus	Battery lead plate recovery/Soil/Lead
35	Scotts Creek Battery	New Bern	Craven	Battery casing disposal/Solid/Lead
7	Ulah Battery	Asheboro	Randolph	Battery lead plate recovery/Soil/Lead
Other Priority List Sites That May Require State Funds				
22	Carolina Tank Cleaning	Greensboro	Guilford	Petroleum sludge disposal/Soil/Lead, volatile and semivolatile organic compounds
109	Guyton Battery	Chadboourn	Columbus	Battery lead plate recovery/Soil/Lead
95	Highway 801 Barber	Barber	Rowan	Battery lead plate recovery/Soil/Lead
13	J Street Flyash Disposal Site	Erwin	Harnett	Flyash disposal - residential/Soil (estimated 17,000 tons)/Cadmium, zinc
135	Keener Landfill	Clinton	Sampson	County landfill/Soil/Pesticides
8	McRae Street Landfill	Wilmington	New Hanover	Landfill/Groundwater and surface water/Organics, metals, pesticides
136	Meadowlark Soaring School	Whitsett	Guilford	Cropdusting/Soil/Pesticides
144	North State Chemicals	Greensboro	Guilford	Industrial waste and solvent recovery/Soil/Metals, organic solvents
64	Old Beaufort Landfill	Washington	Beaufort	Landfill/Groundwater/Organic compunds
98	Peele Pesticide Disposal	Clayton	Johnston	Pesticide disposal/Soil (estimated 970 tons)/Arsenic and organic pesticides
52	S and S Metals	Gold Hill	Cabarrus	Aluminum recycling/Soil, surface water, sediments/Metals, solvents, caustic wastes
110	Tri-County Airport	Aulander	Hertford	Cropdusting/Soil/Pesticides
108	Union Camp Corporation	Smithfield	Johnston	Wood preserving/Soil/Pentachlorophenol, phenylmercuric acetate

Table 7-1 (continued)
North Carolina Priority List Sites That Require State Funds and Other Priority List Sites That May Require State Funds

Priority Sites That Require State Funding				
Priority	Site Name	Municipality	County	Site Type/Media/Contaminants
113	Voice of America Relay Station	Greenville	Pitt	Burial of pesticide waste/Soil (estimated 2,472 tons)/Pesticides and fertilizers

Source: North Carolina Department of Environment Health, and Natural Resources; Division of Solid Waste Management, Annual Report to the North Carolina General Assembly, February 1995.

Table 7-2, at the end of this chapter, presents the remainder of the sites on the priority list in the order in which they are ranked. It is unknown whether remedial activity at these sites is ongoing or only in the study phase. Once remedial activity at a site has been completed, the site is deleted from the priority list.

7.3 The Market at Abandoned Sites Managed Under the Federal Superfund Program

EPA has listed 23 sites in North Carolina on the NPL. Table 7-3 presents summary information from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database on the status of NPL sites in North Carolina.

Table 7-3
Number of Sites and Operable Units at North Carolina NPL Sites

Phase of Activity[a]	Number of Sites[b]	Number of Operable Units
Pre-remedial	6	8
Remedial	17	55

Source: Data as of May 1995 from EPA CERCLIS database; see Chapter 1 for a detailed description of the data sources.

[a] Sites with pre-remedial activities are sites where remedial design and construction have not yet begun, although the remedy may have been chosen. These sites, especially the pre-remedial sites still in the investigation phase, present long-term opportunities for vendors. Sites with remedial activities are sites where remedial design has begun and construction might not have begun. Where technologies have been selected but no vendor has been chosen, a site may present a short-term business opportunity.

[b] A site may have more than one operable unit in each phase, so operable units may be counted more than once.

Table 7-4, at the end of this chapter, lists information from the CERCLIS database about 15 sites and 31 OUs at which remediation activities have not yet begun. Those sites and OUs are of the greatest interest to technology vendors; technologies themselves may have been selected, but not vendors of those

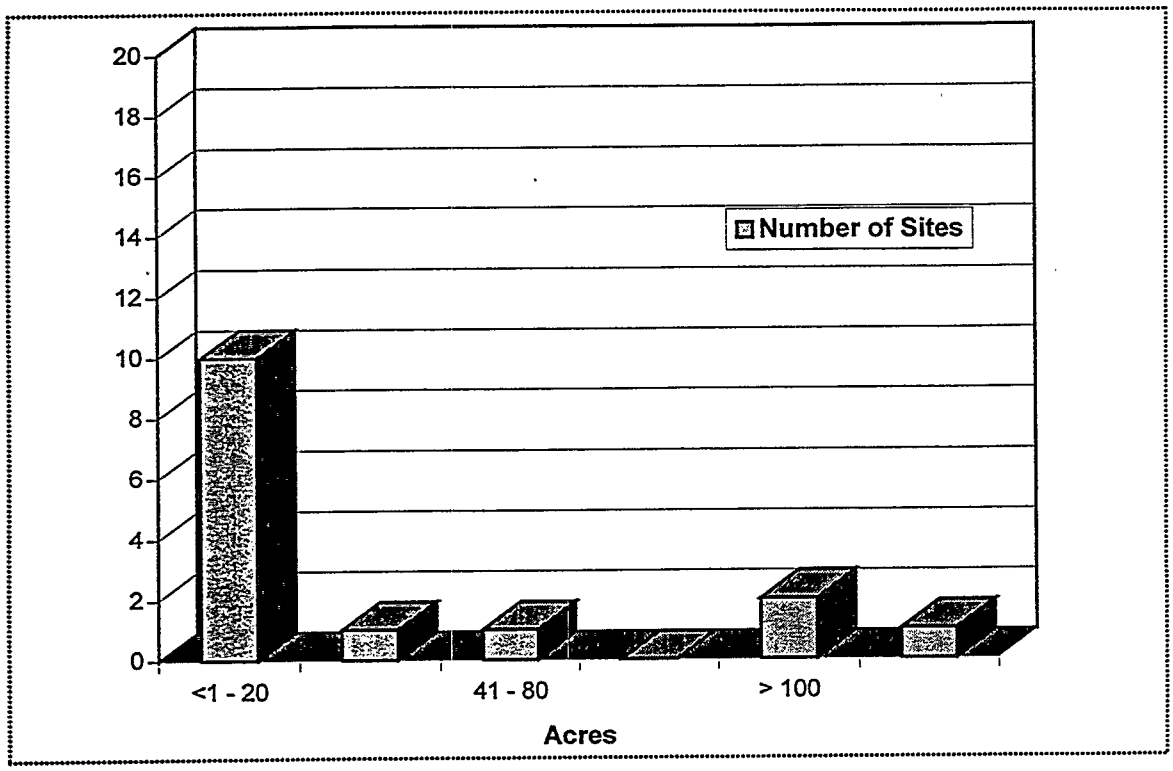
technologies. Review of NPL site summaries indicates that there is contamination by volatile organic compounds (VOC) in both the soil and the groundwater at the majority of the sites. At many sites, there is contamination with metals in groundwater and surface water.

Contamination with pesticides and herbicides also is present at many sites. The presence of PCBs also is reported in several cases. The sizes of the contaminated areas range from 1 acre to more than 100,000 acres. Figure 7-3 presents data on the distribution of sizes of NPL sites in North Carolina. Ten of the NPL sites in the State are between 1 and 20 acres in size. Technologies selected for use at the 23 sites include air stripping, biodegradation and bioremediation, soil aeration, and soil vapor extraction. It should be noted that although a technology may have been chosen for a particular site or OU, in many cases the specific vendors have yet to be chosen. Minimal data were available on the volumes of contaminated soil or groundwater present at the various sites.

7.4 The Market at RCRA Corrective Action Sites

Data from the Resource Conservation Recovery Information System (RCRIS) database indicate that there are 72 RCRA facilities in the State. Five RCRA facilities are currently required to perform CMS. The number of facilities with CMS imposed is not a direct subset of RCRA treatment, storage, and disposal (TSD) facilities, instead it is a subset of TSD facilities and hazardous waste generators. While TSD facilities are statutorily required to address corrective action, EPA has discretionary authority to impose corrective action on generators. In two cases, the entire facility is within the scope of a CMS. It is likely that, at those facilities, several different problems have been identified that indicate a need for CMS activity for the entire facility.

Figure 7-3
NPL Site Size Distribution for the State of North Carolina



In addition, 31 facilities are under a requirement to conduct a RCRA facility investigation (RFI). The number of facilities with an RFI imposed is not a direct subset of RCRA TSD facilities, instead it is a subset of TSD facilities and hazardous waste generators. While TSD facilities are statutorily required to address corrective action, EPA has discretionary authority to impose corrective action on generators. As discussed in Section 1.2, these facilities may also provide either a long-term or near-term opportunity where no CMS is necessary to begin corrective action or corrective activity begins in accordance with the stabilization initiative.

No data were available in RCRIS to identify the contaminants of concern or the media contaminated at the RCRA sites in the State. However, in some cases, the name of the facility can provide a general indication of the problems likely to be present there. All six facilities currently undergoing corrective action are chemical or manufacturing plants. Two SWMUs at two facilities are identified as landfills. In general, information available was insufficient to support identification of actual contaminants at the RCRA

facilities. Information also was insufficient to support identification of specific media contaminated; however, contamination of soil can be assumed at all the facilities.

7.5 The Market at UST Sites Managed By the State

The DEHNR administers the State UST program. North Carolina ranks third in the number of active tanks in Region 4. There are 41,942 active tanks in the State. Active tanks are defined as tanks still in service (EPA 1993). Table 7-6 presents data on the number of USTs in North Carolina. As of March 31, 1996, the EPA Office of Underground Storage Tanks (OUST) had identified 937 leaking tanks in North Carolina at which cleanup had yet to be initiated. That number represents the difference between the two data elements "confirmed releases" and "cleanups initiated." Cleanup at USTs with soil contamination usually are completed within 6 months to 2 years after the site has been identified. Cleanup at USTs with groundwater contamination usually are completed within 2 to 5 years after the site has been identified. Therefore, the numbers of USTs identified as opportunities therefore will change rapidly.

Table 7-6
Underground Storage Tank Corrective Action Measures in North Carolina as of the First Half of FY 1996

Active Tanks	Tanks Closed	Confirmed Releases	Cleanups Initiated	Cleanups Completed	Cleanups Not Yet Initiated
41,942	50,619	18,474	17,537	12,254	937

Source: EPA Office of Underground Storage Tanks Semi-Annual Activity Report, for the First Half of Fiscal Year 1996 (ending March 31, 1996)

In national studies of USTs performed by EPA in 1991 and 1992, it was found that the majority, or about 87 percent of the tanks, are used to manage gasoline or diesel fuel, kerosene, or heating oil. Of the remaining USTs, 11 percent manage other materials and wastes, such as used oil (4 percent), hazardous material (2 percent), and other material (5 percent) or are empty (2 percent). The majority of the contamination problems are related to the contamination of soils and groundwater with petroleum products that contain VOCs and semivolatile organic compounds (SVOC).

7.6 The Market at Federal Facility Sites in North Carolina

Although there are no Department of Energy (DOE) sites in North Carolina, there are 13 operational or closing DoD installations and FUDS located in the State. There are 206 active sites at the DoD installations, 144 of which have future remediation planned. Active sites are those at which some form of remediation activity is planned or underway. The total number of sites to be remediated may exceed that figure because, DoD typically does not plan remediation at a site until at least the RI/FS has been completed.

The *Defense Environmental Restoration Program Annual Report to Congress for 1994* indicates that a total of $3.9 million is estimated to be needed through the year 2009 in all phases of cleanup at the 13 installations. Facilities having the largest allocations of funds are Marine Corps Base (MCB) Camp LeJeune ($166 million) and Marine Corps Air Station (MCAS) Cherry Point ($138 million). Many of the active sites identified at the 13 installations either are undergoing or are scheduled to undergo an RI/FS and are, therefore, at a relatively early stage of the remediation process.

The majority of the contaminants at the sites at which remediation currently is planned fall into one of three broad categories: petroleum, oil, and lubricants (POL); VOCs; and metals. Those contaminants are found in the soil at all the sites and in the groundwater in a large percentage of the sites. Data on volumes of soil and groundwater to be treated are not available. Table 7-7 provides information on the individual installations and sites subject to remediation at those installations. Cleanup already may be underway at other sites; such sites have not been included in the total because it is unlikely that they will afford opportunity for vendors of innovative technologies. Of the DoD sites in North Carolina, two installations are listed on the NPL.

Table 7-7
DoD Installations and Sites in North Carolina

Name and Outyear Funding ($000)	Federal Facility Identification Number	Codes[1]	Number of Sites at Which Cleanup is Planned
Camp Lejeune Marine Corps Base Outyear Funding FY95-2009 $166,807	NC417302258000	A,N	55

Table 7-7
DoD Installations and Sites in North Carolina

Name and Outyear Funding ($000)	Federal Facility Identification Number	Codes[1]	Number of Sites at Which Cleanup is Planned
Charlotte Naval Ammunition Depot Outyear Funding FY95-2008 $5,331	NC49799F490000	F	5
Cherry Point Marine Corps Air Station Outyear Funding FY95-2007 $138,891	NC417302726100	A,N	55
Fort Bragg Outyear Funding FY95-2005 $24,294	NC421002012100	A	5
Laurinburg-Maxton Air Base Outyear Funding FY95-2003 $5,971	NC49799F482900	F	4
New Hanover County Airport Outyear Funding FY95-1999 $3,080	NC49799F483500	N,F	3
Pope Air Force Base Outyear Funding FY95-2009 $20,446	NC457212447500	A	5
Seymour Johnson Air Force Base Outyear Funding FY95-2003 $13,587	NC457212447400	A	5
Tarheel Army Missile Plant Outyear Funding FY95-2002 $2,915	NC421002187400	A	1
Camp Butner Training Camp Outyear Funding FY95-2006 $3,745	NC49799F482700	F	3
Camp Fort Davis Outyear Funding FY95-2007 $4,033	NC49799F482800	F	3
Stallings Air Base Outyear Funding FY95-2004 $1,489	NC49799F678900	F	3
Weeksville Naval Air Facility Outyear Funding FY95-2002 $3,665	NC49799F491100	F	2

Source: *Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994*

[1] Codes:
A = The installation is currently operational or on the BRAC list, and cleanup is covered by DERA or BRAC funds
F = The installation is no longer active and is managed by the FUDS Branch
N = The site is listed on the final National Priorities List

7.7 Further Market Information for North Carolina

A vendor that wishes to obtain information about sites in North Carolina that are managed by EPA may write to:

U.S. Environmental Protection Agency
Region 4
345 Courtland Street, NE
Atlanta, GA 30365

For information on RCRA facilities, the envelope should be marked to the attention of the Freedom of Information Act Officer, Office of RCRA and Federal Facilities. For information on CERCLA facilities in North Carolina, the envelope should be marked to the attention of the Freedom of Information Act Officer, North Superfund Remedial Branch. The requestor must pay a reproduction and processing fee, which is based on the volume of information provided. For more information on USTs handled by EPA, vendors may contact the EPA Region 4 UST program manager:

John Mason
U.S. EPA
345 Courtland Street, NE
Mail Code 4WM-GWP-15
Atlanta, GA 30365

DEHNR's public information office is a good source of information about the hazardous waste sites that DEHNR manages. A vendor that wishes to bid on any State contract must request a vendor application from:

North Carolina Department of Administration
Vendor Application Coordinator
116 West Jones Street
Raleigh, NC 27603-8002
Telephone: (919) 733-3581

If the application is approved, a vendor may subscribe to the North Carolina Purchase Directory, which is published twice each month. The directory contains a list of all work over $10,000 administered by the State and all annual contracts issued by the State. The annual subscription fee for the directory is $40. Contact the Department of Administration office to obtain a subscription form.

For environmental services, the State usually requests proposals from vendors. All environmental proposals should be sent to:

Doris Strickland
DEHNR
P.O. Box 27687
Raleigh, NC 27611
(919) 715-3893

For information on USTs contact:

North Carolina Pollution Control Branch
Division of Environmental Management
Department of Environmental Health and Natural Resources
441 N. Harrington St.
Raleigh, NC 27603
(919) 733-8486

For information about DOE sites or any of DOE's technology development assistance programs, vendors may contact:

DOE's Center for Environmental Management Information
470 L'Enfant Plaza East
Suite 7112
Washington, DC 20024
(800) 736-3282

The U.S. Department of Defense (DoD) does not have a single point of contact that handles all of DoD's environmental restoration initiatives, site-level information, and technology programs. The Defense Environmental Restoration Program Annual Report to Congress for FY 1995 contains detailed information on environmental restoration accomplishments and schedules at DoD installations world-wide. This report is available on the Internet at the DoD Environmental Restoration home page at:

http://www.dtic.mil/envirodod/

The home page also provides links to other internet sites that pertain to DoD environmental restoration activities.

Listed below are the regional offices of the DEHNR. Information includes name of office, address, telephone numbers, and counties the regional office serves.

Asheville Regional Office (704) 251-6208
59 Woodfin Street
P.O. Box 379
Asheville, NC 28801
Counties: Avery, Buncombe, Burke, Caldwell, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania, and Yancey

Fayetteville Regional Office (910) 486-1541
Wachovia Building
225 Green Street, Suite 714
Fayetteville, NC 28301-5094
Counties: Anson, Bladen, Cumberland, Harnett, Hoke, Montgomery, Moore, Richmond, Sampson, and Scotland

Mooresville Regional Office (704) 663-1699
919 North Main Street
P.O. Box 950
Mooresville, NC 28115
Counties: Alexander, Cabarrus, Catawba, Cleveland, Gaston, Iredell, Lincoln, Mecklenburg, Rowan, Stanly, and Union

Raleigh Regional Office (919) 571-4718
3800 Barrett Drive
P.O. Box 27687
Raleigh, NC 27687
Counties: Chatham, Durham, Edgecombe, Franklin, Granville, Halifax, Johnston, Lee, Nash, Northampton, Orange, Person, Vance, Wake, Warren, and Wilson

Washington Regional Office (919) 946-6481
1424 Carolina Avenue
Washington, NC 27889-314
Counties: Beaufort, Bertie, Camden, Chowan, Craven, Currituck, Dare, Gates, Greene, Hertford, Hyde, Jones, Lenoir, Martin, Pamlico, Pasquotank, Perquimans, Pitt, Tyrrell, Washington, and Wayne

Wilmington Regional Office (919) 395-3900
127 Cardinal Drive Extension
Wilmington, NC 28405-3845
Counties: Brunswick, Carteret, Columbus, Duplin, New Hanover, Onslow, and Pender

Winston-Salem Regional Office (910) 771-4600
585 Waughtown Street
Winston-Salem, NC 27107-2241
Counties: Alamance, Alleghany, Ashe, Caswell, Davidson, Davie, Forsyth, Guilford, Randolph, Rockingham, Stokes, Surry, Watauga, Wilkes, and Yadkin

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Table 7-2
Other Sites on the North Carolina Priority List at Which Remediation Activities May Be Required

Priority Sites at Which Remediation Activities May Be Required			
Priority	**Site Name and Location**	**Media**	**Contaminants**
1	HOSKINS MILL 201 HOSKINS MILL LANE CHARLOTTE, NC 28208-1456	Soil, surface water	Organics, metals
3	WATTS REGULATOR-DAVIS PROPERTY OLD BALL PARK ROAD SPINDALE, NC	Soil, groundwater	Metals
4	CAROKNIT SMITH CREEK PARKWAY & 23RD STREET WILMINGTON, NC	Soil, groundwater	Organics, metals
5	CAROLINA CREOSOTING EASTBROOK ROAD LELAND, NC	Soil, groundwater	Organics
6	DURACELL BATTERY TECH 305 US HIGHWAY 64 EAST LEXINGTON, NC 27292-2039	Soil, groundwater	Organics, metals
9	AMERICAN THREAD SEVIER PLANT US HWY 221 9 MILES WEST OF MARION MARION, NC 28752	Soil, groundwater	Organics, metals
10	MANVILLE CORPORATION LOMBARD STREET MAXTON, NC	Soil, groundwater, surface water	Organics, metals, inorganics
11	HOLDING POND FOR WASTE USS 500 BROOME ROAD GREENSBORO, NC 27406-3714	Surface water	Organics, metals, pesticides
12	KNOB CREEK FLYASH DISPOSAL RTE 1540 BREVARD, NC 28712	Soil	Metals
14	HARWELL ROAD SEPTIC PIT RR 4 GASTONIA, NC 28056	Groundwater	Organics
15	CUSTOM PROCESSING & MANUFACTURING 1110 SURRETT DRIVE HIGH POINT, NC 27260-8822	Soil, groundwater	Organics, metals
16	CHATHAM MANUFACTURING COMPANY EAST MAIN STREET HIGH POINT, NC	Soil, groundwater	Organics, metals
17	SCM CORP GLIDDEN COATINGS & RESINS 3926 GLENWOOD DRIVE CHARLOTTE, NC 28208-2943	Soil, groundwater	Organics, metals

Table 7-2 (continued)
Other Sites on the North Carolina Priority List at Which Remediation Activities May Be Required

Priority Sites at Which Remediation Activities May Be Required			
Priority	Site Name and Location	Media	Contaminants
18	STEELCASE INCORPORATED CANE CREEK INDUSTRIAL PARK FLETCHER, NC 28732	Soil, groundwater	Organics, metals
19	BUXTON DUMP WEST OF BACK ROAD BUXTON, NC	Soil, groundwater	Organics, metals
20	KINSTON DEMOLITION LANDFILL DAVIE STREET KINSTON, NC	Soil	Organics
21	WHITE FURNITURE COMPANY 201 EAST CORNER STREET MEBANE, NC 27302	Soil, surface water	Organics, metals
22	FAYETTEVILLE COAL GAS RAY AVENUE FAYETTEVILLE, NC 28052	Soil	Organics
23	MOBIL OIL 3335 RIVER ROAD WILMINGTON, NC 28412-6243	Soil, groundwater	Organics, metals
24	NEW HAVEN DRIVE GASTONIA, NC 28052	Groundwater	Organics
26	OLD ROCKY MOUNT AIRPORT US 301 BUSINESS ROCKY MOUNT, NC	Soil	Pesticides
27	LEE'S MOTOR WORKS RR 4 BOX 19A GASTONIA, NC 28056	Soil, groundwater	Organics
29	SWEETEN CREEK CRUM SITE BROMLEY 35 SWEETEN CREEK ROAD ASHEVILLE, NC 28803-2318	Soil	Metals
31	OLD WESTERN NC FAIRGROUNDS S.R. 1829 & S.R. 1819 HENDERSONVILLE, NC 28726	Soil, groundwater	Organics
32	WEYERHAEUSER COMPANY S.R. 1565 PLYMOUTH, NC 27962	Soil	Metals
33	WINSTON CONTAINER COMPANY 4732 MORRIS FIELD DRIVE CHARLOTTE, NC 28208-5841	Soil	Metals, organics
34	CAROLINA POWER & LIGHT CUMBERLAND ROAD & OWEN DRIVE FAYETTEVILLE, NC	Soil, groundwater	Organics

Table 7-2 (continued)
Other Sites on the North Carolina Priority List
at Which Remediation Activities May Be Required

Priority Sites at Which Remediation Activities May Be Required			
Priority	**Site Name and Location**	**Media**	**Contaminants**
36	MONARCH FURNITURE 300 SCIENTIFIC STREET JAMESTOWN, NC 27282-9501	Soil, groundwater	Metals
37	ASHEBORO LANDFILL OFF OLD US 64 ASHEBORO, NC 27203	Soil, surface water	Metals
38	RHODERA DR WELLS 2126 RHODERIA DRIVE MATTHEWS, NC 28105-5918	Soil, groundwater	Organics, metals
39	SOUTHERN WOOD PIEDMONT COMPANY S.R. 2139 GULF, NC 27256	Soil, groundwater, surface water	Organics
40	TRITON INC. 1610 WARD BOULEVARD SOUTH WILSON, NC 27893	Groundwater	Metals
41	DE POORTERE CORPORATION 240 CASTLE HAYNE ROAD WILMINGTON, NC 28401-2800	Soil	Organics, metals
42	A.C. LAWRENCE 100 WEST MAIN STREET HAZELWOOD, NC 28738-2022	Soil, groundwater	Organics, metals
43	DAVIS PARK ROAD TCE SITE 2307 DAVIS PARK ROAD GASTONIA, NC 28052-4463	Soil, groundwater	Organics
44	UNION CARBIDE 5400 HOVIS ROAD CHARLOTTE, NC 28208-1244	Soil, groundwater	Organics, metals
45	REASOR CHEMICAL NC 132 CASTLE HAYNE, NC 28429	Surface water	Organics
46	UNION CARBIDE 800 ALBEMARLE ROAD ASHEBORO, NC 27203-6263	Soil, groundwater	Organics, metals
47	CAROLINA ALUMINUM S.R. 1125 ROPER, NC 27970	Soil	Organics
48	CHERRY MOUNTAIN STREETDRUM SITE 602 CHERRY MOUNTAIN STREET FOREST CITY, NC 28043-3013	Soil	Metals

Table 7-2 (continued)
Other Sites on the North Carolina Priority List at Which Remediation Activities May Be Required

Priority Sites at Which Remediation Activities May Be Required			
Priority	Site Name and Location	Media	Contaminants
49	THIELE-ENGDAHL INCORPORATED 1100 FAIRCHILD ROAD WINSTON-SALEM, NC 27105-4528	Soil (estimated 2 to 3 tons)	Organics, metals
50	R.P. SCHRER 2021 EAST ROOSEVELT MONROE, NC	Soil	Organics
51	FORK SWAMP GRADY WHITE BOAT AYDEN, NC	Soil	Organics
53	ATHOL MANUFACTURING COMPANY C AND 22nd STREETS BUTNER, NC	Soil, surface water	Organics, metals
54	AYCOCK PROPERTY SRs 1162 AND 1103 WILSON, NC	Soil, groundwater	Pesticides
55	CTS OF ASHEVILLE, INC. MILLS GAP ROAD SKYLAND, NC	Soil, surface water or sediment	Organics, metals
56	KERR MCGEE CORPORATION NAVASSA, NC	Soil (estimated 1,667 tons)	Organics
57	GENERAL INSTRUMENT CORP FAIRVIEW, NC	Soil	Metals
58	RANGE ROAD BURN SITE BUTNER, NC	Soil	Organics, metals
59	CHEMICAL LEAMAN TANK LINES INC 6202 WEST MARKET STREET GREENSBORO, NC 27409-2038	Groundwater	Organics
60	GREENVILLE CITY LANDFILL 5TH STREET& CEMETARY ROAD GREENVILLE, NC 27834	Soil	Metals
61	GLEN RAVEN MILLS HWY 19 EAST BURNSVILLE, NC 28714	Soil, groundwater	Organics
63	APPLIED RESEARCH GROUP 2221 NORTH DAVIDSON STREET CHARLOTTE, NC 28205-1829	Soil, groundwater	Metals, organics
65	REA MAGNET WIRE COMPANY OLD LAUREL CHURCH HILL ROAD LAURINBURG, NC 28352	Surface water, soil	Organics
66	FMC NIAGARA PESTICIDES AYDEN, NC	Soil	Organics, pesticides

Table 7-2 (continued)
Other Sites on the North Carolina Priority List
at Which Remediation Activities May Be Required

Priority Sites at Which Remediation Activities May Be Required			
Priority	**Site Name and Location**	**Media**	**Contaminants**
67	ABEX CORPORATION US 29 SOUTH SALISBURY, NC	Soil, groundwater	Organics
69	REINCO CHEMICAL COMPANY EAST 11TH STREET ROANOKE RAPIDS, NC 27870	Soil, groundwater	Organics
70	DURHAM ANIMAL CLINIC 4306 NORTH ROXBORO ROAD DURHAM, NC 27704-1828	Groundwater	Organics
71	HOOVER MACHINE SHOP RR 3 GASTONIA, NC 28056	Groundwater	Organics
72	FASCO CONTROLS CORPORATION S.R. 1926 SHELBY, NC 28150	Soil	Organics, metals
73	DAYCO LANDFILL S.R. 1134 WAYNESVILLE, NC 28786	Groundwater	Organics
75	ACADEMY STEEL DRUM 3212 RIDGE ROAD MATTHEWS, NC 28105-4859	Soil, surface water or sediments	Organics, metals
76	NEW AGE FURNITURE PROSPECT INDUSTRIAL PARK LEXINGTON, NC	Soil	Metals
77	ROWE CORP PROPERTY BOULIGNY SITE 1123 S CHURCH STREET CHARLOTTE, NC 28203-4003	Soil, groundwater	Metals
78	WHITE'S GRAVEL PIT 1515 HIGHWAY 49 SOUTH CONCORD, NC 28027-8915	Soil	Metals
79	WARD TRANSFORMER 123 MOUNT VERNON CHURCH ROAD RALEIGH, NC 27614	Surface water	Organics
80	BURLINGTON INDUSTRIES INC 215 DRUMMOND STREET KERNERSVILLE, NC 27284-2849	Soil, groundwater	Organics
81	FLEMING LABORATORIES 2205 THRIFT ROAD CHARLOTTE, NC 28208-4446	Soil, groundwater	Organics

Table 7-2 (continued)
Other Sites on the North Carolina Priority List at Which Remediation Activities May Be Required

Priority Sites at Which Remediation Activities May Be Required			
Priority	Site Name and Location	Media	Contaminants
82	ANILOX ROLL COMPANY 4840 WALLACE NEEL ROAD CHARLOTTE, NC 28208-8619	Soil	Metals
83	PARKER INDUSTRIES 4867 RHONEY ROAD CONNELLYS SPRINGS, NC 28612-8142	Soil, groundwater	Organics
85	UNIVERSITY OF NC ARPT WASTE DISP AIRPORT ROAD CHAPEL HILL, NC 27599	Soil, groundwater	Organics, metals, acids, bases, inorganics, pesticides
86	CHEMICAL & SOLVENTS INC 2804 PATTERSON STREET GREENSBORO, NC 27407-2319	Soil	Organics
87	SUN CHEM CORPORATION GPI DIV 2400 OLD LEXINGTON ROAD WINSTON-SALEM, NC 27107-3236	Soil	Organics, metals
88	WEYERHAUSER HWY 308 WEST LEWISTON, NC 27849	Soil	Organics
89	UNIVERSITY OF NC OLD SANITARY LANDFILL AIRPORT ROAD CHAPEL HILL, NC 27599	Soil	Organics, metals, acids, bases, inorganics, pesticides
90	EATON CORPORATION HWY 501 SOUTH ROXBORO, NC 27573	Groundwater	Organics
91	FLORIDA STEEL CORPORATION LAKEVIEW ROAD CHARLOTTE, NC	Soil	Metals
92	SOUTHCHEM LANDFIL 750 EAST MARKHAM AVENUE DURHAM, NC 27701-1445	Soil	Organics
93	GAITHER TRANSOU PROPERTY 1202 GUILFORD COLLEGE ROAD GREENSBORO, NC	Soil	Organics
94	ETHAN ALLEN INC BLUE RIDGE DIV COMMERCE STREET OLD FORT, NC 28762	Soil	Organics
96	QUORUM KNITTING 1 BALCRANK WAY WEAVERVILLE, NC 28787	Soil, groundwater	Organics

Table 7-2 (continued)
Other Sites on the North Carolina Priority List
at Which Remediation Activities May Be Required

Priority Sites at Which Remediation Activities May Be Required			
Priority	**Site Name and Location**	**Media**	**Contaminants**
97	HOLLINSWORTH PROPERTY BROADFOOT AVENUE & CLARK STREET FAYETTEVILLE, NC	Soil	Pesticides, metals
99	ESB INC EXIDE CORPORATION 2510 NORTH BOULEVARD RALEIGH, NC 27604	Soil	Metals
100	C&T REFINERY 5000 SOUTH BOULEVARD CHARLOTTE, NC 28217-2700	Soil	Organics
101	CROWN CENTRAL PETROLEUM CORP OLD MT HOLLY ROAD PAW CREEK, NC 28130	Soil	Organics
102	PHILLIPS PLATING US HWY 17 NORTH BRIDGETON, NC 28519	Soil, surface water	Metals
103	REICHHOLD CHEMICAL INC DURMAN ROAD PINEVILLE, NC 28134	Soil	Organics
105	CAROLINA WOOD PRESERVING COMPANY EAST 16TH STREET SCOTLAND NECK, NC 27874	Soil	Organics, metals
106	MALLINKRODT, INC. US 1 NORTH RALEIGH, NC	Soil	Organics, acids, bases
107	HARTSOE BATTERY 2513 LINDA AVENUE KANNAPOLIS, NC 28083-9108	Soil	Metals
111	FOAMEX/REEVES BROTHERS HWY 115 CARNELIUS, NC	Soil, groundwater	Organics
112	PITT COUNTY UTILITY LANDFILL PORT TERMINAL ROAD GREENVILLE, NC 27828	Soil	Metals
114	REEVES BROTHERS RAILROAD AVENUE RUTHERFORDTON, NC	Soil	Organics
115	CIBA-GEIGY WESTINGHOUSE BOULEVARD CHARLOTTE, NC	Soil, groundwater	Organics

Table 7-2 (continued)
Other Sites on the North Carolina Priority List
at Which Remediation Activities May Be Required

Priority Sites at Which Remediation Activities May Be Required			
Priority	Site Name and Location	Media	Contaminants
116	MOORES COMPANY US 1 BUSINESS & S.R. 1001 HENDERSON, NC	Soil	Organics
117	COASTAL CHEMICAL CORP HWY 42 EAST CLAYTON, NC 27520	Soil	Pesticides
118	CAROLAWN CO. 1426 WEST MOUNTAIN STREET KERNERSVILLE, NC 27284-2132	Soil, groundwater	Organics
119	US 70 DRUM DUMP HWY 70 2 MILES EAST OF BURKE GLEN ALPINE, NC 28628	Soil	Organics
120	GURLEY PESTICIDE BURIAL PRESTON STREET SELMA, NC 27576	Soil	Pesticides
121	DAUGHERTY CHEMICAL CO 307 WALKER STREET DURHAM, NC 27701-4154	Soil	Metals, inorganics
122	HURT RESIDENCE US 64 SW OF MORGANTON MORGANTON, NC 28655	Soil	Organics
123	SORRELL LANDFILL S.R. 1303 APEX, NC 27502	Soil	Pesticides
124	3880 IMMANUEL ROAD GREENSBORO, NC 27407-3315	Groundwater	Organics
125	THOMASVILLE FURNITURE INDS LENOIR BLOWING ROCK HWY LENOIR, NC 28645	Soil	Organics
126	BUCKHORN PESTICIDES HWY 42 & HWY 581 BUCKHORN, NC 27893	Soil	Organics, pesticides
127	STRUCTURAL WOOD PRESERVING CO. HWY 22 COLERIDGE, NC 27234	Soil, groundwater, surface water	Metals
128	TARTAN MARINE NC 77 AND SR 2032 HAMLET, NC	Soil	Metals
129	ACE CHEMICAL CORPORATION 9801 SOUTH TRYON STREET CHARLOTTE, NC 28273-6505	Soil, groundwater	Organics

Table 7-2 (continued)
Other Sites on the North Carolina Priority List
at Which Remediation Activities May Be Required

Priority Sites at Which Remediation Activities May Be Required			
Priority	Site Name and Location	Media	Contaminants
130	STANLEY CASE GOODS (FORMER) HWY 211 WEST END, NC 27376	Groundwater	Organics
131	SIR WALTER GUN CLUB US 64 EAST RALEIGH, NC	Soil	Organics, metals
132	GRANT CREEK WWTP CRUSE ROAD SALISBURY, NC 28146	Soil	Organics
133	EC MANUFACTURING 413 NORTH POLK STREET RINEVILLE, NC	Soil	Metals
134	CORNING GLASS WORKS 310 NORTH COLLEGE ROAD WILMINGTON, NC 28405-3518	Soil	Organics
137	CORNELL-DUBILIER ELECTRONICS 2652 DALRYMPLE STREET SANFORD, NC 27330-6153	Soil, groundwater	Organics
138	ALLIANCE CAROLINA TOOL & MOLD GLENN BRIDGE ROAD ARDEN, NC 28704	Groundwater	Organics
139	BURLINGTON HOME CHAIR HWY 268 RONDA, NC	Soil	Organics
140	GASTON COUNTY DYEING MACHINE CO HWY 27 EAST MOUNT HOLLY, NC 28120	Groundwater	Organics
141	GASTON COUNTY DYEING MACHINE CO 200 SOUTH MAIN STREET STANLEY, NC 28164-2011	Soil	Organics
142	HELENA CHEMICAL COMPANY DENNIS STREET ENFIELD, NC 27823	Soil	Organics
143	OWENS ILLINOIS OLD US 29 SPENCER, NC 28144	Soil	Metals
145	BURLINGTON FURNITURE ATOAH STREET ROBBINSVILLE, NC 28771	Soil	Organics

Table 7-2 (continued)
Other Sites on the North Carolina Priority List at Which Remediation Activities May Be Required

Priority Sites at Which Remediation Activities May Be Required			
Priority	Site Name and Location	Media	Contaminants
146	BURLINGTON INDUSTRIES INC US 1 NORTH RALEIGH, NC	Soil	Organics
147	BALFOUR ROAD BATTERY GRANITE QUARRY, NC 28072	Soil	Metals
148	BENDIX CORPORATION HWY 85 SALISBURY, NC 28144	Soil	Metals
149	MILAN YARD LANDFILL MILAN RR FAYETTEVILLE, NC 28301	Soil	Organics
150	HENSON LANDFILL US HWY 221 SOUTH FOREST CITY, NC 28139	Soil	Organics
151	WALKER DRUM DISPOSAL WYATTS GROVE CHURCH ROAD GOLD HILL, NC	Soil	Organics
152	SOUTHERN RESIN US INDUSTRIES INC 1510 DENTON ROAD THOMASVILLE, NC 27360-6314	Groundwater	Organics
153	BORDEN CHEMICAL 1411 INDUSTRIAL DRIVE FAYETTEVILLE, NC 28301-6396	Soil	Organics
154	BURLINGTON INDUSTRIES INC 6008 HIGH POINT ROAD GREENSBORO, NC 27407-7009	Soil	Organics
156	CLAYTON-MARCUS CO.,INC. HWY 127 NORTH BETHLEHEM, NC	Soil	Metals
157	MARSHALL MONEY BUCKET WASHING HWY 321 NORTH LENOIR, NC 28645	Soil	Organics
158	ALCOA BADIN LANDILL SR 1704 BADIN, NC	Soil, groundwater	Cyanide, organics, metals

Source: North Carolina Department of Environment Health, and Natural Resources; Division of Solid Waste Management, Annual Report to the North Carolina General Assembly, February 1995

Table 7-4
NPL Sites in North Carolina at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: ABC ONE HOUR CLEANERS NPL STATUS: Final					EPA ID: NCD024644494 SIZE: 1 Acre		ADDRESS: 2127 LE JEUNE BLVD, JACKSONVILLE, NC 28540 TYPE: Drycleaning Plants	
01	RIFS	(F)	9/30/95	Y	GW	NA	VOC	Air Stripping; Disposal of Residual; Monitoring
02	SOILS	(F)	10/30/95	Y	SO	NA	VOC	Soil Vapor Extraction
SITE NAME: ABERDEEN PESTICIDE DUMPS NPL STATUS: Final					EPA ID: NCD980843346 SIZE: 5 Acres		ADDRESS: OFF HWY 5 W, ABERDEEN, NC 28315 TYPE: Abandoned Former Pesticide Plants	
01	ABERDEEN PESTICIDE	(F/RP)	3/30/96	Y	AI; DB; GW; SD; SO; SW	123,933 cy	METALS; PESTICIDES/ HERBICIDES; VOC	Disposal of Residual; Solidification and Stabilization; Incineration with On-Site Disposal of Residual; Leachate Treatment; Off-Site Treatment; Thermal Treatment with On-Site Placement; Monitoring
03	ABERDEEN GW REMEDIATION	(F/RP)	10/1/95	Y	GW; SD; SW	NA	PESTICIDES	NA
04	FAIRWAY SIX	(F/RP)	10/1/95	Y (FS)	SO	NA	PESTICIDES	NA
05	MCIVER & ROUTE 211 GW	(RP)	3/14/98	Y	GW; SD; SW	NA	PESTICIDES	NA
SITE NAME: BENFIELD INDUSTRIES, INC NPL STATUS: Final					EPA ID: NCD981026479 SIZE: 35 Acres		ADDRESS: RICHLAND ST., HAZELWOOD, NC 28738 TYPE: Abandoned Former Chemical Plant	
01	RIFS START	(F)	6/30/95	Y	GW; SO	4,600 cy	METALS; PESTICIDES/ HERBICIDES; VOC	Soil Aeration; Biodegradation and Bioremediation; Disposal of Residual; Leachate Treatment; Steam Stripping; Pump and Treat at POTW with Discharge; Soil Cover

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund Financed	SR	PRP Lead Under State		

Table 7-4 (continued)
NPL Sites in North Carolina at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: BYPASS 601 GROUNDWATER CONTAMINATION				EPA ID: NCD044440303		ADDRESS: 440 HWY 29 NORTH, CONCORD, NC 28025		
NPL STATUS: Final				SIZE: 1 Acre		TYPE: Recycling Battery		
01	SOIL REMEDATION	(F)	12/31/96	Y	DB; SD; SO	57,719 cy	METALS; VOC; OTHER INORGANICS	Off-Site Treatment; Disposal of Residual; Surface Capping Only
02	SURROUNDINGS AREAS	(F/RP)	1/28/97	Y	DB; GW; MS; SD; SO	64,139 cy	METALS; OTHER INORGANICS; PCBS; VOC	Off-Site Treatment; Solidification and Stabilization; Air Stripping; Disposal of Residual; Precipitation; Pump and Treat at POTW with Discharge
SITE NAME: CAROLINA TRANSFORMER CO				EPA ID: NCD003188844		ADDRESS: HWY 301 N EASTERN BLVD, FAYETTEVILLE, NC 28301		
NPL STATUS: Final				SIZE: 2 Acres		TYPE: Abandoned Former Electrical Transformer Recycling Facility		
01	01	(F)	6/30/95	Y	DB; GW; SD; SO	11,150 cy	METALS; PCBS; PESTICIDES/ HERBICIDES; VOC; RADIOACTIVE MATERIALS	Off-Site Treatment; Disposal of Residual; Leachate Treatment; Precipitation; Monitoring; Solidification and Stabilization; Steam Stripping
SITE NAME: FOX INC (STATESVILLE PLANT)				EPA ID: NCD095458527		ADDRESS: 1620 W. FRONT ST., STATESVILLE, NC 28677		
NPL STATUS: Final				SIZE: 5 Acres		TYPE: Agricultural Chemicals (Organic & Inorganic)		
01	NA	(EP/F)	9/30/95	Y	GW	NA	METALS; PESTICIDES/ HERBICIDES; VOC	Disposal of Residual; Precipitation; Leachate Treatment; Pump and Treat at POTW with Discharge; Off-Site Treatment; Steam Stripping; Monitoring
02	ORGANICS GW CONTAMINATION	(F)	9/30/95	Y	GW	NA	PESTICIDES; VOCs	Pump and Treat
03	BURLINGTON GROUNDWATER	(RP/FE)	12/30/96	N	NA	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

Al	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund Financed	SR	PRP Lead Under State		

Table 7-4 (continued)
NPL Sites in North Carolina at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	OPERABLE UNIT (LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: FOX INC. (WASHINGTON PLANT) **NPL STATUS:** Final					**EPA ID:** NCD981475932 **SIZE:** 6 Acres		**ADDRESS:** GRIMES RD, WASHINGTON, NC 27889 **TYPE:** Abandoned; Former Agricultural Chemical Plant	
01	NA	(F)	9/30/95	Y	GW; SW	42,933 gal; 54,912 gal; 125,549 gal; 546,158 gal; 809,683 gal; 1,127,060 gal	METALS; PESTICIDES/ HERBICIDES; VOC	Air Stripping; Disposal of Residual; Precipitation; Leachate Treatment; Off-Site Treatment; Steam Stripping; Monitoring
SITE NAME: GEIGY CHEMICAL CORP. (ABERDEEN PLANT) **NPL STATUS:** Final					**EPA ID:** NCD981927502 **SIZE:** 1 Acre		**ADDRESS:** RT 211, 4MI WEST OF SR 2063, ABERDEEN, NC 28315 **TYPE:** Abandoned; Former Chemical Plant	
01	GEIGY CHEMICAL CORPORATION	(RP/FE)	3/30/95	Y	GW; SO	1,000 cy	PESTICIDES/ HERBICIDES; VOC	Disposal of Residual; Leachate Treatment; Off-Site Treatment; Recycling; Pump and Treat at POTW with Discharge
SITE NAME: JADCO-HUGHES FACILITY **NPL STATUS:** Final					**EPA ID:** NCD980729602 **SIZE:** 6 Acres		**ADDRESS:** NC HWY 2035, BELMONT, NC 28012 **TYPE:** Abandoned; Former Solvent Reclamation and Storage Facility	
01	RI/FS	(RP/FE)	12/30/94	Y	GW; SD; SO; SW	6,000 cy	VOC; METALS; PCBs	Air Stripping; Leachate Treatment; Pump and Treat at POTW with Discharge; Monitoring

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund Financed	SR	PRP Lead Under State		

Table 7-4 (continued)
NPL Sites in North Carolina at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	OPERABLE UNIT (LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: JFD ELECTRONICS/CHANNEL MASTER; NPL STATUS: Final				EPA ID: NCD122263825; SIZE: 5 Acres			ADDRESS: INDUSTRY DRIVE, OXFORD, NC 27565; TYPE: Antenna Manufacturer	
01	NA	(F/RP)	1/27/96	Y	GW; SL; SO	606,000 gal; 3,000 cy	METALS; OTHER INORGANICS; VOC	Air Stripping; Precipitation; Leachate Treatment; Solidification and Stabilization; Steam Stripping; Monitoring; Pump and Treat at POTW with Discharge; Surface Capping Only; Disposal of Residual; Thermal Treatment with On-Site Placement
SITE NAME: KOPPERS CO. INC. (MORRISVILLE PLANT); NPL STATUS: Final				EPA ID: NCD003200383; SIZE: 52 Acres			ADDRESS: HWY 54 W, MORRISVILLE, NC 27560; TYPE: Abandoned, Former Saw Mill, Glue-Laminated Wood Products	
01	NA	(RP/FE)	5/31/95	Y	GW; SO; SW	2,930 cy	PESTICIDES/ HERBICIDES; VOC	Disposal of Residual; Leachate Treatment; PH Neutralization, Other Neutralization; Off-Site Treatment; Steam Stripping; Monitoring; Incineration with On-Site Disposal of Residual; Pump and Treat at POTW with Discharge
SITE NAME: NATIONAL STARCH & CHEMICAL CORP; NPL STATUS: Final				EPA ID: NCD991278953; SIZE: 465 Acres			ADDRESS: CEDAR SPRINGS RD, SALISBURY, NC 28144; TYPE: Manufacturing Chemicals; Industrial Organic Chemicals	
03	SURFACE WATER/ NE TRIBUTARY	(RP/FE)	9/30/96	Y	GW; SD; SW	NA	METALS; VOC	Air Stripping
04	SOURCE CONTROL	(RP/FE)	9/30/96	Y	SO	NA	METALS; VOC	NA
SITE NAME: NC STATE UNIVERSITY (LOT 86 FARM UNIT #1); NPL STATUS: Final				EPA ID: NCD980557656; SIZE: 2 Acres			ADDRESS: CARTER-FINLEY STADIUM, RALEIGH, NC 27607; TYPE: Misc. Laboratory	
01	NA	(F/RP)	5/1/97	Y	GW; SO	NA	METALS; VOC	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

Al	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund Financed	SR	PRP Lead Under State		

Table 7-4 (continued)
NPL Sites in North Carolina at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: NEW HANOVER CNTY AIRPORT BURN PIT NPL STATUS: Final					EPA ID: NCD981021157 SIZE: NA		ADDRESS: GARDNER DRIVE, WILMINGTON, NC 28401 TYPE: Burn Pit, Fire Training Area	
01	NA	(EP/F/RP)	3/31/96	Y	GW	9,700,000 gal; 97,000,000 gal	VOC; METALS	Air Stripping; Pump and Treat at POTW with Discharge; Off-Site Treatment; ; Monitoring
SITE NAME: USMC CAMP LEJEUNE NPL STATUS: Final					EPA ID: NC6170022580 SIZE: 108,800 Acres		ADDRESS: NC HWY 24 & US HWY 16, CAMP LEJEUNE, NC 28542 TYPE: Military	
05	SITE 74, 41	(FF)	9/30/96	N	GW; OT; SD; SO; SW	NA	PESTICIDES	NA
06	SITE 2	(FF)	12/30/95	Y	GW; SD; SO; SW	NA	NA	NA
07	SITES 36,43,44,54,86	(FF)	9/30/97	N	DB; GW; SD; SO; ST; SW	NA	NA	NA
08	SITES 1, 28,& 30	(FF)	3/30/97	N	GW; SD; SL; SO; SW	NA	NA	NA
09	SITE 16	(FF)	3/30/97	N	DB; GW; SD; SO; ST; SW	NA	NA	NA
10	SITE 73, 65	(FF)	12/31/97	N	DB; GW; SD; SO; ST; SW	NA	NA	NA
11	SITE 35	(FF)	9/30/96	N	GW; SD; SO; SW	2,500 SF tank farm	NA	NA
12	SITE 7 & 80	(FF)	3/30/97	N	SO	5 Acres, 1 Acre	PCBs; PESTICIDES	NA
13	SITE 3	(FF)	3/30/97	N	SO	NA	PAH	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

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DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund Financed	SR	PRP Lead Under State		

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Table 7-5
RCRA Facilities Currently Undergoing Corrective Action in North Carolina[1]

SITE NAME MAILING ADDRESS	EPA ID	SWMU NO. AND UNIT NAME
BORDEN INC. HIGHWAY II NORTH KINGSTON, NC 28501	NCD001725464	ENTIRE FACILITY
CALDWELL SYSTEMS INC MT. HERMAN RD, LENOIR, NC 28645-5	NCD086871282	ENTIRE FACILITY
GENERAL ELECTRIC CO 1223 FAIRGROVE RD, HICKORY, NC 28602	NCD003237948	SWMUS 63 (A,B,C,D), 64, 67, AOC A, B
HOECHST CELANESE CORP HWY 70 WEST, SALISBURY, NC 28144	NCD041043811	GRUB LANDFILL CRU BASINS POLISHING PONDS
KIMBERLY-CLARK BERKELY MILLS 32 SMYTH AVE, HENDERSONVILLE, NC 28792-2850	NCD003151990	WASTE PIT & LANDFILL
LITTON SYSTEMS INC. CLIFTON PRECISION STATE ROAD 1519 CHEROKEE CO., NC 28906	NCD044438406	UNITS A - H RCRA SWMU'S 1 - 14

1 Data as of May 1995 from the EPA RCRIS database. See Chapter 1 for a detailed description of data sources.

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8.0 DEMAND FOR REMEDIATION OF SITES IN SOUTH CAROLINA

This chapter provides a detailed discussion of the opportunities available in the State of South Carolina for vendors of innovative technologies. The chapter is organized in seven sections. The first section describes the organization and authority of the State's program. The next section discusses opportunities at sites subject to the South Carolina Hazardous Waste Management Act. That section is followed by a similar discussion of opportunities at Superfund National Priorities List (NPL) sites. The fourth and fifth sections discuss the markets at Resource Conservation and Recovery Act (RCRA) facilities subject to corrective action, and underground storage tank (UST) sites managed by the State. Subsequent sections provide information on opportunities at Federal facilities and provide other useful information about working in the State.

Figures 8-1 and 8-2 present two maps of South Carolina that indicate the locations of sites in the state that are on the NPL, and the RCRA facilities in the State[1]. The majority of the 25 NPL sites in South Carolina are located in the northwestern portion of the State, the remainder being distributed more or less evenly throughout the State. RCRA facilities are evenly distributed across the State, with the highest concentration in the northwest.

Summary Information

With approximately 70 state hazardous waste sites and 25 NPL sites, South Carolina presents much opportunity for vendors of innovative technologies. Of those 25 NPL sites, 15 sites have 47 operable units at which remedial action has not yet begun. Although only 1 RCRA facility currently is under a requirement to conduct a corrective measures study (CMS), there are 2,127 underground storage tanks in the State that are in need of remediation. There are 11 military installations and formerly used defense sites (FUDS) in South Carolina, comprising 99 sites at which some remedial action may be taken. Approximately $303 million through FY 2020 has been proposed to provide for completion of DoD remedial activity. There also is 1 DOE facility with 33 sites at which remediation is planned.

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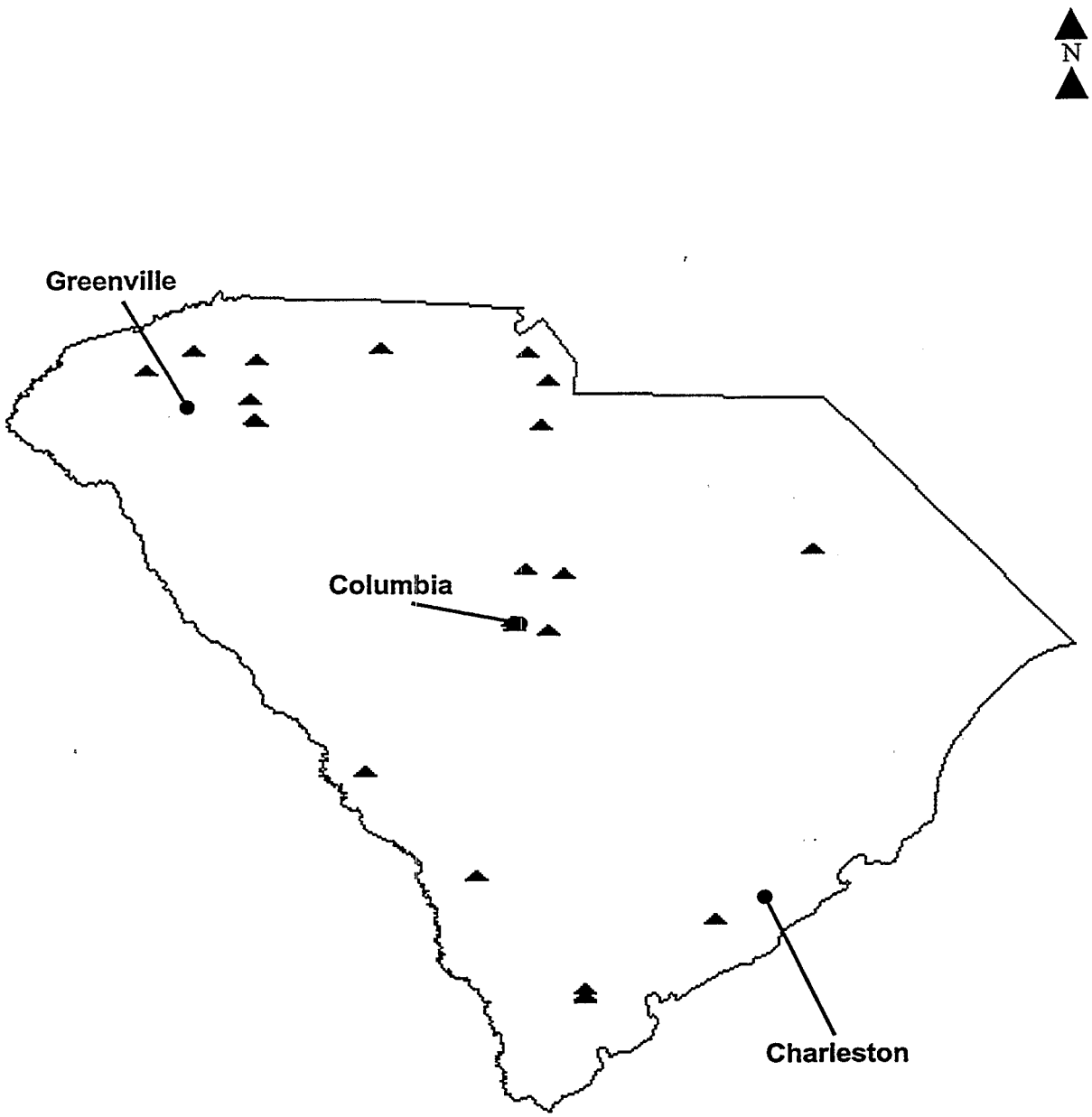
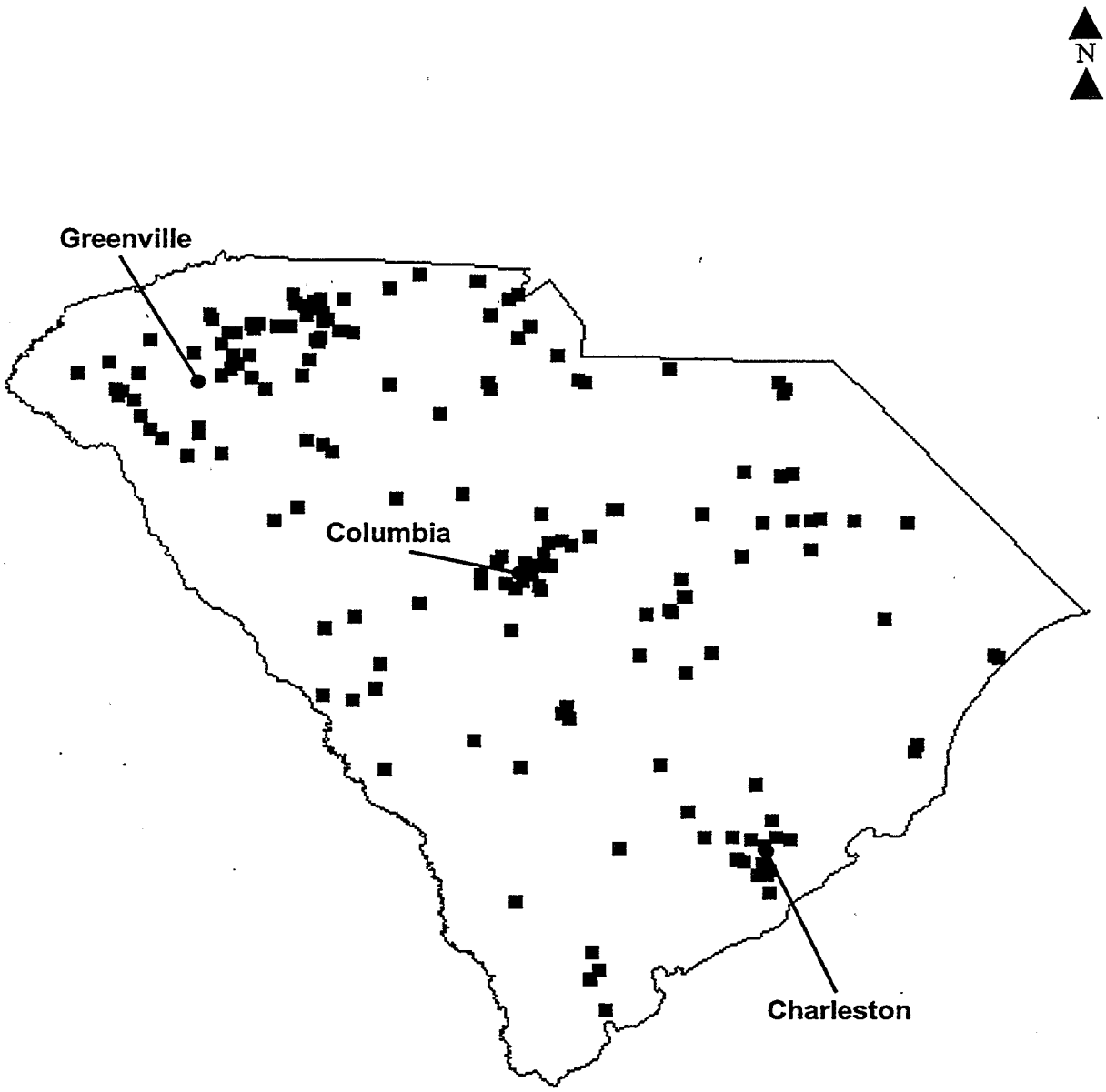
1 Figures 8-1 and 8-2 do not indicate the locations of *all* NPL sites or *all* RCRA sites located in South Carolina. LandView II™ contains information from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database on NPL sites and other sites. It also contains information from the Biennial Reporting System (BRS) on treatment, storage, and disposal facilities and major generators of hazardous waste.



NOT TO SCALE

Source: Modified from Landview II, based on data as of September 1994.

Figure 8-1
NPL Sites in South Carolina



NOT TO SCALE

Source: Modified from Landview II, based on data as of September 1994.

Figure 8-2
RCRA Facilities in South Carolina

8.1 The South Carolina Hazardous Waste Management Program

The South Carolina Department of Health and Environmental Control (SCDHEC) is the State regulatory agency responsible for implementing and enforcing environmental regulations. SCDHEC operates under the authority of the Hazardous Waste Management Act (HWMA), sections 44-55-10 through 840 and section 44-56-10-330, which authorizes the establishment of the Hazardous Waste Contingency Fund, a State priority list, and establishes authority to take or compel actions to clean up sites.

SCDHEC is divided into several bureaus; the bureau responsible for hazardous waste management is the Bureau of Solid Waste and Hazardous Materials. The bureau consists of five divisions that are responsible for implementation and enforcement of South Carolina's environmental regulations. The division responsible for both abandoned hazardous waste sites managed by the State and oversight of Federal NPL sites is the Division of Site Engineering and Screening, which has a complement of 15 staff (SCDHEC 1995). The South Carolina Hazardous Waste Management Act Section 4456, which was promulgated in 1978, gives SCDHEC the authority to regulate hazardous waste activities within the State. The State Superfund program receives its monies from both the Federal and State governments. Federal monies are used for activities at NPL sites located within the State, and State monies are used for all other sites. The balance of the fund was $17.3 million in June 1994 (SCDHEC 1995).

Voluntary cleanups are pursued under the regular State program; any PRP or potential purchaser may participate. The voluntary program was established in 1989 by guidance document. State support is funded from the Contingency Fund and from appropriations; PRPs are not charged for State services.

The State is authorized by the U.S. Environmental Protection Agency (EPA) to conduct the UST program and the base RCRA program and recently received authorization to conduct the corrective action program. The State does not have seperate corrective action program in addition to the authorized program. The RCRA Permitting Division (in the Bureau of Solid and Hazardous Waste Management) is responsible for both permitting and corrective action. The UST Division, however, is located in the Bureau of Drinking Water.

8.2 The Market at Sites Managed Under State Authorities

SCDHEC currently is revamping its data management system for hazardous waste sites managed by the State and, therefore, a current list of the sites is not available. Staff of SCDHEC report that there currently are approximately 70 sites at which staff are working. Data from SCDHEC's annual report can be used to obtain information about these sites. Information about how to obtain the annual report is found at the end of this chapter.

8.3 The Market at Sites Managed Under the Federal Superfund Program

EPA has listed 25 sites in South Carolina on the NPL; no sites currently are proposed. Table 8-1 presents summary information from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database on the status of the NPL sites in South Carolina. **Table 8-2, at the end of this chapter,** lists 15 NPL sites at which remedial action has not yet begun at operable units (OU). The sites and OUs of greatest interest to vendors are those at which technologies have been selected but vendors of the technologies have not yet been chosen. Of the 15 sites, one is a Department of Energy (DOE) installation, the Savannah River Site, which is discussed more fully in the section on opportunities at Federal facilities. Table 8-2 presents a summary of the sites in South Carolina.

Table 8-1
Number of Sites and Operable Units at South Carolina NPL Sites

Phase of Activity[a]	Number of Sites[b]	Number of Operable Units
Pre-remedial	11	11
Remedial	14	74

Source: Data as of May 1995 from EPA CERCLIS database; see Chapter 1 for a detailed description of the data sources.

[a] Sites with pre-remedial activities are sites where remedial design and construction have not yet begun, although the remedy may have been chosen. These sites, especially the pre-remedial sites still in the investigation phase, present long-term opportunities for vendors. Sites with remedial activities are sites where remedial design has begun and construction might not have begun. Where technologies have been selected but no vendor has been chosen, a site may present a short-term business opportunity.

[b] A site may have more than one operable unit in each phase, so operable units may be counted more than once.

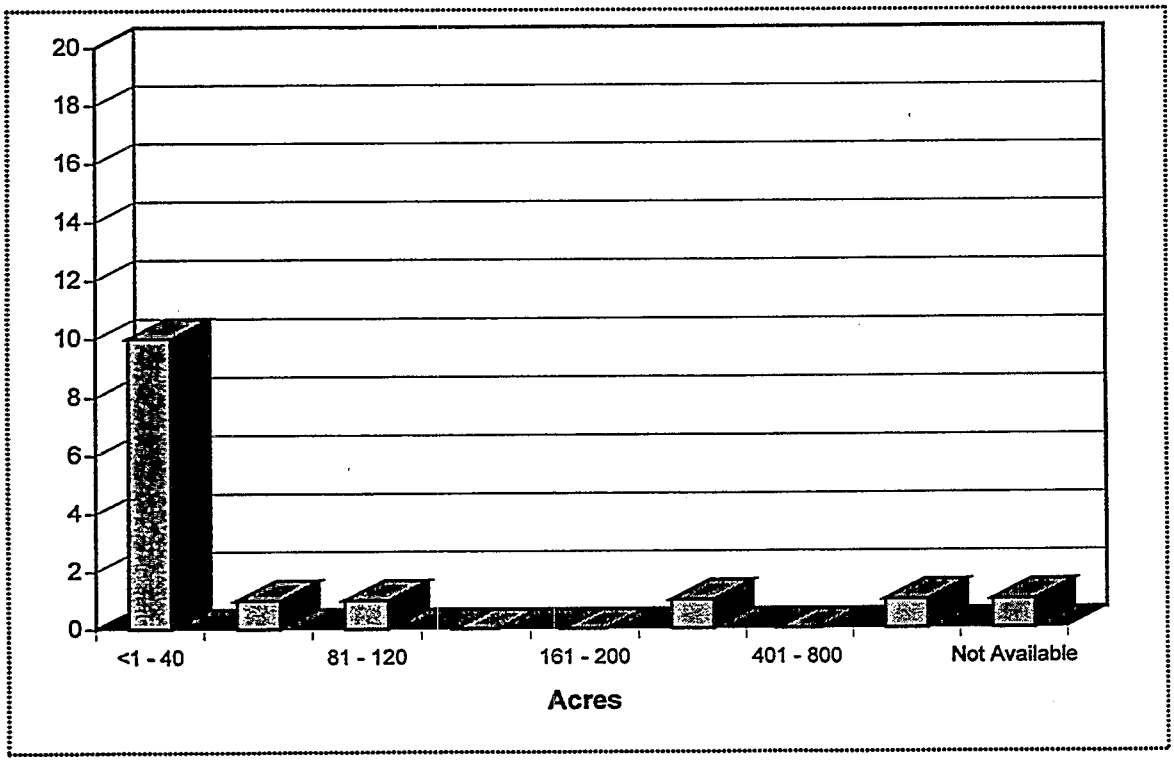
Figure 8-3 presents the distribution of sizes of the sites. Sites range in size from 0.09 to 192,000 acres. Data on the sizes of sites were reported in CERCLIS for all but one of the sites. Of the 14 sites for which data are available, 11 are 75 acres or less in area. Two sites are 100 and 224 acres in extent, and the Savannah River Site is 192,000 acres.

Data on contaminants were available for only 5 of the 15 sites; contaminants include volatile organic compounds (VOC), heavy metals, pesticides, and herbicides. For 14 of the 15 sites, data were available on

contaminated media. There are 10 cases of reported soil contamination, 11 cases of groundwater contamination, and 6 cases of surface-water contamination. In addition, several cases of contaminated sediment and contaminated debris also were reported. Volumes of contaminants were reported for only five sites. Reported volumes of soil contamination ranged from 650 to 20,000 cubic yards. There are 47 OUs at the 15 NPL sites; 33 OUs are located at the Savannah River DOE facility and are the responsibility of DOE.

The Savannah River Site (SRS) produces nuclear materials, primarily tritium and plutonium, for national defense. The site comprises five reactors, two chemical separations facilities, one reactor fuel manufacturing facility, and other administration and support facilities. Seventeen major milestones are outlined in the FY1994 - 1998 Five Year Plan to correct adverse environmental conditions and to remediate and close abandoned waste sites. Planned activities include closing seven sites (two are currently in progress), starting eight groundwater remediation programs (one is currently in progress), and completing 63 waste site investigations (60 are currently in progress).

Figure 8-3
NPL Site Size Distribution for the State of South Carolina



8.4 The Market at RCRA Corrective Action Sites

As mentioned in Section 8.1, South Carolina is authorized to adminster a corrective action program and to issue RCRA Part B Permits for RCRA hazardous waste facilities. As **Table 8-3 at the end of this chapter** indicates, data from the Resource Conservation Recovery Information System (RCRIS) database show that only one RCRA facility currently is under a requirement to conduct a CMS. Those facilities are owned by a wood treating company and an environmental services company. The RCRIS data indicate that the entire wood treatment facility is of concern. Because of the nature of wood treatment business, chemicals such as pentachlorophenol (PCP) and chromated copper arsenate (CCA) would be among the major contaminants of concern. In the case of the environmental services facility, one of the solid waste management units (SWMU) was identified as an underground waste oil tank.

8.5 The Market at UST Sites Managed by South Carolina

Table 8-4 presents data on USTs in the state of South Carolina. There are 19,302 active tanks in the State. Active tanks are defined as tanks still in service (EPA 1993). As of March 31, 1996, the EPA Office of Underground Storage Tanks (OUST) has identified 2,127 leaking tanks in South Carolina at which clean up has yet to be initiated. That number represents the difference between the two data elements "confirmed releases" and "clean ups initiated." Clean up at USTs with soil contamination usually is completed within 6 months to 2 years after the site has been identified. Cleanup at USTs with groundwater contamination usually is completed within 2 to 5 years after the site has been identified. Therefore, the number of USTs identified as opportunities will change rapidly.

Table 8-4
Underground Storage Tank Corrective Action Measures in South Carolina as of the First Half of FY 1996

Active Tanks	Tanks Closed	Confirmed Releases	Cleanups Initiated	Cleanups Completed	Cleanups Not Yet Initiated
19,302	21,467	4,260	2,133	629	2,127

Source: EPA Office of Underground Storage Tanks Semi-Annual Activity Report for the First Half of Fiscal Year 1996 (ending March 31, 1996)

In national studies of USTs performed by EPA in 1991 and 1992, it was found that the majority, or about 87 percent of the tanks, are used to manage gasoline or diesel fuel, kerosene, or heating oil. Of the

remaining USTs, 11 percent manage other materials and wastes, such as used oil (4 percent), hazardous material (2 percent), and other material (5 percent) or are empty (2 percent). The majority of the contamination problems are related to the contamination of soils and groundwater with petroleum products that contain VOCs and semivolatile organic compounds (SVOC).

8.6 The Market at Federal Sites in South Carolina

There is one DOE installation in the State at which remedial action activities are planned and 11 operational or closing DoD installations and formerly used defense sites (FUDS) at which such activities are planned. At those DoD installations are 284 active sites, 99 of which have future remedial action planned. Active sites are those at which some form of remediation activity is planned or underway. The total number of sites to be remediated may exceed that figure because, in general, DoD does not plan remediation at a site until an RI/FS has been completed.

The *Environmental Restoration and Waste Management Five-Year Plan* (DOE 1993) indicates that a total of more than $2.7 billion is estimated to be needed between FY96 and FY98 in all phases of cleanup activities at the Savannah River Site (SRS). SRS is on the NPL, and has 33 OUs that present opportunities for vendors. Contaminants were not identified in CERCLIS. The DOE 5-Year Plan indicates that SRS is contaminated with mixed wastes, low-level radioactive waste, and transuranic waste. Groundwater pumping is planned at eight of the OUs at Savannah River.

The *Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994* indicates that a total of approximately $303 million is estimated to be needed through the year 2020 in all phases of clean up at the 11 installations. The bulk of the funds ($226 million) is allocated to four installations [Fort Jackson ($59 million), Naval Weapons Station Charleston ($62.7 million), Charleston Air Force Base ($59.9 million), and Shaw Air Force Base ($45.3 million)]. The remaining $76 million is allocated to the other 7 installations. Many of the sites identified at the installations either are undergoing or are scheduled to undergo an RI/FS and therefore, are at a relatively early stage of the remediation process.

Most of the contaminants at sites on military installations currently planned for remediation fall into one of three categories: petroleum, oil, and lubricants (POL); VOCs; and heavy metals. Those contaminants are found in the soil at all sites and in the groundwater in a large percentage of the sites. No data are available on volumes of soil and groundwater to be treated. Table 8-5 provides information on the individual

installations in the State and the sites that are subject to remediation at those installations. Staff at each installation determine the individual sites at which they plan to perform remedial actions. Clean up already may be underway at other sites; such sites are not included in the table because it is unlikely that they will afford an opportunity for vendors of innovative technologies.

Table 8-5
DoD Installations and Sites in South Carolina

Name and Outyear Funding ($000)	Federal Facility Identification Number	Codes[1]	Number of Sites at Which Cleanup is Planned
Beaufort Marine Corps Air Station Outyear Funding FY95-2003 $16,864	SC417302320800	A	10
Camp Croft Outyear Funding FY95-2007 $11,142	SC49799F492600	F	3
Charleston Air Force Base Outyear Funding FY95-2005 $59,900	SC457182446000	A	29
Donaldson Air Force Base Outyear Funding FY95-2003 $16,002	SC49799F494600	F	3
Fort Jackson Outyear Funding FY95-2020 $59,083	SC421002044900	A	29
McEntire Air National Guard Base Outyear Funding FY95-2003 $6,012	SC457282516000	A	8
Myrtle Beach Air Force Base Outyear Funding FY95-2002 $15,722	SC457002482100	A	0
Naval Weapons Station Charleston Outyear Funding FY95-2010 $62,728	SC417002262000	A	2
Parris Island Marine Corps Recruit Depot Outyear Funding FY95-2003 $7,755	SC417302276200	A,P	5
Shaw Air Force Base Outyear Funding FY95-2006 $45,381	SC457212446600	A	8

Table 8-5 (continued)
DoD Installations and Sites in South Carolina

Name and Outyear Funding ($000)	Federal Facility Identification Number	Codes[1]	Number of Sites at Which Cleanup is Planned
Walterboro AAF Outyear Funding FY95-2002 $2,619	SC49799F49500	F	2

Source: *Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994*

1 Codes:
A = The installation is currently operational or on the BRAC list, and cleanup is covered by DERA or BRAC funds
F = The installation is no longer active and is managed by the FUDS Branch
P = The installation is proposed for listing on the National Priorities List

8.7 Further Market Information For South Carolina

A vendor that wishes to obtain information about sites in South Carolina that are managed by EPA may write to:

U.S. Environmental Protection Agency
Region 4
345 Courtland Street, NE
Atlanta, GA 30365

For information on RCRA facilities, the envelope should be marked to the attention of the Freedom of Information Act Officer, Office of RCRA and Federal Facilities. For information on CERCLA facilities in South Carolina, the envelope should be marked to the attention of the Freedom of Information Act Officer, North Superfund Remedial Branch. The requestor will be billed for the information, according to the volume of information provided. For more information on USTs handled by EPA, vendors may contact:

John Mason
U.S. EPA, Region 4
345 Courtland Street, NE
Mail Code 4WM-GWP-15
Atlanta, GA 30365

Information also is available on the names and addresses of the UST sites in the State that require remediation. A vendor may write to:

South Carolina Department of Health and Environmental Control
Groundwater Protection Division
2800 Bull Street
Columbia, SC 29201
UST (803) 734-5335
Leaking Underground Storage Tank (LUST) (803) 734-5331

For information about DOE sites or any of DOE's technology development assistance programs, vendors may contact:

DOE's Center for Environmental Management Information
470 L'Enfant Plaza East
Suite 7112
Washington, DC 20024
(800) 736-3282

The U.S. Department of Defense (DoD) does not have a single point of contact that handles all of DoD's environmental restoration initiatives, site-level information, and technology programs. The Defense Environmental Restoration Program Annual Report to Congress for FY 1995 contains detailed information on environmental restoration accomplishments and schedules at DoD installations world-wide. This report is available on the Internet at the DoD Environmental Restoration home page at:

http://www.dtic.mil/envirodod/

The home page also provides links to other internet sites that pertain to DoD environmental restoration activities.

For information on abandoned hazardous waste sites in South Carolina that require remediation vendors may write for a copy of SCDHEC's annual report to:

Mr. Kendall Quinton
Bureau of Solid and Hazardous Waste Management
Division of Site Engineering and Screening
2600 Bull Street
Columbia, SC 29201

There is a charge for each report requested, according to the volume of material.

Table 8-2
NPL Sites in South Carolina at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: BEAUNIT CORP. (CIRCULAR KNIT & DYE) NPL STATUS: Final					EPA ID: SCD000447268 SIZE: 0.09 Acres		ADDRESS: 206 GEORGIA AVE, FOUNTAIN INN, SC 29644 TYPE: Abandoned - No Use	
01	NA	(RP/FE)	7/02/97	N	DB; GW; SD; SO; SW	NA	NA	NA
SITE NAME: CAROLAWN, INC NPL STATUS: Final					EPA ID: SCD980558316 SIZE: 3 Acres		ADDRESS: S. OF SC HWY 9 ON CO. RD 841, FORT LAWN, SC 29714 TYPE: Abandoned - No Use	
02	RI/FS AREA NORTH OF FENCE AREA	(EP/F/RP)	3/30/96	N	NA	NA	NA	NA
SITE NAME: ELMORE WASTE DISPOSAL NPL STATUS: Final					EPA ID: SCD980839542 SIZE: 1 Acre		ADDRESS: 117 HIGHLAND ST., GREER, SC 29651 TYPE: Residential - Private Home Ownership	
01	RI/FS	(F)	12/30/95	Y	GW; SO; SW	650 cy	METALS; VOC	Precipitation; Other/Unknown/Undetermined Technology; Steam Stripping; Thermal Treatment with On-Site Placement; pH Neutralization, Other Neutralization; Pump and Treat at POTW with Discharge; Off-Site Treatment; Monitoring; Off-Site Locations (Treatment/Final Disposal)
SITE NAME: HELENA CHEMICAL CO. LANDFILL NPL STATUS: Final					EPA ID: SCD058753971 SIZE: NA		ADDRESS: HWY 321 S, FAIRFAX, SC 29829 TYPE: Agricultural Chemicals (Organic & Inorganic)	
01	NA	(RP/FE)	12/30/95	Y	DB; GW; SD; SO; SW	20,000 cy	PESTICIDES/ HERBICIDES; METALS; VOC	Disposal of Residual; Off-Site Treatment; Biodegradation and Bioremediation; Soil Cover; Steam Stripping; Pump and Treat at POTW with Discharge; Monitoring

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 8-2 (continued)
NPL Sites in South Carolina at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: KALAMA SPECIALTY CHEMICALS NPL STATUS: Final					EPA ID: SCD094995503 SIZE: 16 Acres		ADDRESS: PO BOX 908, BURTON, SC 29902 TYPE: Abandoned - No Use	
01	NA	(RP/FE)	10/30/94	Y	AI; GW; SD; SO	684 cy	VOC; METALS	Monitoring; Air Stripping; Disposal of Residual; Precipitation; Leachate Treatment; Steam Stripping; Off-Site Treatment; Solidification and Stabilization; Thermal Treatment with On-Site Placement; Excavation
SITE NAME: KOPPERS CO. INC. (FLORENCE PLANT) NPL STATUS: Final					EPA ID: SCD003353026 SIZE: 20 Acres		ADDRESS: KOPPERS RD, FLORENCE, SC 29503 TYPE: Wood Preserving	
01	NA	(RP/FE)	12/31/97	N	GW; SO	NA	NA	NA
SITE NAME: LEONARD CHEMICAL CO. INC. NPL STATUS: Final					EPA ID: SCD991279324 SIZE: 7 Acres		ADDRESS: COURETON FERRY RD, CATAWBA, SC 29704 TYPE: Abandoned - No Use	
01	NA	(RP/FE)	9/29/97	N	GW; SO	NA	NA	NA
SITE NAME: LEXINGTON COUNTY LANDFILL AREA NPL STATUS: Final					EPA ID: SCD980558043 SIZE: 75 Acres		ADDRESS: US 321 1 MILE S OF I-26, CAYCE, SC 29033 TYPE: Refuse Systems - Industrial Landfill, Municipal Landfill, & Co-disposal Landfill	
01	NA	(RP/FE)	9/30/97	Y	GW	NA	NA	NA
SITE NAME: PALMETTO RECYCLING, INC NPL STATUS: Final					EPA ID: SCD037398120 SIZE: 2 Acres		ADDRESS: 531 KOON STORE RD, COLUMBIA, SC 29203 TYPE: Recycling Battery	
01	NA	(F)	3/30/97	Y	LW	10,800 gal	NA	Off-Site Treatment
SITE NAME: PARA-CHEM SOUTHERN, INC NPL STATUS: Final					EPA ID: SCD002601656 SIZE: 100 Acres		ADDRESS: HWY 145, SIMPSONVILLE, SC 29681 TYPE: Industrial Organic Chemicals	
01	NA	(RP/FE)	9/30/95	Y	GW; SL; SO; SW	NA	VOC; METALS	Air Stripping; Pump and Treat at POTW with Discharge; Off-Site Treatment; Monitoring; Biodegradation and Bioremediation; Solidification and Stabilization

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 8-2 (continued)
NPL Sites in South Carolina at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: ROCK HILL CHEMICAL CO **NPL STATUS:** Final					**EPA ID:** SCD980844005 **SIZE:** 5 Acres		**ADDRESS:** NORTH CHERRY RD, ROCK HILL, SC 29730 **TYPE:** Solvents Recovery	
01	NA	(F/RP)	3/31/97	Y	GW; SO	NA	NA	NA
SITE NAME: SANGAMO WESTON/TWELVE-MILE/HARTWELL PCB **NPL STATUS:** Final					**EPA ID:** SCD003354412 **SIZE:** 224 Acres		**ADDRESS:** SANGAMO RD, PICKENS, SC 29671 **TYPE:** Electronic Capacitors	
02	WATERSHED	(F/RP)	9/30/96	Y	SD; SW	NA	NA	NA
SITE NAME: TOWNSEND SAW CHAIN CO **NPL STATUS:** Final					**EPA ID:** SCD980558050 **SIZE:** 2 Acres		**ADDRESS:** STATE ROUTE 53 & I-20, PONTIAC, SC 29045 **TYPE:** Undeveloped Land (Incl. forests, fields, wetlands); Manufacturing - Electroplating; Metal Heat Treating; Saw Blades and Handsaws	
01	NA	(RP/FE)	6/30/95	Y	GW; SD; SO; SW	NA	NA	NA
SITE NAME: US DOE SAVANNAH RIVER SITE **NPL STATUS:** Final					**EPA ID:** SC1890008989 **SIZE:** 192,000 Acres		**ADDRESS:** BETWEEN SC 125 & US 278, AIKEN, SC 29802 **TYPE:** Dept. of Energy	
08	F-AREA GROUNDWATER	(FF)	6/30/97	Y	DK	NA	NA	NA
09	H-AREA GROUNDWATER	(FF)	6/30/96	Y	DK	NA	NA	NA
10	M-AREA VADOSE ZONE	(FF)	12/30/96	N	DK	NA	NA	NA
11	631-6G CS BRPS	(FF)	9/30/98	N	DK	NA	NA	NA
12	M-AREA WEST	(FF)	3/30/98	N	DK	NA	NA	NA
13	SILVERTON ROAD	(FF)	12/30/97	N	DK	NA	NA	NA
14	F-AREA BRP'S	(FF)	9/30/97	N	DK	NA	NA	NA
15	D-AREA BRP'S	(FF)	9/30/97	N	DK	NA	NA	NA
16	OLD F-AREA SEEPAGE BASINS	(FF)	12/30/97	N	DK	NA	NA	NA
17	L-AREA O/C BSN. & A/C BSN	(FF)	6/30/98	N	DK	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 8-2 (continued)
NPL Sites in South Carolina at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: US DOE SAVANNAH RIVER SITE NPL STATUS: Final					EPA ID: SC1890008989 SIZE: 192,000 Acres		ADDRESS: BETWEEN SC 125 & US 278, AIKEN, SC 29802 TYPE: Dept. of Energy	
18	BURMA ROAD	(FF)	6/30/98	N	DK	NA	NA	NA
19	A-AREA BRP'S, PITS, BSN.	(FF)	12/30/98	N	DK	NA	NA	NA
20	K-AREA BSNS & BPO PITS	(FF)	3/30/99	N	DK	NA	NA	NA
21	OLD TNX BSN, TNX BG	(FF)	3/30/00	N	DK	NA	NA	NA
22	H AREA RET. BSN.	(FF)	9/30/98	N	DK	NA	NA	NA
23	F-AREA RET. BSN.	(FF)	9/30/98	N	DK	NA	NA	NA
24	CMP PITS	(FF)	12/30/98	N	DK	NA	NA	NA
25	108-4R BSN & R-REACTOR SPG BSN	(FF)	12/30/99	N	DK	NA	NA	NA
26	L AREA BPO PITS	(FF)	3/30/99	N	DK	NA	NA	NA
27	D-AREA OIL SPG. BSN.	(FF)	12/30/97	N	DK	NA	NA	NA
28	TANK 37 CTS LINE LEAK	(FF)	12/30/98	N	DK	NA	NA	NA
29	TNX GROUNDWATER	(FF)	12/30/95	Y	DK	NA	NA	NA
30	D AREA OSB	(FF)	6/30/95	Y	DK	NA	NA	NA
31	C AREA BRP	(FF)	9/30/99	N	DK	NA	NA	NA
32	BURIAL GROUND COMPLETE SCOU	(FF)	3/30/98	N	DK	NA	NA	NA
35	PAR POND	(FF)	6/30/96	Y	NA	NA	NA	NA
36	A/M AREA SOUTHERN SECTOR	(FF)	3/30/97	N	NA	NA	NA	NA
37	SRL GROUNDWATER	(FF)	3/30/97	N	NA	NA	NA	NA
SITE NAME: US DOE SAVANNAH RIVER SITE NPL STATUS: Final					EPA ID: SC1890008989 SIZE: 192,000 Acres		ADDRESS: BETWEEN SC 125 & US 278, AIKEN, SC 29802 TYPE: Dept. of Energy	

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
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DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 8-2 (continued)
NPL Sites in South Carolina at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	NAME	(LEAD)	RA PLANNED START DATE[2]	RI/FS COM-PLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
38	R-AREA BPO PITS	(FF)	3/30/99	N	NA	NA	NA	NA
39	P-AREA BPO PITS	(FF)	3/30/99	N	NA	NA	NA	NA
40	K-AREA RP & BRP	(FF)	3/30/99	N	NA	NA	NA	NA
41	P AREA CP R/O BASIN	(FF)	3/30/99	N	NA	NA	NA	NA
42	L AREA BPO PITS	(FF)	3/30/99	N	NA	NA	NA	NA
SITE NAME: WAMCHEM, INC **NPL STATUS:** Final					**EPA ID:** SCD037405362 **SIZE:** 7 Acres		**ADDRESS:** US HWY 21 N OF AIR BASE, BURTON, SC 29902 **TYPE:** Industrial Organic Chemicals	
01	NA	(FE/RP)	6/30/95	Y	GW; LW; SO	2,000 cy	VOC	Monitoring; Air Stripping; Leachate Treatment; Disposal of Residual; Thermal Treatment with On-Site Placement

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 8-3
RCRA Facilities Currently Undergoing Corrective Action in South Carolina[1]

SITE NAME MAILING ADDRESS	EPA ID	SWMU NO. AND UNIT NAME
KOPPERS INC PO BOX 1725, FLORENCE, SC 29503-3	SCD003353026	ENTIRE FACILITY
LAIDLAW ENV SVS OF SC INC RT 1 BOX 255, PINEWOOD, SC 29125-5	SCD070375985	WASTE OIL UST, SPILL SUMPS (3) OLD SCRAP

1 Data as of May 1995 from the EPA RCRIS database. See Chapter 1 for a detailed description of data sources.

9.0 DEMAND FOR REMEDIATION OF SITES IN TENNESSEE

This chapter provides a detailed discussion of the opportunities available in the State of Tennessee for vendors of innovative technologies. The chapter is organized in seven sections. The first section describes organization and authority of the State's program. The next section discusses opportunities at sites subject to Tennessee's Hazardous Waste Management Act. That section is followed by a similar discussion of opportunities at Superfund National Priorities List (NPL) sites. The fourth and fifth sections discuss the markets at Resource Conservation and Recovery Act (RCRA) facilities subject to corrective action and at underground storage tanks (UST) sites managed by the State. Subsequent sections provide information on opportunities at Federal facilities and provide other useful information about working in the State.

Figures 9-1 and 9-2 present two maps of Tennessee that indicate the locations of sites in the State that are on the NPL and the RCRA facilities in the State.[1] The 18 NPL sites in Tennessee are distributed throughout the State. RCRA facilities also are found throughout the State, with major concentrations in the southwest near Memphis, in the central part of the State near Nashville, in the northeast in the Oak Ridge and Knoxville corridor, and in the southeast near Chattanooga.

Summary Information

Tennessee offers many potential opportunities to vendors of innovative technologies. Tennessee currently has an inventory of 18 sites on the NPL. Of those 18 sites, 3 of the 18 sites are Federal facilities and 7 of the 18 NPL sites have 49 operable units (OU) at which remedial action has not yet begun. Listed on the Tennessee Promulgated Sites List are 155 sites. There are 61 RCRA facilities in Tennessee, none of which currently is under a requirement for the conduct of a corrective measures study (CMS). According to the EPA Office of Underground Storage Tanks, 887 USTs in the State require remediation. Finally, there are 9 Department of Defense (DoD) installations and formerly used defense sites (FUDS) located in Tennessee. Of the installations' 234 sites, remediation currently is planned for 162. There also are 3 DOE sites with 26 OUs that require remediation.

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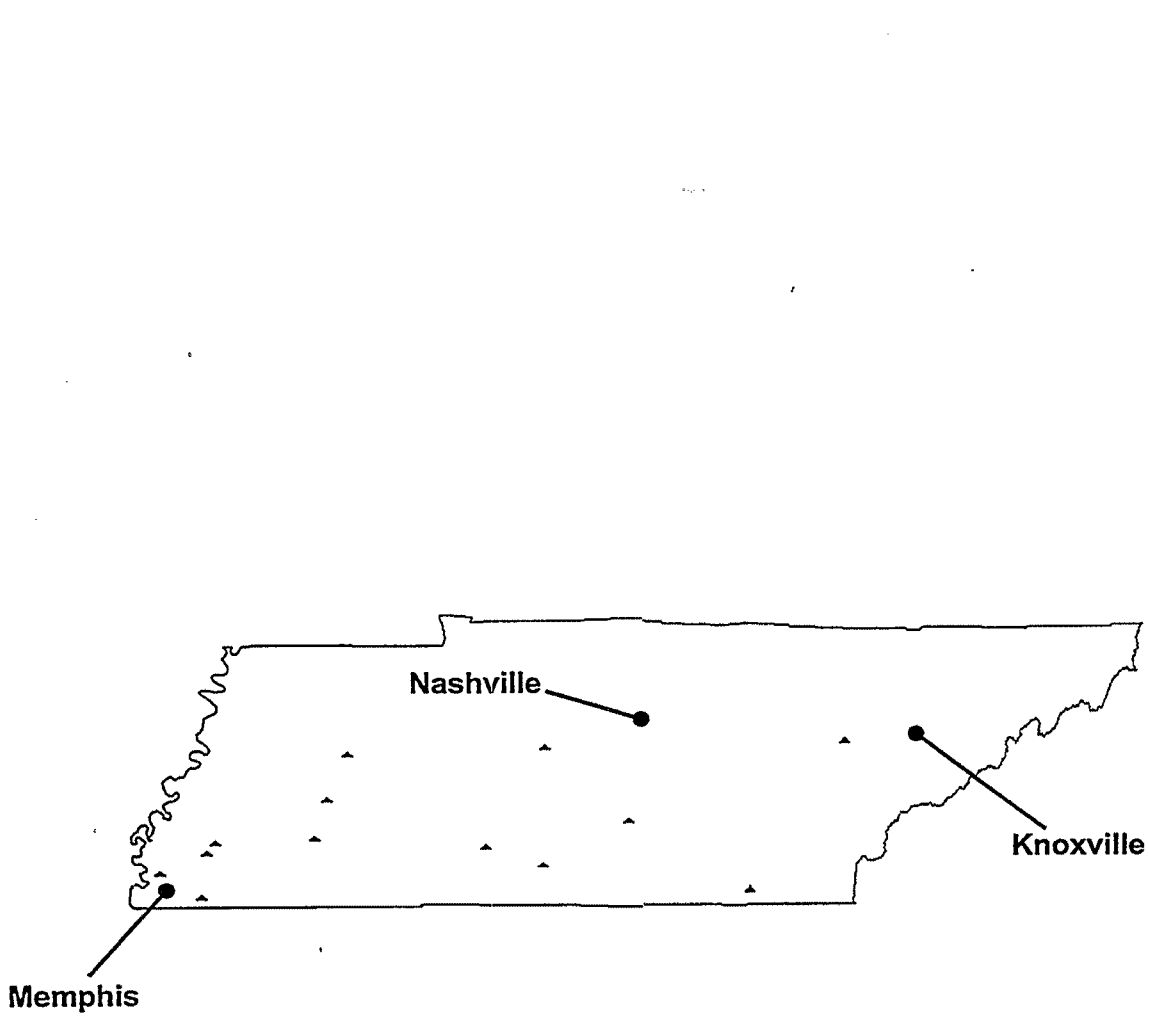
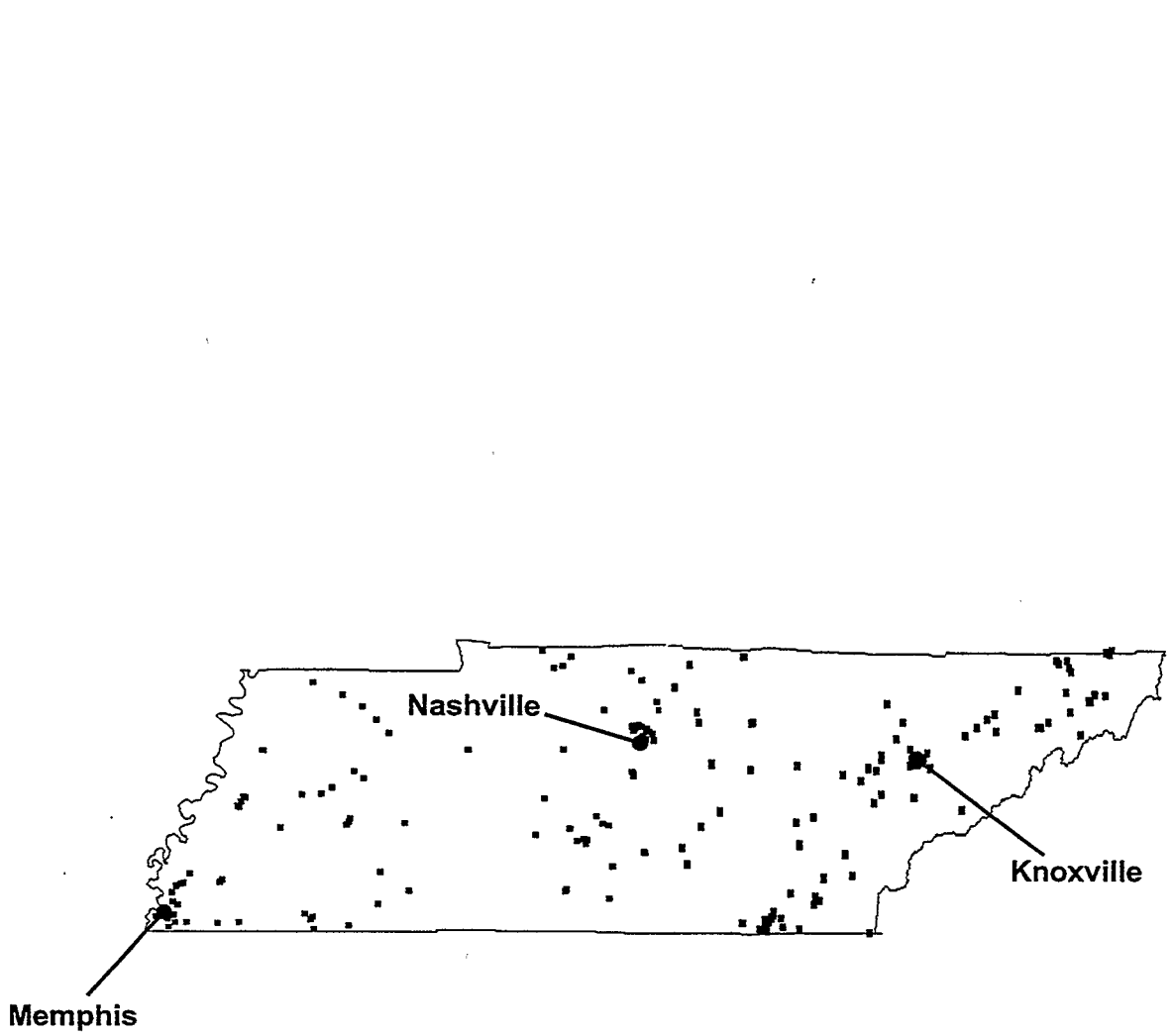
[1] Figures 9-1 and 9-2 do not indicate the locations of *all* NPL sites or *all* RCRA sites located in Tennessee. LandView II™ contains information from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) on NPL sites and other sites. It also contains information from the Biennial Reporting System (BRS) on treatment, storage, and disposal facilities and major generators of hazardous waste.



NOT TO SCALE

Source: Modified from Landview II, based on data as of September 1994.

Figure 9-1
NPL Sites in Tennessee



NOT TO SCALE

Source: Modified from Landview II, based on data as of September 1994.

Figure 9-2
RCRA Facilities in Tennessee

9.1 The Tennessee Hazardous Waste Management Program

The Tennessee Department of Environment and Conservation (TDEC) is the State's lead agency responsible for administering Tennessee's environmental management programs. The Tennessee Division of Solid Waste Management administers regulations for commercial hazardous waste treatment, storage, and disposal facilities and regulates processing and disposal of solid waste. The Tennessee Division of Superfund (TDSF) is the lead State agency for the investigation and cleanup of Tennessee's active and abandoned hazardous substance disposal sites. Based on telephone conversations with State representatives, TDSF has six regional offices, with a total of 49 full-time staff. See Section 9.7 for a list of these offices.

Tennessee's Hazardous Waste Management Regulations are promulgated under Tennessee Rule Chapter 1200-1-11, which represents a combination of many different sets of regulations promulgated since 1980 by the Tennessee Solid Waste Disposal Control Board (TSWDCB). The TSWDCB's authorities and responsibilities are governed under the Tennessee Hazardous Waste Management Act of 1983, as amended in 1986, 1988, 1989, 1990, and 1991, Tennessee Code Annotated, Title 68, Chapter 212-201 *et seq*. The legislation establishes a State Superfund program; authorizes the Hazardous Waste Remedial Action Fund; provides authority to take or compel remedial actions; establishes a priority list; and requires notice to register deeds for any site listed. These Tennessee rules and regulations are patterned closely after Federal regulations promulgated by the U.S. Environmental Protection Agency (EPA) in Title 40, parts 260 through 270 and 279 of the Code of Federal Regulations.

There are some deliberate differences between the State regulations and the EPA regulations that are based on State law or policy. Generally, those differences are Tennessee's more stringent requirements for notification by generators and annual reporting; requirements for permitting of transporters; fee requirements applicable to generators, transporters, and operators; and standards for management of used oil set forth in the State's Used Oil Collection Act of 1993.

TDSF maintains a promulgated sites' list which includes all sites that require remediation. In addition, a "redline" list of priority sites is maintained for internal use by the Division of Superfund. The division manages most Federal Superfund sites throughout the State under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA). Part 2 of Tennessee's Hazardous Waste Management Act of 1983 established the Hazardous Waste Remedial Action Fund (Rule Chapter 1200-1-13) to assess additional

fees on hazardous waste generators and transporters. TDSF is authorized to spend state fund dollars to investigate and clean up releases of hazardous substances, pollutants, or contaminants. TDSF also actively identifies potentially responsible parties (PRP) to conduct cleanup activities under State oversight. TDSF also has developed a Voluntary Cleanup Oversight and Assistance Program (VCOAP) to provide technical assistance to persons conducting voluntary investigations and cleanups of contaminated property. Tennessee is authorized to issue RCRA Part B permits for hazardous waste facilities but is not authorized to administer the corrective action program.

According to the U.S. Environmental Protection Agency's (EPA) 1995 50-State Study, staff and administrative costs are funded from Federal grants; fees assessed on hazardous waste generators, treaters, and shippers; and the Hazardous Waste Remedial Action Fund. The fund had a balance of $8.03 million at the end of fiscal year (FY) 1995; $5.5 million was added to the fund in FY95. Expenditures for NPL sites totaled $59,000. Expenditures at non-NPL sites totaled $3.4 million. Significant sources of fund monies include appropriations and fees on transporters and generators. Cost recovery, interest, and penalties are minor sources of monies for the fund. The fund may be used for program administration, emergency response, site investigation, removals actions, remediation, studies and design, operation and maintenance, and to match CERCLA funds.

The State uses water quality criteria, maximum contaminant levels (MCL), background levels, risk assessment, and EPA guidelines in setting up cleanup levels. If no standard was available, background levels or levels derived from EPA health risk assessment guidance were used. Risk levels of 10^{-4} to 10^{-6} were applied on a case-by-case basis depending on the media, the contaminant, and the population or ecology at risk of exposure.

In 1994, the State legislature established a voluntary cleanup program open to all sites that fall within the cleanup program. Incentives for participation include:

- The avoidance of a public hearing and placement on the State's list;
- no notice required to be recorded in the deed records;
- no liens;
- release of liability pursuant to performance under consent order; and
- payment of orphan shares.

State oversight is funded by PRP payment of actual costs and a $5,000 participation fee.

The Tennessee UST program is administered by the Tennessee Division of Underground Storage Tanks (TDUST). This program is promulgated under the Tennessee Code Annotated Title 68, Chapter 215, Section 101 through 128, the Tennessee Petroleum Underground Storage Tank Act. TDUST is comprised of seven sections: Technical Review, Field Offices, Fees and Notification, Enforcement, Contract Management, Administration, and Public Participation and Training. The Technical Review section develops and reviews guidance documents and provides technical assistance to the field offices. There are eight field offices in the State. The field offices are responsible for overseeing tank closures, conducting investigations and compliance inspections, reviewing closure and removal plans, and providing case management. The Fees and Notification Section is responsible for collecting fees from the Tennessee Petroleum Fund, established to cover the cost of cleanups. The Enforcement Section conducts compliance inspections to ensure work is done properly. The Contract Management Section reviews applications for reimbursement from State and Federal funds, manages the Federally-funded Leaking Underground Storage Tank Trust Fund, and oversees certification of contractors. The Administration Section coordinates the activities of TDUST within the State government. The Public Participation and Training section provides information to the general public and coordinates training for staff of TDUST.

9.2 The Market at Sites Managed Under State Authorities

As of February 1995, there were 155 sites listed on TDEC's promulgated sites list which is maintained by TDSF. Those sites have been determined by TDSF to require remediation. Specific information on the types of contaminants and media contaminated was unavailable. See Section 9.7 for information on obtaining a list of promulgated sites. **Table 9-1 at the end of the chapter,** presents the list of promulgated sites as of February 15, 1995. TDSF also maintains a "redline" list of priority sites for internal use.

9.3 The Market at Sites Managed Under the Federal Superfund Program

EPA has listed 17 sites in Tennessee on the NPL. Currently, one additional site in Tennessee is proposed for listing. Table 9-2 presents summary information from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database on the status of NPL sites in Tennessee. **Table 9-3, at the end of this chapter,** lists information from the CERCLIS database available on 7 sites and 49 operable units (OU) at which remediation activities have not yet begun. Those sites and OUs are of the greatest interest to technology vendors; technologies themselves may have been selected, but vendors of those technologies have not.

Table 9-2
Number of Sites and Operable Units at Tennessee NPL Sites

Phase of Activity[a]	Number of Sites[b]	Number of Operable Units
Pre-remedial	4	8
Remedial	13	77

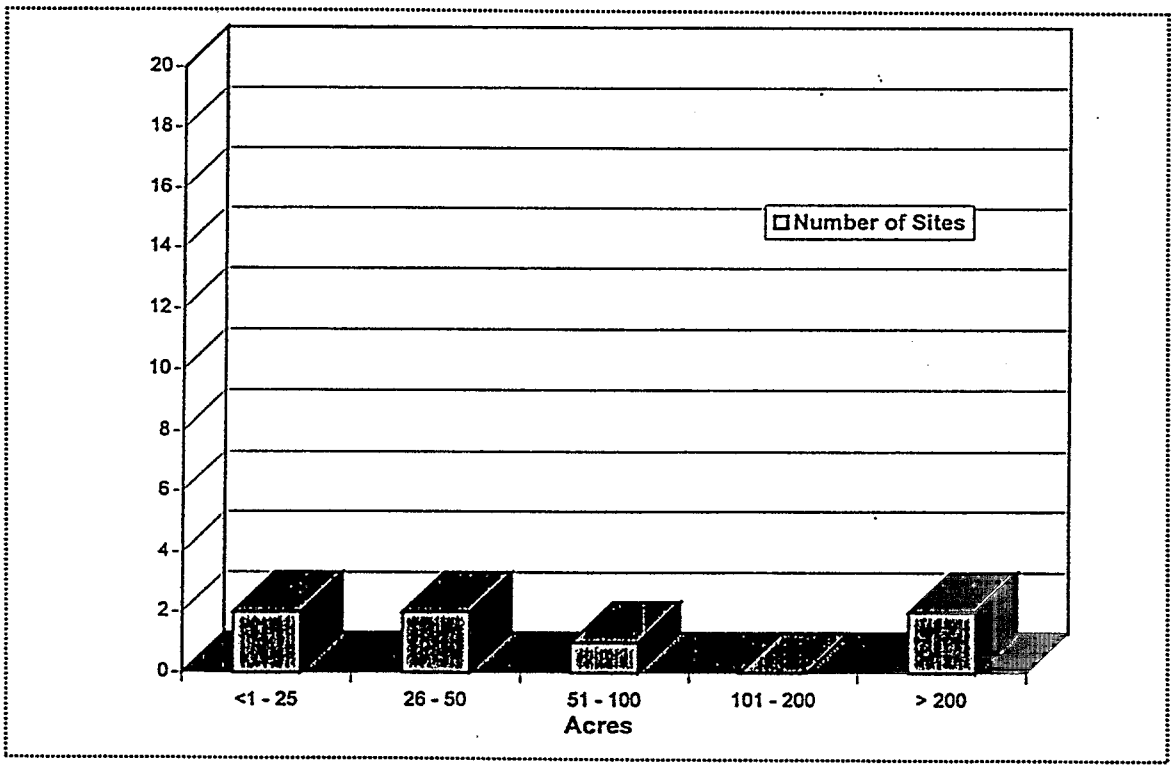
Source: Data as of May 1995 from EPA CERCLIS database; see Chapter 1 for a detailed description of the data sources.

[a] Sites with pre-remedial activities are sites where remedial design and construction have not yet begun, although the remedy may have been chosen. These sites, especially the pre-remedial sites still in the investigation phase, present long-term opportunities for vendors. Sites with remedial activities are sites where remedial design has begun and construction might not have begun. Where technologies have been selected but no vendor has been chosen, a site may present a short-term business opportunity.

[b] A site may have more than one operable unit in each phase, so operable units may be counted more than once.

Figure 9-3 presents data on the distribution of sizes of the sites. The NPL sites in the State range in size from less than 1 acre to more than 58,000 acres. Technologies selected for use at some of the sites include soil vapor extraction and thermal desorption. Review of NPL site summaries indicates that there is contamination in both the soil and groundwater at many of the sites. No data were available on the volumes of contaminated soil or groundwater present at the various sites. Of the 49 OUs requiring remediation, 26 are located at the Department of Energy's (DOE) Oak Ridge Reservation. That facility and its OUs are discussed in more detail in Section 9.6.2.

Figure 9-3
NPL Site Size Distribution for the State of Tennessee



9.4 The Market at RCRA Corrective Action Sites

As mentioned in Section 9.1, Tennessee is not authorized to administer a corrective action program. Data from the Resource Conservation and Recovery Information System (RCRIS) database indicate that there are 61 RCRA TSDFs in the State. Currently, none of those facilities are conducting a CMS.

The definition of corrective action used here is that a facility has been required to perform CMS. The number of facilities with CMS imposed is not a direct subset of RCRA treatment, storage, and disposal (TSD) facilities, instead it is a subset of TSD facilities and hazardous waste generators. While TSD facilities are statutorily required to address corrective action, EPA has discretionary authority to impose corrective action on generators.

However, 17 RCRA facilities are under a requirement to conduct a RCRA facility investigation (RFI). The number of facilities with an RFI imposed is not a direct subset of RCRA TSD facilities, instead it is a subset of TSD facilities and hazardous waste generators. While TSD facilities are statutorily required to address corrective action, EPA has discretionary authority to impose corrective action on generators. As discussed in Section 1.2, these facilities may also provide either a long-term or near-term opportunity where no CMS is necessary to begin corrective activity begins in accordance with the stabilization initiative.

9.5 The Market at UST Sites Managed by the State

Tennessee falls into the middle range among states in Region 4 in terms of its number of active tanks. There are 28,103 active tanks in the state. Active tanks are defined as tanks still in service (EPA 1993). Table 9-4 presents data on the number of USTs in Tennessee. As of March 31, 1996, the EPA Office of Underground Storage Tanks (OUST) had identified 887 leaking tanks sites in Tennessee at which cleanup had yet to be initiated. That number represents the difference between the two data elements "confirmed releases" and "cleanups initiated." Cleanups at USTs with soil contamination usually are completed within 6 months to 2 years after a site has been identified. Cleanup at USTs with groundwater contamination usually are completed within 2 to 5 years after the site has been identified. Therefore, the number of USTs identified as opportunities will change rapidly.

In national studies of USTs performed by EPA in 1991 and 1992, it was found that the majority, or about 87 percent of the tanks, are used to manage gasoline or diesel fuel, kerosene, or heating oil. Of the remaining USTs, 11 percent manage other materials and wastes, such as used oil (4 percent), hazardous

material (2 percent), and other material (5 percent) or are empty (2 percent). The majority of the contamination problems are related to the contamination of soils and groundwater with petroleum products that contain volatile organic compounds (VOC) and semivolatile organic compounds (SVOC).

As indicated previously, the UST program is managed by TDEC's Division of Underground Storage Tanks, located in TDEC's central office in Nashville. Further information on the locations of leaking USTs can be obtained from the State (see Section 9.7).

Table 9-4
Underground Storage Tank Corrective Action Measures in Tennessee as of the First Half of FY96

Active Tanks	Tanks Closed	Confirmed Releases	Cleanups Initiated	Cleanups Completed	Cleanups Not Yet Initiated
28,103	24,721	8,154	7,267	6,647	887

Source: EPA Office of Underground Storage Tanks Semi-Annual Activity Report for the First Half of Fiscal Year 1996 (ending March 31, 1996)

9.6 The Market at Federal Facility Sites in Tennessee

There are three DOE sites at which remedial action activities are planned and 9 operational or closing Department of Defense (DoD) installations and formerly used defense sites (FUDS) in Tennessee at which such activities are planned or are underway. The following subsections discuss those sites.

9.6.1 DoD Sites

At the 9 DoD installations are 234 active sites, 162 of which have future remedial action planned. Active sites are those at which some form of remediation activity is planned or underway. The total number of sites to be remediated may exceed this figure because DoD typically does not plan remediation at a site until at least an RI/FS has been completed.

The *Defense Environmental Restoration Program Annual Report to Congress for 1994* indicates that a total of approximately $591 million is estimated to be needed through the year 2029 in all phases of cleanup at the nine installations. The facility having the largest allocation of funds is the Milan Army Ammunition Plant ($247 million). Many of the sites identified at the nine installations are undergoing or are scheduled to undergo an RI/FS and therefore are at a relatively early stage of the remediation process.

The majority of the contaminants at the sites at which remediation currently is planned fall into one of three broad categories: petroleum, oil, and lubricants (POL); VOCs; and metals. Those contaminants are found in the soil at all the sites and in the groundwater in a large percentage of the sites. Data on volumes of soil and groundwater to be treated are not available. Table 9-5 provides information on the individual installations and sites subject to remediation at those installations. The number of sites to be cleaned up in the future is defined in the DERP. Cleanup already may be underway at other sites; such sites have not been included in the total because it is unlikely that they will afford opportunity for vendors of innovative technologies. Of the DoD sites in Tennessee, Milan Army Ammunition Plant and U.S. Army (USA) Defense Depot Memphis are listed on the NPL.

Table 9-5
DoD Installations and Sites in Tennessee

Name, Address, and Outyear Funding ($000)	Federal Facility Identification Number	Codes[1]	Number of Sites at Which Cleanup is Planned
Arnold Air Force Base Outyear Funding FY95-2010 $65,876	TN457172404400	A	6
Bristol Naval Weapons Industrial Reserve Plant Outyear Funding FY95-2003 $2,832	TN417008189400	A	5
Defense Depot Memphis Outyear Funding FY95-2015 $150,907	TN497152057000	A,N	65
Holston Army Ammunition Plant Outyear Funding FY95-2020 $31,607	TN421002042100	A	3
McGhee Tyson Airport Outyear Funding FY95-TBD $5,746	TN457282419600	A	6
Milan Army Ammunition Plant Outyear Funding FY95-2029 $247,391	TN421002058200	A,N	22
Naval Air Station Memphis Outyear Funding FY95-2005 $45,051	TN417002260000	A	47
Sewart Air Force Base Outyear Funding FY95-2005 $2,252	TN49799F353200	F	4

Table 9-5 (continued)
DoD Installations and Sites in Tennessee

Name, Address, and Outyear Funding ($000)	Federal Facility Identification Number	Codes[1]	Number of Sites at Which Cleanup is Planned
Volunteer Army Ammunition Plant Outyear Funding FY95-2010 $40,187	TN421002093300	A	4

Source: *Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994*

[1] Codes:
A = The installation is currently operational or on the BRAC list, and cleanup is covered by DERA or BRAC funds
F = The installation is no longer active and is managed by the FUDS Branch
N = The site is listed on the final National Priorities List

At Milan Army Ammunition Plant, 12 OUs have been defined under the NPL listing. At USA Defense Depot Memphis there are four OUs defined under the NPL listing. At some of those sites, there also are areas subject to requirements under RCRA for corrective action. At Milan Army Ammunition Plant, five OUs currently are undergoing corrective action.

9.6.2 DOE Sites

There are three DOE sites in Tennessee at which remediation currently is planned or is underway, all of which are located at the Oak Ridge Reservation (the K-25 Site, the Y-12 Site, and the Oak Ridge National Laboratory). The entire Oak Ridge Reservation was placed on the NPL in 1989. At the reservation, there are 26 OUs defined under the NPL as requiring remediation. At some of the Oak Ridge sites, there also may be areas subject to requirements under RCRA for corrective action. The Oak Ridge sites are discussed below.

The Oak Ridge K-25 Site covers 1,500 acres. It originally produced enriched uranium hexafluoride but now hosts operating waste treatment and storage facilities, including an incinerator regulated under the Toxic Substances Control Act (TSCA), a facility for the destruction of mixed wastes. Low-level radioactive and mixed wastes also are stored at the site. RI/FSs are planned for 16 OUs, and PA/SIs are planned for 12 sites. Remediation work such as the K-14 bioremediation project will continue. Significant remedial actions will accompany the following records of decision (ROD): K-1407-B and C Ponds (1993), K-1070 OU (1998), and the K-901 OU (1998). Initiation of interim corrective actions will continue, as needed. Funding for FY95 through FY98, covering corrective action and waste management and environmental restoration, totals approximately $1.32 billion.

The Oak Ridge National Laboratory (ORNL) is comprised of several sites and covers approximately 2,900 acres. The laboratory provides waste treatment, storage, and disposal support to DOE's research and development programs. Remedial action at ORNL is proceeding under a Federal Facilities agreement (FFA) for the Oak Ridge Reservation. For the FFA, ORNL has been divided into regions known as waste area groupings (WAG) for assessment and cleanup. Preliminary investigations indicate that there is no need for further action at eight of the WAGs. The remaining WAGs (1 through 11 and 13) contain about 222 contaminated sites where investigations and remediation continue. Current activity is based upon interim actions that address conditions that have potential for affecting human health and the environment. Interim remedial measures have been identified and planned at most of the WAGs at ORNL. Approximately 300 RCRA and CERCLA units, divided into 20 WAGs, have been identified at ORNL. Of those 300 units, 222 units included in 12 of the WAGs potentially require remediation. Wastes are primarily liquid and solid low-level and transuranic radioactive wastes. Nonradioactive wastes include organic solvents, corrosive waste, polychlorinated biphenyls (PCB), and heavy metals. Funding for FY95 through FY98, covering corrective action and waste management and environmental restoration, totals approximately $1.1 billion.

The Y-12 Site, which occupies 811 acres, was established to separate uranium isotopes by an electromagnetic process. The plant contains many facilities that have been used for treatment, storage, or disposal of hazardous and radioactive materials and wastes. Funding for FY95 through FY98, covering corrective activities and waste management and environmental restoration totals approximately $724 million.

9.7 Further Market Information for Tennessee

A vendor that wishes to obtain information about sites in Tennessee that are managed by EPA may write to:

U.S. Environmental Protection Agency
Region 4
345 Courtland Street, NE
Atlanta, GA 30365

For information on RCRA facilities, the envelope should be marked to the attention of the Freedom of Information Act Officer, Office of RCRA and Federal Facilities. For information on CERCLA facilities in Tennessee, the envelope should be marked to the attention of the Freedom of Information Act Officer,

North Superfund Remedial Branch. The requestor will be billed for the information, according to the volume of information provided. For more information on USTs handled by EPA, vendors may contact:

John Mason
U.S. EPA, Region 4
345 Courtland Street, NE
Mail Code 4WM-GWP-15
Atlanta, GA 30365

TDEC's Division of Superfund is a good source of information about the hazardous waste sites that the department manages. A list of sites requiring remediation can be obtained from the Division of Superfund. The office can be contacted at:

The Tennessee Department of Environment and Conservation
Division of Superfund
401 Church Street
4th Floor, L & C Tower Building
Nashville, TN 37243-1538

The names and addresses of TDEC's regional field offices are listed below:

Nashville Field Office
537 Brick Church Park Drive
Nashville, TN 37243-1550
(615) 741-5940
(615) 741-8941 (fax)
Manager: Brenda Apple

Nashville Central Office
401 Church Street
4th Floor Annex, L & C Building
Nashville, TN 37243-1538
(615) 532-0900
(615) 532-0938
Director: Clinton W. Willer
Asst Director: Frank Grubbs

Jackson Field Office
362 Carriage House Drive
Jackson, TN 38305-2222
(901) 661-6200
(901) 661-6283 (fax)
Manager: Ron Sells x6204

Chattanooga Field Office
540 McCallie Street, Suite 550
Chattanooga, TN 37402
(615) 634-5745
(615) 634-6389
Manager: Wayne Everett x5758

Johnson City Satellite Field Office
2305 Silverdale Road
Johnson City, TN 37601-2162
(615) 854-5400
(615) 854-5401
Manager: Darrell Hale x5463

Memphis Field Office
290 Mt Moriah, Suite E-645
Memphis, TN 38115-1520
(901) 368-7939
(901) 368-7979 (fax)
Manager: Jordan English x7953

Knoxville Field Office
2700 Middlebrook Pike
Knoxville, TN 37921
(615) 594-6466
(615) 594-6105 (fax)
Manager: Dan Hawkins

A list of leaking USTs is available from TDEC's Division of Underground Storage Tanks. The list and additional information can be obtained from:

Tennessee Department of Environment and Conservation
Division of Underground Storage Tanks
401 Church Street
4th floor, L & C Tower Building
Nashville, TN 37243-1541
(615) 532-0945

For information about DOE sites or any of DOE's technology development assistance programs, vendors may contact:

DOE's Center for Environmental Management Information
470 L'Enfant Plaza East
Suite 7112
Washington, DC 20024
(800) 736-3282

The U.S. Department of Defense (DoD) does not have a single point of contact that handles all of DoD's environmental restoration initiatives, site-level information, and technology programs. The Defense Environmental Restoration Program Annual Report to Congress for FY 1995 contains detailed information on environmental restoration accomplishments and schedules at DoD installations world-wide. This report is available on the Internet at the DoD Environmental Restoration home page at:

http://www.dtic.mil/envirodod/

The home page also provides links to other internet sites that pertain to DoD environmental restoration activities.

Table 9-1
Tennessee Department of Environment and Conservation Division of Superfund Promulgated Sites As of February 15, 1995

Site ID	Name	County	Region[1]
01-504	DOE Oak Ridge	Anderson	K
01-579	Dupont Smith/Atomic City	Anderson	K
01-580	Anderson County Landfill	Anderson	K
05-501	Alcoa Site/South Plant	Blount	K
05-503	Alcoa/Site II	Blount	K
06-501	Olin Corporation Site	Bradley	C
06-505	Duracell Inc.	Bradley	C
06-509	Cleveland Plastics	Bradley	C
06-511	Magic Chef Site	Bradley	C
10-502	American Bemburg Plant	Carter	JC
10-503	East TN Chair Co.	Carter	JC
10-504	Ivan Miller/Roan Mtn.	Carter	JC
10-508	Old Bemberg Building	Carter	JC
15-504	Arapahoe/Rock Hill Labs	Cocke	K
15-505	Newport Dump	Cocke	K
15-508	Wall Tube & Metal Product	Cocke	K
19-511	Stauffer Chemical	Davidson	N
19-524	Municipal Landfill-Lebanon Road	Davidson	N
19-533	John P. Saad & Son Inc.	Davidson	N
19-549	Pal Hawkins Site Landfill	Davidson	N
19-551	Junkyard Cave Site	Davidson	N
19-553	General Electric Shop	Davidson	N
19-559	Air National Guard - Berry Field	Davidson	N
24-503	Gallaway Pits	Fayette	M
24-505	A.R. Brooks	Fayette	M
24-508	Chemet Co.	Fayette	M
26-501	AEDC Site	Franklin	N
27-501	B&H Transformer	Gibson	J
27-505	MAAP Site	Gibson	J

[1] See section 9.7 for an explanation of the regional field office codes.

Table 9-1 (continued)
Tennessee Department of Environment and Conservation Division of Superfund
Promulgated Sites As of February 15, 1995

Site ID	Name	County	Region[1]
33-508	Southern Wood Piedmont	Hamilton	C
33-527	Velsicol/Residue Hill	Hamilton	C
33-532	Amnicola Dump	Hamilton	C
33-540	Montauge Park	Hamilton	C
33-541	Hamill Road Dump (SDIR) Alton Park	Hamilton	C
33-542	Refer to 33-547 (Hamill Road Dump #2)	Hamilton	C
33-543	Hamill Road Dump #3	Hamilton	C
33-547	Tennessee Products (Chatt. Coke)	Hamilton	C
33-550	North Hawthorne Dump	Hamilton	C
33-556	3M GE Ceramics-Chattanooga	Hamilton	C
33-557	USVAAP Site	Hamilton	C
33-584	Chattanooga Creek	Hamilton	C
33-596	Mor Flow/W.L. Jackson Co.	Hamilton	C
33-599	D.M. Steward Manufacturing	Hamilton	C
33-617	Birchwood Pike Site	Hamilton	C
33-618	Morningside Chemicals	Hamilton	C
33-619	American Plating	Hamilton	C
33-620	National Microdynamics	Hamilton	C
33-626	Morgan St. Demolition Dump	Hamilton	C
35-506	Velsicol Chemical	Hardeman	J
37-503	US/HAAP Area B WWII Dump Site B	Hawkins	JC
37-504	US/HAAP Rock Quarry	Hawkins	JC
37-506	US/HAAP Area B Coal Tar Trench	Hawkins	JC
37-508	AFG Industries, Inc.	Hawkins	JC
40-505	Wright, Carl Septic Serv	Henry	J
40-506	Henry County Boneyard	Henry	J
40-508	Oak Grove (Celotex) Site	Henry	J
41-504	Wrigley Charcoal	Hickman	N
45-503	Hodgson, Hollis Dump	Jefferson	K
47-506	Ideal Basic Site	Knox	K

[1] See section 9.7 for an explanation of the regional field office codes.

Table 9-1 (continued)
Tennessee Department of Environment and Conservation Division of Superfund Promulgated Sites As of February 15, 1995

Site ID	Name	County	Region[1]
47-514	Witherspoon Landfill	Knox	K
47-518	Badgett Road Landfill	Knox	K
47-521	Southern Rail/Coster Shop	Knox	K
47-522	C.A. Rose Farm (EPA 2744)	Knox	K
47-523	Foote Mineral/CAS Walker (Dante)	Knox	K
47-524	Middlebrook Pike Gas Site	Knox	K
47-530	Screen Art Inc.	Knox	K
47-533	TRW Carr Division	Knox	K
47-541	Withersponn Recycling	Knox	K
47-545	Sanitary Laundry & Dry Cleaners	Knox	K
49-506	Kenneth Scallions	Lauderdale	J
50-502	Murray Ohio Landfill	Lawrence	N
50-505	Horseshoe Bend Site	Lawrence	N
53-502	Greenback Ind. Inc.	Loudon	K
53-503	Lenoir Car Works Dump	Loudon	K
54-505	Beaunit Mills	McMinn	C
54-509	Hullander Site	McMinn	C
55-508	Michie Dump	McMairy	J
57-501	Owens Corning/Blasingame	Madison	J
57-506	Owens Corning/Davidson Site	Madison	J
57-508	American Creosote Works	Madison	J
57-510	Porter Cable Corp.	Madison	J
57-513	Iselin Rail Yard (ICG)	Madison	J
57-516	Noma/ITT Site	Madison	J
57-517	Boone Dry Cleaners	Madison	J
58-502	North American Environment	Marion	C
58-504	Scratch Ankle Road Dump	Marion	C
59-502	Heil Quaker Corp.	Marshall	N
59-503	Lewisburg Dump	Marshall	N
60-501	Stauffer Site	Maury	N

[1] See section 9.7 for an explanation of the regional field office codes.

Table 9-1 (continued)
Tennessee Department of Environment and Conservation Division of Superfund
Promulgated Sites As of February 15, 1995

Site ID	Name	County	Region[1]
60-529	Ind. Liquids Recycling Inc.	Maury	N
60-534	Monsanto Site	Maury	N
62-505	Red Ridge Landfill	Monroe	K
63-506	PCB Site/Ft. Campbell Res.	Montgomery	N
63-501	Melhorn Silver Recovery	Morgan	K
71-502	Putman Co. Landfill	Putman	N
73-504	Roane Alloys (Roane Limited)	Roane	K
75-512	Wilkerson Dump	Rutherford	N
75-513	Saad/Silver Springs	Rutherford	N
75-519	John P. Saad (Smyrna Airport)	Rutherford	N
75-520	Melvin Hamby Site	Rutherford	N
75-522	Old Murfreesboro County Dump	Rutherford	N
76-502	Oneida Railway Site	Scott	K
79-503	Arlington Blending	Shelby	M
79-517	Bellevue Avenue Landfill	Shelby	M
79-518	Cypress Creek	Shelby	M
79-519	Tulane Road Site	Shelby	M
79-520	Firestone Tire & Rubber	Shelby	M
79-522	Chromasco	Shelby	M
79-525	International Harvester	Shelby	M
79-528	Velsicol Chemical North Site	Shelby	M
79-529	Velsicol Chemical Middle Site	Shelby	M
79-530	Velsicol Chemical South Site	Shelby	M
79-536	W.R. Grace Co.	Shelby	M
79-549	Chickasaw Ordinance Works	Shelby	M
79-522	Carrier Corporation	Shelby	M
79-561	Nilok Chemical Co.	Shelby	M
79-569	Chapman Chemical Co.	Shelby	M
79-582	Diesel Recon Co.	Shelby	M
79-598	North Hollywood Dump	Shelby	M

[1] See section 9.7 for an explanation of the regional field office codes.

Table 9-1 (continued)
Tennessee Department of Environment and Conservation Division of Superfund
Promulgated Sites As of February 15, 1995

Site ID	Name	County	Region[1]
79-604	Memphis Public Works/Jackson Pits	Shelby	M
79-719	U.S. Naval Air Station Site	Shelby	M
79-736	US Army/Defense Depot	Shelby	M
79-739	East Holmes Road	Shelby	M
79-740	US NAS/Plating Shop Storm Sewer N121	Shelby	M
79-742	Pulvair Corp.	Shelby	M
79-781	John Little/Drum Site	Shelby	M
79-785	Larouche Industries	Shelby	M
79-798	61 Industrial Park	Shelby	M
79-800	Crotox Chemical Products Co.	Shelby	M
82-506	Automated Indust. Disp Ser. (AIDS)	Sullivan	JC
82-508	US Army Holston Ammunition Area A	Sullivan	JC
82-509	TN Eastman/#1 Kit Bottom	Sullivan	JC
82-510	TN Eastman/#2 Triangle Facility	Sullivan	JC
82-511	TN Eastman/#3 Waste Facility B-245	Sullivan	JC
82-512	TN Eastman/#4 Long Island Settling Basin	Sullivan	JC
82-514	Sperry/Unisys	Sullivan	JC
82-515	Bristol Dump	Sullivan	JC
82-516	Earhart Site	Sullivan	JC
82-517	AFG Dump Site	Sullivan	JC
82-522	Bear Hollow Dump	Sullivan	JC
82-524	Blountville Spring	Sullivan	JC
82-526	Bethel Drive Site	Sullivan	JC
82-528	Appalachian Smelting & Refining	Sullivan	JC
83-501	Federal Chemical (AKA Chem. Fuel)	Sumner	N
86-501	Bumpass Cove Landfill	Unicoi	K
86-502	Bumpass Cove Fowler Area	Unicoi	K
86-505	Morrell Electric	Unicoi	K
89-504	Century Electirc Facility	Warren	N
90-505	Washington Co. Utility	Washington	JC

[1] See section 9.7 for an explanation of the regional field office codes.

Table 9-1 (continued)
Tennessee Department of Environment and Conservation Division of Superfund
Promulgated Sites As of February 15, 1995

Site ID	Name	County	Region[1]
90-510	Cash Hollow Dump	Washington	JC
91-501	Mallory Capacitor Co.	Wayne	N
91-502	Old Waynesboro City Dump	Wayne	N
91-504	Wayne County/Hardin Hollow Landfill	Wayne	N
94-508	Kennon Site/Genesco	Williamson	N
95-501	TRW Inc./Ross Gear Divison	Wilson	N

[1] See section 9.7 for an explanation of the regional field office codes.

Source: Tennessee Department of Superfund

Table 9-3
NPL Sites in Tennessee at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME (LEAD)	RA PLANNED START DATE[2]	RI/FS COMPLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: AMERICAN CREOSOTE WORKS (JACKSON PLANT) NPL STATUS: Final				EPA ID: TND007018799 SIZE: 160 Acres		ADDRESS: MEADOW ST, JACKSON, TN 38301 TYPE: Abandoned - No Use	
02	GROUND WATER CONTROL (F)	9/30/96	N	GW	NA	NA	NA
SITE NAME: MILAN ARMY AMMUNITION PLANT NPL STATUS: Final				EPA ID: TN0210020582 SIZE: 6 Acres		ADDRESS: HWY 104, MILAN, TN 38358 TYPE: Ordnance Production and Storage	
03	SURFACE DRAINAGE DITCHES (FF)	3/30/97	N	SD	NA	NA	NA
04	OPEN BURNING GRDS/ FORMER ADA (FF)	12/30/96	N	GW; SO	NA	NA	NA
05	SUMPS (FF)	3/31/97	N	GW; SD; SO	NA	NA	NA
06	CLOSED LANDFILL (FF)	3/31/97	N	GW; SO	NA	NA	NA
07	FORMER BORROW PIT (FF)	3/31/97	N	SO	NA	NA	NA
08	B-LINE AREA (FF)	3/31/97	N	GW; SD; SO	NA	NA	NA
09	CURRENT AMMO DESTRUCTION AREA (FF)	3/31/97	N	GW; SO	NA	NA	NA
10	FORMER BURN-OUT AREA (SITE SCN) (FF)	3/31/97	N	SO	NA	NA	NA
11	CURRENT LANDFILL (SITE SCREEN) (FF)	3/31/97	N	GW; SO	NA	NA	NA
12	SALVAGE YARD (SITE SCRNING) (FF)	3/31/97	N	SO	NA	NA	NA
13	OFF SITE CITY WELLS (FF)	3/31/97	N	GW	NA	NA	NA
14	OFF SITE O-LINE PLUME (FF)	6/30/96	Y	GW	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 9-3 (continued)
NPL Sites in Tennessee at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	OPERABLE UNIT (LEAD)	RA PLANNED START DATE[2]	RI/FS COMPLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: MURRAY OHIO DUMP NPL STATUS: Final					EPA ID: TND980728836 SIZE: 27 Acres		ADDRESS: GLENN SPRINGS RD, LAWRENCEBURG, TN 38464 TYPE: Refuse Systems--Industrial Landfill	
01	RI/FS	(RP/FE)	3/31/97	Y	GW; RC; SD; SO; SW	NA	METALS	NA
SITE NAME: US DOE OAK RIDGE RESERVATION NPL STATUS: Final					EPA ID: TN1890090003 SIZE: 58,000 Acres		ADDRESS: BETHEL VALLEY ROAD, OAK RIDGE, TN 37830 TYPE: Dept. of Energy	
04	CLINCH RIVER	(FF)	12/30/99	N	NA	NA	NA	NA
05	ORNL WAG 10 DEEP INJECTION	(FF)	9/30/99	N	NA	NA	NA	NA
09	K-1420 OU	(FF)	9/30/99	N	NA	NA	NA	NA
10	LEFPC OU	(FF)	9/30/96	N	NA	NA	NA	NA
11	Y-12 NITRIC ACID PIPE	(FF)	12/31/99	Y	NA	NA	NA	NA
12	K-1064 OU	(FF)	9/30/98	N	NA	NA	NA	NA
13	BEAR CREEK FLOOD PLAIN/SED	(FF)	3/31/01	N	GW	NA	VOCs; NITRATES	NA
14	ORNL WAG 1 SURF IMPOUNDMENT	(FF)	9/30/98	N	NA	NA	NA	NA
15	K-770 OU	(FF)	3/31/01	N	NA	NA	NA	NA
19	ORNL WAG 5 BURIAL COMPLEX	(FF)	3/30/99	N	NA	NA	NA	NA
20	BC OU2 RUST SPOIL AREA	(FF)	3/31/99	N	NA	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

Al	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 9-3 (continued)
NPL Sites in Tennessee at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	OPERABLE UNIT (LEAD)	RA PLANNED START DATE[2]	RI/FS COMPLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
21	K-901	(FF)	6/30/99	N	NA	NA	NA	NA
24	LOWER WATTS BAR	(FF)	9/30/00	N	NA	NA	NA	NA
SITE NAME: US DOE OAK RIDGE RESERVATION **NPL STATUS:** Final				**EPA ID:** TN1890090003 **SIZE:** 58,000 Acres			**ADDRESS:** BETHEL VALLEY ROAD, OAK RIDGE, TN 37830 **TYPE:** Dept. of Energy	
25	ORNL WAG 6 BURIAL COMPLEX	(FF)	9/30/99	N	NA	NA	NA	NA
26	CR OU 2 FCAP, MCCOYBR, ROG	(FF)	3/30/97	N	NA	NA	NA	NA
27	ORAU - SOUTH CAMPUS FACILITY	(FF)	3/31/96	N	GW; SO	NA	TCE	NA
28	Y-12, UEFPC OU 3	(FF)	9/30/99	N	NA	NA	NA	NA
29	BC OU04 HYDROLIC UNIT	(FF)	3/30/97	N	NA	NA	NA	NA
30	CR OU1 SECURITY PITS	(FF)	9/30/01	N	NA	NA	NA	NA
31	CR OU4 ROGERS QUARRY	(FF)	12/30/99	N	NA	NA	NA	NA
32	BC OU1 BURIAL GROUNDS	(FF)	6/30/00	N	NA	NA	NA	NA
33	ORNL WAG1 NS TANK FARM	(FF)	9/30/99	N	NA	NA	NA	NA
34	ORNL WAG 2 SURF WATER/SED	(FF)	9/30/99	N	NA	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

Al	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 9-3 (continued)
NPL Sites in Tennessee at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME (LEAD)	RA PLANNED START DATE[2]	RI/FS COMPLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
37	K1070 C/D LF (LINKED TO OU6) (FF)	3/30/99	N	NA	NA	NA	NA
38	KERR HOLLOW QUARRY (FF)	6/30/95	N	NA	NA	NA	NA
40	ORNL WAG 4 BURIAL COMPLEX (FF)	6/30/97	N	NA	NA	NA	NA
SITE NAME: USA DEFENSE DEPOT MEMPHIS **NPL STATUS:** Final				**EPA ID:** TN4210020570 **SIZE:** 0 Acres		**ADDRESS:** 2163 AIRWAYS BLVD, MEMPHIS, TN 38114 **TYPE:** Misc.	
01	DUNN FIELD (FF)	9/30/97	N	GW; SD; SO; SW	NA	NA	NA
SITE NAME: USA DEFENSE DEPOT MEMPHIS **NPL STATUS:** Final				**EPA ID:** TN4210020570 **SIZE:** 0 Acres		**ADDRESS:** 2163 AIRWAYS BLVD, MEMPHIS, TN 38114 **TYPE:** Misc.	
02	SW QUADRANT MAIN INSTALLATION (FF)	9/30/99	N	NA	NA	NA	NA
03	SW WATERSHED & GOLF COURSE (FF)	9/30/99	N	NA	NA	NA	NA
04	NORTH CENTRAL AREA, MAIN INST (FF)	12/30/99	N	NA	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

Al	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 9-3 (continued)
NPL Sites in Tennessee at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME (LEAD)	RA PLANNED START DATE[2]	RI/FS COMPLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: VELSICOL CHEMICAL CORP. (HARDEMAN COUNTY) NPL STATUS: Final				EPA ID: TND980559033 SIZE: 27 Acres		ADDRESS: TOONE-TEAGUE RD; TOONE, TN 38381 TYPE: Refuse Systems--Industrial Landfill	
01	VELSICOL/HARDEMAN GROUND-WATER (RP/FE)	12/31/94	Y	GW	NA	PESTICIDES/ HERBICIDES; VOC; METALS	Air Stripping; Disposal of Residual; Leachate Treatment; Precipitation; Monitoring
02	VELSICOL/HARDEMAN SOURCE (RP/FE/F)	3/31/97	N	RC; SO	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

Table 9-3 (continued)
NPL Sites in Tennessee at Which Marketing Opportunities Exist[1]

OPERABLE UNIT NUMBER	OPERABLE UNIT NAME	OPERABLE UNIT (LEAD)	RA PLANNED START DATE[2]	RI/FS COMPLETED	MEDIA	VOLUME	CONTAMINANTS	TECHNOLOGY
SITE NAME: WRIGLEY CHARCOAL PLANT; NPL STATUS: Final; EPA ID: TND980844781; SIZE: 1 Acre; ADDRESS: OLD CHARCOAL RD 1 MI S OF LYLE, WRIGLEY, TN 37098; TYPE: Abandoned - No Use								
01	OPERABLE UNIT #01	(F/S)	2/01/95	Y	DB; GW; LW; OT; SL; SO; ST; SW	500 gal; 1,000 cy; 247 cy; 4,000 cy; 200 cy	VOC; METALS; OTHER INORGANICS; OTHER ORGANICS	Incineration with On-Site Disposal of Residual; Off-Site Treatment; Solidification and Stabilization; Monitoring; Other/Unknown/Undetermined Technology
02	OPERABLE UNIT #02	(F)	3/20/97	N	LW; SD; SL; SO; ST; SW	NA	NA	NA
03	OPERABLE UNIT #03	(F)	6/01/99	N	AI	NA	NA	NA

[1] Data as of May 1995 from EPA CERCLIS and RELAI Databases. See Chapter 1 for a detailed description of these data sources.
[2] Some RA planned start dates have passed; the actual RA start date had not been recorded as of March 1995. This circumstance may have occurred because (1) the project is running later than planned or (2) the actual RA start date was recorded after the data were extracted.

Abbreviations:

AI	Air	F	EPA Fund-Financed	MR	Mixed Funding Federal/RP	PS	PRP Response Under State	SD	Sediment	ST	Solid Waste
DB	Debris	FE	Federal Enforcement	MS	Man-made Structures	RA	Remedial Actions	SI	Single Intake	SW	Surface Water
DK	Unknown	FF	Federal Facilities	NA	Not Available	RC	RCRA Hazardous Waste	SL	Sludge	UXO	Unexploded Ordnance
EP	EPA In-House	GW	Groundwater	NO	No Media	RP	Responsible Party	SO	Soil	VOCs	Volatile Organic Compounds
ES	Entire Site	LW	Liquid Waste	OT	Other	S	State, Fund-Financed	SR	PRP Lead Under State		

APPENDIX A

LIST OF ALL REGION 4 DOD INSTALLATIONS EITHER WITH TWO OR FEWER SITES OR ESTIMATED COSTS FOR CLEANUP OF LESS THAN OR EQUAL TO $1 MILLION

List of All Region 3 DoD Installations Either With Two or Fewer Sites or Estimated Costs for Cleanup of Less Than or Equal to $1 Million

Facility Name	FFID	Number of Sites	Estimated Completion Date	FY95 Cost to Complete $000
DELAWARE				
DELAWARE TARGET AREAS	DE39799F133400	2	TBD	70
DOVER AFB PRE BOMB RANGE	DE39799F133500	1	2008	2,003
DOVER SURVIVAL TRAINING ANNEX	DE39799F135800	2	2008	3,773
DRAVO CORPORATION	DE39799F136400	1	TBD	252
FORT DELAWARE	DE39799F134100	2	2008	1,983
LENAPE ORDNANCE MOD CENTER	DE39799F134400	1	TBD	0
US ARMY RESERVE CENTER DOVER	DE3210015C0500	5	TBD	0
US ARMY RESERVE CENTER LEWES	DE3210015C1600	5	TBD	0
Total DELAWARE		**19**		**8,081**
DISTRICT OF COLUMBIA				
AAA FORT DUPONT	DC39799F881200	1	2008	1,934
ANACOSTIA NAVALS STATION	DC317000115500	5	TBD	0
CAMP SIMMS	DC39799F131200	2	2008	5,682
CATHOLIC UNIVERSITY, RESERVE STATION	DC39799F812500	1	2008	1,968
FORT DUPONT PARK SITE	DC39799F131800	1	2008	1,934
FORT MCNAIR	DC321002100400	7	TBD	626
NAVAL STATION ANACOST ANNEX	DC39799F132900	1	2008	2,092
SPRING VALLEY	DC39799F833000	1	2008	4,078
WASHINGTON NAVY YARD NAVALSTA	DC39799F133200	2	2008	1,923
WASHINGTON COMNAVDIST	DC317002431000	3	TBD	361
WASHINGTON DC NAVOBSY	DC317002345400	1	TBD	0
WASHINGTON NRL	DC317002431100	3	TBD	0
Total DISTRICT OF COLUMBIA		**28**		**20,598**
MARYLAND				
AAA SITE CENTER BUREAU	MD39799F139400	1	2008	1,923
ADELPHI LABORATORY CENTER	MD321002276200	42	TBD	300
AIR FORCE PLANT 11	MD39799F141700	1	2008	4,000
ANNAPOLIS NRT FAC	MD317002349200	1	TBD	0
ASSATEAQUE ISLAND	MD39799F143900	1	2008	2,113
CHELTENHAM NAVCOMMU	MD317009000700	3	TBD	0
CHESAPEAKE BAY DET NRL	MD317002431100	9	TBD	0
CP SOMERSET	MD39799F141100	2	2008	2,022
EAST COAST RADIO REC STATION	MD39799F141500	2	TBD	443
FORT HOLABIRD	MD39799F139200	1	TBD	0
FORT HOLABIRD CRIMES REC. CENTER	MD321002041900	9	TBD	0
FORT HOWARD	MD39799F140600	2	2008	3,494
FORT RITCHIE	MD321002075800	4	TBD	0
HAWKINS POINT TER FACILITY	MD39799F140500	1	TBD	0
HERMANVILLE GAP FILLER ANNEX	MD39799F142200	1	TBD	118
INDIAN HEAD NAVEODTECHCEN	MD317009000100	14	TBD	0
JOHNS HOPKINS UNIVERSITY LAB	MD39799F812800	1	2008	2,016
MORTON THIOKOL (AMMUNITION PLT)	MD39799F144200	1	TBD	114
NATIONAL-DEF STORAGE DEPOT BALT	MD39799F137300	3	TBD	492
NAVAL RESEARCH LAB WALDORF	MD317000894700	1	TBD	0
NAVAL RESERVE CENTER BALTIMORE	MD317002252600	1	TBD	0
NAVAL STATION ANNAPOLIS	MD317009002200	1	TBD	0
NIKE 03	MD39799F136800	1	TBD	0
NIKE BA-30/31 (TOLCHEST)	MD39799F137700	2	2008	1,905
NIKE BA-43 (FT.SMALLWOO)	MD39799F138000	2	2008	1,706
NIKE BA-79/W-05 (GRANIT)	MD39799F138400	2	2008	1,681
NIKE BA-92 (GRNSPNG/TWS)	MD39799F138600	2	2008	1,560

Source: Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994, Table B-2

List of All Region 3 DoD Installations Either With Two or Fewer Sites or Estimated Costs for Cleanup of Less Than or Equal to $1 Million

Facility Name	FFID	Number of Sites	Estimated Completion Date	FY95 Cost to Complete $000
MARYLAND (continued)				
NIKE BA-W-44 (WALDORF)	MD39799F138100	2	2008	2,372
NIKE BAT W-93 (LAYTON)	MD39799F138700	2	2008	1,845
NIKE W-25 (DAVIDSONVILLE)	MD39799F137500	2	2008	1,560
NIKE W-35 (CROOM)	MD39799F137900	2	2008	1,905
NIKE W-36 (CROOM)	MD39799F137800	2	2008	1,725
NIKE W-54 (POMONKEY)	MD39799F138300	1	TBD	260
NIKE W-92 (ROCKVILLE)	MD39799F138500	2	2008	1,868
NIKE W-93 CONTROL AREA	MD39799F820500	1	TBD	0
PHOENIX MILITARY RESERVATION	MD321002440200	4	TBD	0
POMONKEY TEST RANGE NRL	MD317002431102	1	TBD	22
Total MARYLAND		**130**		**35,444**
PENNSYLVANIA				
AAF INTELLIGENCE SCH	PA39799F147700	1	TBD	49
AIR FORCE PLANT 45	PA39799F153500	1	TBD	0
AMSA 112 LOCK HAVEN	PA32100PA06000	8	TBD	235
AMSA 29 READING	PA32100PA14700	9	TBD	235
ARMY MAP SERVICE	PA39799F887300	0	TBD	10
AVCO	PA39799F145100	2	TBD	205
BIRDSBORO ARMY TK FOUNDRY	PA39799F147800	1	TBD	460
BRISTOL VETERANS US ARMY RESERVE CTR	PA32100PA01000	9	TBD	32
CONNELLSVILLE AIRPORT	PA39799F155900	2	2008	2,577
CROSS AND H/STONE MOUNTAIN	PA39799F148300	2	TBD	90
CROYLAND PLANT	PA39799F825300	1	2008	2,058
EDGEMONT US ARMY RESERVE CENTER	PA32100PA02200	15	TBD	15
ELRAMA ARMORY COMPLEX	PA321004215000	13	TBD	0
ESSINGTON NATIONAL GUARD TARGE RGE	PA39799F154100	2	2008	2,573
FEDERAL LABORATORIES	PA39799F841800	1	TBD	10
HANOVER GAP FILLER ANNEX	PA39799F150600	1	TBD	115
JOHNSTOWN SHELL PLANT	PA39799F808200	1	TBD	10
MARINE CORPS TRAINING CENTER, PA	PA39799F152900	1	TBD	114
MARCO RESERVE CENTER	PA39799F153000	1	TBD	431
MARIETTA AIR FORCE STATION	PA39799F150900	5	TBD	231
MIDDLETOWN AIR DEPOT	PA39799F144500	2	2008	1,598
NAVAL INDUSTRIAL RESERVE GEAR PLANT	PA39799F151700	1	TBD	326
NAVAL RESERVE CENTER	PA39799F152800	1	TBD	80
NAVAL HOSPITAL PHILDALPHIA	PA317002725600	2	TBD	0
NEW CUMBERLAND ARMY DEPOT	PA39799F147200	1	TBD	760
NIKE BAT PH-75/78 MEDI	PA39799F146600	2	TBD	30
NIKE PH-15 (BRISTOL)	PA39799F146400	2	2008	1,582
NIKE PH-67 (CHESTER)	PA39799F146500	2	2008	3,025
NIKE PH-91 (NORRISTOWN)	PA39799F146800	1	TBD	0
NIKE PI-03	PA39799F145700	2	TBD	740
NIKE PI-36 (N.HUNTINGDON)	PA39799F145800	1	TBD	0
NIKE PI-43 (ELRAMA)	PA39799F146000	2	TBD	730
NIRS AM BRIDGE CO	PA39799F154800	1	TBD	10
NORTH PENN US ARMY RESERVE CENTER	PA32100PA13900	5	TBD	15
PLANCOR 400 BETH FGE C	PA39799F155400	1	TBD	75
STATE COLLEGE AIR NATIONAL GUARD	PA357282627300	2	2003	1,861
SUSQUEHANNA ORDNANCE SUB-DE	PA39799F144900	2	2008	4,643
TACONY WAREHOUSE	PA321002279200	13	TBD	296
TOBYHANNA ARTILLERY RANGE	PA39799F147000	2	2008	3,783
US ARMY RESERVE CENTER GERMANTOWN	PA321001HN5400	11	TBD	0
PENNSYLVANIA (continued)				
US ARMY RESERVE CENTER HORSHAM 01	PA321001HN3500	9	TBD	0
US ARMY RESERVE CENTER INDIANA	PA3210016N3800	4	TBD	O

Source: Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994, Table B-2

List of All Region 3 DoD Installations Either With Two or Fewer Sites or Estimated Costs for Cleanup of Less Than or Equal to $1 Million

Facility Name	FFID	Number of Sites	Estimated Completion Date	FY95 Cost to Complete $000
US ARMY RESERVE CENTER HUNTINGDON	PA321001HN3700	6	TBD	0
US ARMY RESERVE CENTER MEADVILLE	PA3210016N4500	1	TBD	0
US ARMY PITTSBURGH 03	PA3210016N6100	4	TBD	0
US ARMY STATE COLLEGE	PA3210012N6900	6	TBD	0
US ARMY RESERVE CENTER WILKES-BARRE	PA3210012N7500	18	TBD	0
US ARMY RESERVE CENTER WILLIAMSPORT	PA3210012N7600	6	TBD	0
Total PENNSYLVANIA		**187**		**28,994**
VIRGINIA				
AIR FORCE PLANT 80	VA39799F164700	1	TBD	0
ALESHIRE QUARTERMASTER DEPOT	VA39799F164800	1	TBD	0
ARMY SUPPLY BASE	VA39799F781000	1	TBD	10
BUCKROE BEACH	VA39799F789100	1	TBD	150
BYRD FIELD	VA39799F165300	2	TBD	541
CAMP ALEXANDER	VA39799F824200	1	TBD	10
CAMP WALLACE	VA39799F775800	2	2008	2,120
CAPE CHARLES AFS BUNK	VA39799F156500	2	TBD	135
CHOPAWAMIC TROOP TRAINING	VA39799F166700	1	2013	2,480
COMFAIR NORFOLK-NAS OCEANA	VA39799F170400	1	TBD	0
DAM NECK FIRE CONTROL	VA317002293800	9	TBD	566
DEFENSE MAPPING AGENCY HERNDON	VA321002135400	3	TBD	20
ENGINEER DEPOT	VA39799F823800	1	TBD	10
FISHERMAN ISLAND NWR-NF	VA39799F157300	1	TBD	512
FORD PLANT	VA39799F821900	1	TBD	10
FORT AP HILL	VA321002041600	19	TBD	362
FORT LEE	VA39799F776900	4	TBD	92
FORT MONROE	VA321002060300	1	2008	1,983
FORT MONROE/FORT WOOL AREA	VA39799F158300	1	2005	1,923
FORT PICKETT A AIRPORT	VA39799F167400	2	TBD	319
JAMES RIVER SHIPBUILDING	VA39799F172700	2	2008	2,015
LAMB POINT GRD BARRACKS	VA39799F823900	1	TBD	10
MANASSAS AF COMMUNICATION FAC	VA39799F171800	2	2008	1,720
MICROWAVE STATION, VA	VA39799F165800	1	TBD	2
MIDLOTHIAN MICRO ST S	VA39799F159800	1	TBD	2
N-FOLK DEFNIK BATN-52	VA39799F161000	1	TBD	385
NAAS CREEDS	VA39799F775200	1	2008	1,923
NAAS PUNGO	VA39799F819800	1	TBD	0
NANSEMOND ORDNANCE DEPOT	VA39799F156700	1	2008	1,070
NAVAL COMMAND FACILITY	VA39799F854400	1	TBD	385
NAVAL HOSPITAL PORTSMOUTH	VA317002481800	2	TBD	1
NAVY YARD	VA39799F173000	1	TBD	0
NEW RIVER ORDNANCE PLANT	VA39799F156900	1	TBD	0
NIKE N-36	VA39799F160900	1	TBD	343
NIKE SITE N-63	VA39799F156600	1	TBD	0
NIKE W-BA-74	VA39799F167500	1	TBD	0
NSY NORFOLK	VA39799F172500	1	TBD	0
OYSTER POINT STORAGE AREA	VA39799F157800	1	TBD	385
PETERSBURG AIRPORT	VA39799F839200	2	TBD	389
PLUM TREE ISLAND RANGE	VA39799F167300	2	2013	2,605
QM MARKET CENTER	VA39799F164900	1	TBD	2
QM DEPOT, NEWPORT NW	VA39799F780800	1	TBD	10
VIRGINIA (continued)				
RADIO REC FACILITY	VA39799F775600	1	TBD	0
RES TRN CENTER, USCG	VA39799F854500	1	TBD	395
RHOAD MIC STATION SITE	VA39799F171500	1	TBD	0
US ARC CHINCOTEAGUE (WALLOPS IS.)	VA3210015S1200	5	TBD	0

Source: Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994, Table B-2

List of All Region 3 DoD Installations Either With Two or Fewer Sites or Estimated Costs for Cleanup of Less Than or Equal to $1 Million

Facility Name	FFID	Number of Sites	Estimated Completion Date	FY95 Cost to Complete $000
US ARMY RECRUITING COMMAND	VA39799F163100	1	TBD	35
VIRGINIA MICROWAVE STATION	VA39799F162800	1	TBD	2
VIRGINIA ORDNANCE WORKS	VA39799F163700	1	2011	4,103
W.H. GROUP NO. 2 & 3	VA39799F780900	1	TBD	10
WALLOPS ISLAND	VA39799F169700	1	TBD	0
WASHINGTON/BALTIMORE DEF-NIK W-83	VA39799F163800	1	TBD	470
WOODROW WILSON GENERAL HOSPITAL	VA39799F164300	1	TBD	0
Total VIRGINIA		97		27,505
WEST VIRGINIA				
DOLLY SODS--NATLANTIFOR	WV39799F346000	1	1999	1,620
FIKE/ARTEL CHEMICAL	WV39799F789200	2	2008	2,228
GUTHRIE AIR FORCE STATION	WV39799F346900	1	TBD	0
JEFFERSON COUNTY RCV	WV39799F346700	1	TBD	0
JEFFERSON COUNTY TRANS	WV39799F347000	1	TBD	0
MARSHALL ARMY CHEMICAL PLANT	WV39799F348000	1	TBD	205
NAVAL ORDNANCE PLANT	WV39799F347700	1	TBD	0
POINT PLEASANT OMS #6	WV321005413500	3	TBD	650
SYLVANIA ELECTRIC PROD	WV39799F347800	1	TBD	0
US ARMY RESERVE CENTER BLUEFIELD	WV3210016U0500	5	TBD	0
US ARMY RESERVE CENTER CLARKSBURG	WV3210016U0800	3	TBD	0
US ARMY RESERVE CENTER EAST RAINELLE	WV3210016U4600	4	TBD	0
US ARMY RESERVE CENTER HUNTINGTON	WV3210016U2000	3	TBD	0
US ARC PARKERSBURG (AMSA 114)	WV3210026U4300	5	TBD	0
US ARMY RESERVE CENTER WEIRTON	WV3210016U6400	3	TBD	0
VETERANS ADMINISTRATION GENERAL HOSP	WV39799F346600	1	TBD	385
WV MANEUVER AREA	WV39799F346500	1	2015	12,442
YEAGER AIR NATIONAL GUARD BASE	WV357282589100	5	2003	4,281
YEAGER AIR NATIONAL GUARD	WV39799F711600	2	2004	1,877
Total WEST VIRGINIA		39		19,407
Total		**500**		**140,029**

Source: Defense Environmental Restoration Program Annual Report to Congress for Fiscal Year 1994, Table B-2

APPENDIX B

EPA REGION 4 BROWNFIELDS ECONOMIC REDEVELOPMENT INITIATIVE FACT SHEETS

U.S. EPA Brownfields Pilot Awards
June 1996

1. List of Brownfields Pilots

2. Brownfields Pilot Fact Sheet

3. Brownfields Checklist

4. Brownfields Pilot Information

National Pilots

- Summary of Brownfields National Pilots
- Burlington, VT
- Charlotte, NC
- Chicopee, MA
- Chippewa County/ Kinross Township, MI
- Kansas City, KS and MO
- Lima, OH
- Lowell, MA
- Navajo Nation
- Newark, NJ
- Richmond, CA
- Rome, NY

Regional Pilots

- Summary of Brownfields Regional Pilots
- Atlanta, GA
- Camden, NJ
- Clearwater, FL
- East St. Louis, IL
- Miami, FL
- Prichard, AL
- Provo, UT
- San Francisco, CA
- Shreveport, LA

5. Endorsements

American Public Works Association
Bank of America
Environmental Defense Fund
Mortgage Bankers Association of America
National Community Reinvestment Coalition
National Wildlife Federation
United Church of Christ, Commission for Racial Justice
The United States Conference of Mayors
Endorsements of the President's Proposed Tax Incentive

U.S. EPA BROWNFIELDS PILOTS

"Economic development and environmental protection must go hand-in-hand"

National Pilots

Baltimore, MD
Birmingham, AL
Bridgeport, CT
Burlington, VT
Cape Charles-Northampton County, VA
Charlotte, NC
Chicopee, MA
Chippewa County/Kinross Township, MI
Cleveland, OH
Detroit, MI
Emeryville, CA
Houston, TX
Indianapolis, IN
Kansas City, KS and MO
Knoxville, TN
Laredo, TX
Lawrence, MA
Lima, OH
Louisville, KY
Lowell, MA
Navajo Nation
Newark, NJ
New Orleans, LA
New York, NY
Oregon Mill Sites, OR
Phoenixville, PA
Portland, OR
Rhode Island
Richmond, CA
Richmond, VA
Rochester, NY
Rome, NY
Sacramento, CA
St. Louis, MO
Stockton, CA
Tacoma, WA
Trenton, NJ
West Central Municipal Conference, IL
Worcester, MA

Regional Pilots

Atlanta, GA
Boston, MA
Buffalo, NY
Camden, NJ
Clearwater, FL
Dallas, TX
Duwamish Coalition, WA
East St. Louis, IL
Illinois
Indiana
Miami, FL
Minnesota
Northwest Indiana Cities
Philadelphia, PA
Pittsburgh, PA
Prichard, AL
Provo, UT
Sand Creek Corridor, CO
San Francisco, CA
Shreveport, LA
West Jordan, UT

Brownfields Checklist

1995 Action Agenda 100% Accomplished!

Brownfields Pilots

- ✓ 60 pilots funded

Clarifying Liability and Cleanup Issues

- ✓ Underground Storage Tank Lender Liability Rule
- ✓ The Prospective Purchases Guidance
- ✓ Owners of Property Containing Contaminated Aquifers Guidance
- ✓ Lender and Municipal Acquisition Liability Guidance
- ✓ Land Use Guidance
- ✓ Archival of 27,000 sites from the Federal Inventory
- ✓ Community Reinvestment Act Credit for Brownfields
- ✓ Soil Screening Guidance

Partnerships and Outreach

- ✓ Working with other EPA Initiatives (e.g. Common Sense Initiative)
- ✓ Regional Brownfields Coordinators in all 10 Regions
- ✓ EPA staff on "loan" to Cities
- ✓ Other Federal Agencies
- ✓ National Environmental Justice Advisory Council
- ✓ Association of State and Territorial Solid Waste Management Officials

Job Training

- ✓ Hazardous Materials Training and Research Institute
- ✓ Bridgeport Connecticut Pilot
- ✓ Rio Hondo Community College District
- ✓ Cuyahoga Community College
- ✓ Superfund Step-up
- ✓ National Institute of Environmental Health and Safety

United States Environmental Protection Agency
Office of Solid Waste and Emergency Response
Publication: EPA 500-F-96-001
June 1996

EPA

Brownfields Pilots

Office of Outreach and Special Projects (5101)
Quick Reference Fact Sheet

EPA's Brownfields Economic Redevelopment Initiative is designed to empower States, communities, and other stakeholders in economic redevelopment to work together in a timely manner to prevent, assess, safely clean up, and sustainably reuse brownfields. A brownfield is a site, or portion thereof, that has actual or perceived contamination, as well as an active potential for redevelopment or reuse. EPA plans to fund 60 Brownfields Pilots in 1995 and 1996, at up to $200,000 each, to support creative two-year explorations and demonstrations of brownfields solutions. The Pilots are intended to provide EPA, States, Tribes, municipalities, and communities with useful information and strategies as they continue to seek new methods to promote a unified approach to site assessment, environmental cleanup, and redevelopment.

OVERVIEW

EPA is awarding 60 brownfield pilot cooperative agreements to States, cities, towns, counties, and Tribes by the end of 1996. The pilots, each funded up to $200,000 over two years, will test redevelopment models, direct special efforts toward removing regulatory barriers without sacrificing protectiveness, and facilitate coordinated public and private efforts at the Federal, State, and local levels. These funds are to be used to generate interest by bringing together community groups, investors, lenders, developers, and other affected parties to address the issue of assessing and cleaning up brownfields and returning them to appropriate and productive use.

Findings and experience from these pilots will help guide EPA's efforts to stimulate environmental cleanup through economic redevelopment. These findings will be captured in the specific activities outlined in EPA's evolving Brownfields Action Agenda. The pilots also will provide a series of models for States and localities struggling with similar efforts.

EVALUATION CRITERIA

States, cities, towns, counties, and Tribes that have an interest in environmentally sound redevelopment of brownfields are invited to apply for pilot grants. Pilot applications should address the following criteria:

- Effect of brownfields on the community or communities;
- Value added by Federal support;
- Existing local government structure;
- Community involvement plan;
- Environmental Justice plan;
- Appropriate authority and government support;
- Proposed cleanup funding mechanisms;
- Flow of ownership plan;
- Environmental site assessment plan;
- National replicability; and
- Measures of success.

ACTIVITIES

EPA Headquarters awarded the first pilot to Cuyahoga County, Ohio, in November 1993. Two additional pilots were awarded in 1994 and are currently underway in Bridgeport, Connecticut, and Richmond, Virginia.

EPA announced 15 additional pilots in July 1995, 11 in October 1995, 11 in January 1996, and 20 more in June 1996.

CONTACTS

For more information call:

The Superfund Hotline
(800) 424-9346

EPA

United States
Environmental Protection
Agency (5101)
Washington, DC 20460

Official Business
Penalty for Private Use
$300

United States Environmental Protection Agency
Office of Solid Waste and Emergency Response
Publication: EPA 500-F-96-002
June 1996

EPA

Brownfields National Pilots

Office of Outreach and Special Projects (5101)
Quick Reference Fact Sheet

EPA's Brownfields Economic Redevelopment Initiative is designed to empower States, communities, and other stakeholders in economic redevelopment to work together in a timely manner to prevent, assess, safely clean up, and sustainably reuse brownfields. A brownfield is a site, or portion thereof, that has actual or perceived contamination, as well as an active potential for redevelopment or reuse. EPA plans to fund 60 Brownfields Pilots in 1995 and 1996, at up to $200,000 each, to support creative two-year explorations and demonstrations of brownfields solutions. The Pilots are intended to provide EPA, States, Tribes, municipalities, and communities with useful information and strategies as they continue to seek new methods to promote a unified approach to site assessment, environmental cleanup, and redevelopment.

OVERVIEW

EPA is awarding 60 brownfield pilot cooperative agreements to States, cities, towns, counties, and Tribes by the end of 1996. EPA is currently funding twenty-eight "National" pilots selected by EPA Headquarters, and 12 "Regional" pilots selected and sponsored by EPA Regional offices. Twenty more pilots were announced in June 1996 and their cooperative agreements are being negotiated.

The brownfields pilots will test redevelopment models, direct special efforts toward removing regulatory barriers without sacrificing protectiveness, and facilitate coordinated environmental assessments and cleanup efforts at the Federal, State, and local levels. These funds will be used to generate interest by pulling together community groups, investors, lenders, developers, and other affected parties to address the issues of cleaning up sites contaminated with hazardous substances and returning them to appropriate, productive use. The pilots will serve as vehicles to explore a series of models for States and localities struggling with such efforts.

The National pilots were selected using the following evaluation criteria:

1. Problem statement and needs assessment
   - Effect of brownfields on the community or communities
   - Value added by Federal support
2. Community-based planning and involvement
   - Existing local government structure
   - Community involvement plan
   - Environmental Justice plan
3. Implementation plan
   - Appropriate authority and government support
   - Proposed cleanup funding mechanisms
   - Flow of ownership plan
   - Environmental site assessment plan
4. Long-term benefits and sustainability
   - National replicability
   - Measure of success

Twenty-eight Brownfields National Pilots are underway and an additional eleven* are being negotiated:

- Baltimore, MD
- Birmingham, AL
- Bridgeport, CT
- Burlington, VT*
- Cape Charles-Northampton County, VA
- Charlotte, NC*
- Chicopee, MA*
- Chippewa County-Kinross Township, MI*
- Cleveland, OH
- Detroit, MI
- Emeryville, CA
- Houston, TX
- Indianapolis, IN
- Kansas City, KS/MO*

- Knoxville, TN
- Lawrence, MA
- Lowell, MA*
- Navaho Nation*
- New Orleans, LA
- Oregon Mill Sites, OR
- Portland, OR
- Richmond, CA*
- Rochester, NY
- Sacramento, CA
- Stockton, CA
- Trenton, NJ
- West Central Municipal Conference, IL
- Worcestor, MA
- Laredo, TX
- Lima, OH*
- Louisville, KY
- Newark, NJ*
- New York, NY
- Phoenixville, PA
- Rhode Island
- Richmond, VA
- Rome, NY*
- St. Louis, MO
- Tacoma, WA

Please refer to the supplemental EPA fact sheet on each pilot project for more specific information.

ACTIVITIES

Following is a summary of each of the 39 Brownfields National Pilots that are underway or are being negotiated:

- **Baltimore, MD** - Activities planned as part of the Baltimore pilot include identifying the sources and scope of the brownfields problem; defining the legal and regulatory obstacles to redevelopment; promoting new technologies for remediation; exploring the use of new financing mechanisms to aid site assessment and remediation; conducting at least two demonstration site remediation and development projects, with the potential to create at least fifty new jobs; and promoting voluntary cleanups. For more information, contact Tom Stolle of U.S. EPA Region 3 in Philadelphia, PA, at (215) 597-1166.

- **Birmingham, AL** - Activities planned as part of the Birmingham pilot include establishing a clearinghouse that will serve as a repository for brownfields environmental data on the targeted redevelopment area, and forming a partnership among environmental activists, technical experts, government officials, and business representatives who will support the pilot program with staff and materials. A fundamental goalof the pilot is to develop a comprehensive environmental plan to link approaches to such issues as flood control and groundwater contamination reduction with remediation of soil and site-specific contamination. In addition, Birmingham was selected by the EPA Common Sense Initiative Iron and Steel Sector Brownfield's Workgroup for a special partnership to explore brownfields assessment and redevelopment issues unique to the iron and steel industrial sector. For more information, contact Matt Robbins of U.S. EPA Region 4 in Atlanta, GA, at (404) 347-2643, ext. 6212.

- **Bridgeport, CT** - Activities planned as part of the Bridgeport pilot include categorizing and prioritizing cleanup sites, developing timeline estimates for duration and methods of cleanup with associated costs, and selecting two to six model sites. Incentives will be identified for effective property assessment, cleanup, and redevelopment for each model site. In addition, the city will coordinate with the Housatonic Community and Technical College to offer environmental science courses to students to prepare them to assist in future redevelopment efforts. For more information, contact John Podgurski of U.S. EPA Region 1 in Boston, MA, at (617) 573-9681.

- **Burlington, VT** - Activities planned as part of the Burlington pilot include engaging affected neighborhoods in the brownfields process; assessing the level of contamination at targeted sites; prioritizing redevelopment plans, developing partnerships and obtaining commitments; implementing redevelopment plans as part of an agricultural industrial park; attracting viable businesses to redeveloped sites, and integrating remediation into a replicable process and disseminating this model. For more information, contact John Podgurski of U.S. EPA Region 1 in Boston, MA, at (617) 573-9681.

- **Cape Charles - Northampton County, VA** - Activities planned as part of the Cape Charles-Northampton County pilot include conducting Phase I and II environmental assessments, developing a study to address applicability, feasibility, and cost of remediation technologies, developing a remediation financing program, and designing an environmental management system to measure levels of performance in excess of legislative standards. In addition, the President's Council on Sustainable Development has chosen this locality as a National Eco-Industrial Park demonstration project. For more information, contact Tom Stolle of U.S. EPA Region 3 in Philadelphia, PA, at (215) 597-1166.

- **Charlotte, NC** - Activities planned as part of the Charlotte pilot include assessing two to three

target sites in the South End; resolving barriers to reinvestment and development; creating model lending partnerships, risk and liability sharing agreements; stimulating community involvement; and ensuring their input and support. A key element of Charlotte's plan is to develop a cooperative relationship with the financial institutions in the city, which is the third largest financial center in the nation. For more information, contact Matt Robbins of U.S. EPA Region 4 in Atlanta, GA, at (404) 347-5059, ext. 6212.

- **Chicopee, MA** - Activities planned as part of the Chicopee pilot include conducting a site assessment and designing a remediation strategy; creating an educational program for the neighborhood; identifying specific funding sources; and documenting the redevelopment process. Redevelopment of this site will be lead by the Chicopee Brownfield Task Force, and will create a working model for the cleanup and reuse of the city's other brownfields. Chicopee has requested just $59,000 for the two years, most of which will go to the Phase I and II site assessments and remedial design. For more information, contact John Podgurski of U.S. EPA Region 1 in Boston, MA, at (617) 573-9681.

- **Chippewa County/Kinross Township, MI** - Activities planned as part of the Cippeewa County/Kinross Township pilot include completing Phase I-III site assessments; convening a community task force of public and private stakeholders (including the U.S. Army Corps of Engineers and the Sault Ste. Marie Tribe of Chippewa Indians) to plan redevelopment strategies for each potential brownfield; preparing legal documentation related to land ownership, liability, due care requirements, zoning, and financing; and involving affected communities. For more information, contact Mary Beth Tuohy of U.S. EPA Region 5 in Chicago, IL, at (312) 886-7596.

- **Cleveland, OH** - As part of this pilot, the Cuyahoga County Planning Commission (CPC) in Cleveland has selected two sites for cleanup and redevelopment. One site involves securing remediation technologies, and the other involves construction with the intention of encouraging economic growth. Other pilot activities include working with an area community college to provide training in environmental work to local residents; developing high school curricula on environmental issues; establishing a community/business task force, community outreach, and financial support for brownfields assessment; cleanup, and redevelopment. For more information, contact Joe Dufficy of U.S. EPA Region 5 in Chicago, IL, at (312) 886-1960.

- **Detroit, MI** - As part of this pilot, Detroit created the Redevelopment of Urban Sites Action Team (the R.E.U.S. A-Team) to identify and address obstacles to the reuse of abandoned properties. The goals of the A-Team are to educate potential investors about brownfields success stories; to establish a county-wide sustainable development community roundtable; and to produce a manual to teach others the "lessons learned" in Detroit. For more information, contact Margaret Guerriero of U.S. EPA Region 5 in Chicago, IL, at (312) 886-0399.

- **Emeryville, CA** - The goal of the Emeryville pilot is to encourage redevelopment by building stakeholder confidence in an emerging State of California regulatory policy using an area-wide, risk-management based approach to environmental cleanups. Activities planned as part of the pilot include compiling existing site information, conducting additional assessments, and creating a geographical information system model. The city plans to convene a broad-based Community Task Force to serve as a forum for community participation in decision making and development of a Mitigation/Risk Management plan. For more information, contact Bobbie Kahan of U.S. EPA Region 9 in San Francisco, CA, at (415) 744-2191.

- **Greater Kansas City, KA and MO** - The goal of the Greater Kansas City pilot is to demonstrate economic redevelopment of environmentally contaminated sites in the bi-state Central Industrial District. Existing tools, such as prospective purchaser agreements and financial mechanisms, will be compiled from local and national sources and applied to a few select sites. Activities planned as part of the pilot include conducting an inventory of numerous properties in the Central Industrial District, initiating a community involvement plan, conducting Phase I and II site assessments on four to six sites, integrating public and private interests in the brownfields process at selected sites, and ensuring the involvement of those communities most adversely impacted by the sites. For more information, contact Kerry Herndon of U.S. EPA Region 7 in Kansas City, KS, at (913) 551-7286.

- **Houston, TX** - The goals of the Houston pilot are to establish a permanent organizational infrastructure for future brownfields redevelopment, revitalize inner-city property, and increase jobs. Activities planned as part of this pilot include

identifying candidate sites within the city's Federal Urban Enhanced Enterprise Community; involving stakeholders in decision making through the mechanism of a Land Redevelopment Committee; and conducting environmental assessments of eight candidate sites. Houston plans to develop a model redevelopment process encompassing financial incentives, community outreach, targeted job opportunities, and the new Texas Voluntary Cleanup Program. For more information, contact Stan Hitt of U.S. EPA Region 6 in Dallas, TX, at (214) 665-6736.

- Indianapolis, IN - Indianapolis will use pilot funding to hire a Brownfields Coordinator. The Coordinator will develop and maintain an inventory of brownfields in the city using a geographical information system; develop and coordinate the reuse program for brownfields redevelopment; coordinate meetings with community groups, prospective property owners, and the city's reuse group; and review additional assessment and cleanup funding mechanisms and approaches to liability issues. For more information, contact Deborah Orr of U.S. EPA Region 5 in Chicago, IL, at (312) 886-7576.

- Knoxville, TN - Activities planned as part of the Knoxville pilot include evaluating the feasibility of redeveloping its Center City Business Park, which encompasses many acres of abandoned or underutilized commercial and industrial property; expanding and improving its community involvement activities by integrating the existing Center City Business Park Advisory Council with the Partnership for Neighborhood Improvement; investigating sites that are thought to be contaminated and determining the most cost-effective remediation methods to identify potentially responsible parties for the contamination; and developing a cleanup implementation plan that ensures activities do not aggravate existing environmental threats. For more information, contact Matt Robbins of U.S. EPA Region 4 in Atlanta, GA, at (404) 347-5059, ext. 6212.

- Laredo, TX - Activities planned as part of the Laredo pilot include taking inventory of current brownfields; determining the most appropriate and cost-effective remediation methods; developing a plan for the remediation; and meeting with current property owners, realtors, prospective buyers, and lending institutions to expedite environmental revitalization. In addition, Laredo will expand and improve the city's community involvement plan by integrating two existing community groups. For more information, contact Stan Hitt of U.S. EPA Region 6 in Dallas, TX, at (214) 665-6735.

- Lawrence, MA - The goal of the Lawrence pilot is to provide long-term stability and a safe environment for its downtown industrial, commercial, and residential centers by employing the existing public/private partnerships created to redevelop three significant contaminated sites. Activities planned as part of this pilot inlcude taking inventory of brownfields within the North Canal industrial corridor; expanding the city's existing community advisory committees to encourage meaningful involvement of the community's minority groups and other stakeholders; creating a "one stop" guidance manual for brownfields redevelopment; and coordinating city, State, and federal efforts. For more information, contact John Podgurski of U.S. EPA Region 1 in Boston, MA, at (617) 573-9681.

- Lima, OH - The goal of the Lima brownfields pilot is to transform a 200-acre industrial park that has been hard-hit by industrial closings and defense-downsizing into a modernized industrial community. Activities planned as part of the pilot include conducting Phase I site assessment and planning, implementing outreach activities in the community, and crafting legal agreements delineating partnership terms and financial arrangements for the assessment, remediation, and development of the industrial park. Lima's brownfields program will compliment the river corridor redevelopment project, enhance water quality of the Ottawa River, and provide adjoining greenspace. The plan requires boundary annexation of 120 acres in the adjacent township of Shawnee, which supports the plan. For more information, contact Mary Beth Tuohy of U.S. EPA Region 5 in Chicago, IL, at (312) 886-7596.

- Louisville, KY - The Louisville Empowerment Zone Brownfields Working Group plans to address a brownfields site in Louisville's heavy industrial corridor. Activities planned as part of this pilot include using a geographical information system to provide information on environmental conditions of property in the corridor; establishing a streamlined process for voluntary cleanup, which will include implementing a "clean closure" mechanism; conducting an area-wide assessment of the Louisville aquifer; and assessing brownfields in the corridor. For more information, contact Matt Robbins of U.S. EPA Region 4 in Atlanta, GA, at (404) 347-5059, ext. 6212.

- **Lowell, MA** - The Lowell pilot intends to focus efforts on overcoming key obstacles to brownfields redevelopment already identified by the city in previous brownfield projects. Lowell has been designated a federal Enterprise Community. Activities planned as part of the pilot include ranking potential brownfields sites; completing site assessments of priority sites including two North Canal Project sites and three to five other sites; implementing a comprehensive, multilingual, multimedia brownfield education program in the impacted communities; and developing a self-sustaining and secure funding program for continuing to redevelop other contaminated properties. For more information, contact John Podgurski of U.S. EPA Region 1 in Boston, MA, at (617) 573-9681.

- **Navajo Nation** - The Navajo Nation's 10-Year Forest Management Plan expired in 1992, eliminating access to tribal timber resources and causing the closing of the Navajo Forest Product Industries (NFPI) mill site in Navajo, New Mexico. A site inspection has revealed clear evidence of potentially hazardous substances in the environment. Activities planned as part of the pilot include scoping the local community's needs and concerns; assessing the site to determine the cleanup status of each parcel of the NFPI facility; conducting public meetings to secure a Letter of Decision commitment by the Red Lake Chapter to lease all or part of the site to help finance remediation of NFPI facility; and preparing a site remediation plan. For more information, contact Jim Hanson of U.S. EPA Region 9 in San Francisco, CA, at (415) 744-2237.

- **Newark, NJ** - The goal of the Newark pilot is to coordinate New Jersey's innovative legislative and regulatory tools to produce a pipeline of clean, redeveloped sites while inventing a model process replicable in other cities. Newark has been designated a federal Enterprise Community and an Urban Enterprise Zone. Activities planned as part of the pilot include completing a comprehensive GIS-based brownfields inventory; assessing four diverse sites; continuing outreach to the community through the Newark Brownfields Working Group; applying innovative site assessment technologies in cooperation with the New Jersey Institute of Technology and Rutgers University; encouraging private investment; linking redevelopment to revitalization; and producing brownfields redevelopment plan. For more information, contact Larry D'Andrea of U.S. EPA Region 2 in New York, NY, at (212) 637-4314.

- **New Orleans, LA** - Activities planned as part of the New Orleans pilot include identifying the city's brownfields; maintaining an inventory of sites on a geographical information system for data analysis; developing criteria for ranking their redevelopment potential; and sponsoring meetings with lenders, developers, city planner, citizens, and agency officials to explore remediation funding mechanisms. In addition, New Orleans will develop additional strategies for community outreach efforts. For more information, contact Stan Hitt of U.S. EPA Region 6 in Dallas, TX, at (214) 665-6735.

- **New York, NY** - The goal of the New York pilot is to mobilize a public/private task force to develop new approaches and performance measures that will accelerate redevelopment of brownfields. Activities planned as part of the pilot include working with communities to quantify the adverse impacts of brownfields, establishing a community outreach and education program, conducting assessments of five priority brownfields, and developing technical guidances for testing, sampling, and remediating hazardous wastes on brownfields properties. The city wants to provide the foundation for a policy framework to guide future decisions and cleanup investments in its Empowerment Zone and other disadvantaged communities. For more information, contact Larry D'Andrea of U.S. EPA Region 2 in New York, NY, at (212) 637-4314.

- **Oregon Mill Sites** - The Oregon Economic Development Department hopes to return vacant Oregon Mill Sites in seven rural communities to productive use. Activities planned as part of this pilot include developing cleanup standards and approaches for remediation; exploring financing options and development risks; and creating a computer model to measure costs and benefits of various cleanup alternatives. In addition, site-specific reuse plans will be developed to be consistent with local land-use planning requirements. Local Action Committees will ensure broad community participation in the redevelopment process. For more information, contact Lori Cohen of U.S. EPA Region 10 in Seattle, WA, at (206) 553-6523.

- **Phoenixville, PA** - The goal of the Phoenixville pilot is to clean up the abandoned Phoenix Iron

and Steel Company site and create an urban greenway that would benefit the environmental justice communities living adjacent to the site. Activities planned as part of the pilot include assessing the scope of contamination, estimating potential remediation costs, developing potential land-use options, and determining the feasibility of redevelopment. The Borough plans to build community consensus on reuse of the site, develop a master land-use plan, and produce a video journal of the project. For more information, contact Tom Stolle of U.S. EPA Region 3 in Philadelphia, PA, at (215) 597-1166.

- **Portland, OR** - The goal of the Portland pilot is to encourage environmental cleanup and redevelopment at specific sites within the Enterprise Community and along the Willamette River waterfront. Activities planned as part of the pilot include conducting education and outreach to involve citizens; creating outreach opportunities for schools; and developing an Internet-accessible online computer information system that will provide data on site assessments, cleanups, and development. A key component of the pilot will be the crafting of partnership agreements with affected neighborhoods on assessment, cleanup, and redevelopment activities at specific sites. For more information, contact Lori Cohen of U.S. EPA Region 10 in Seattle, WA, at (206) 553-6523.

- **Rhode Island** - The goal of the Rhode Island pilot is to develop a model ecosystem-based program to bring the vacant and under-used contaminated properties in two major urban watersheds back to beneficial use. Activities planned as part of this pilot include conducting a regional survey of both watersheds to identify candidate sites for further assessment; assigning specific contact persons to reach out to affected communities; and facilitating roundtable meetings of all stakeholders. Based on community input, the State will conduct assessments at specific priority sites. For more information, contact John Podgurski of U.S. EPA Region 1 in Boston, MA, at (617) 573-9681.

- **Richmond, CA** - The goal of the Richmond, CA, pilot is to focus on the 900-acre North Richmond Shoreline, which contains a variety of brownfields in a relatively compact area. Activities of the pilot include providing public recreation; opening the shoreline for public use; establishing zoning standards to limit industrial activities that may endanger human health and the environment; completing preliminary site assessments of two to five sites within the North Richmond Shoreline; developing financing mechanisms; clarifying jurisdictional authority; streamlining the regulatory process; and implementing community education and outreach programs. For more information, contact Jim Hanson of U.S. EPA Region 9 in San Francisco, CA, at (415) 744-2237.

- **Richmond, VA** - Activities planned as part of the Richmond, VA, pilot include developing a systematic and cost-effective means to inventory and market brownfields sites; identifying environmental mitigation alternatives and costs; evaluating commercial and industrial market reuse options; conducting feasibility studies for brownfields reuse; and using new and existing financial incentives to stimulate interest in redevelopment of brownfields sites. Richmond's Neighborhood Teams Process will bring host residential communities into the reuse decision-making process. For more information, contact Tom Stolle of U.S. EPA Region 3 in Philadelphia, PA, at (215) 597-1166.

- **Rochester, NY** - Activities planned as part of the Rochester pilot include selecting four to five priority sites that are eligible for a revolving loan/grant program and two publicly-owned sites for additional environmental characterization and redevelopment; preparing marketability criteria for brownfields site selection; and bringing host residential communities into the reuse decision-making process to develop site-specific property recycling strategies. Creation of these strategies will rely on partnerships with current and future site owners and users, government regulatory agencies, and development staff. For more information, contact Walter Schoepf of U.S. EPA Region 2 in New York, NY, at (212) 637-4319.

- **Rome, NY** - The goal of the Rome pilot is to redevelop a 200-acre industrial area, which is adjacent to the central business district and in a state Economic Development Zone. Innovative site characterization technologies developed at the U.S. Department of Defense's Rome Laboratories will be used in assessments of a 17-acre demonstration site. Activities planned as part of the pilot include conducting environmental site assessments and updating a redevelopment plan for the 17-acre parcel of the industrial park, establishing letters of intent with property owners and regulators, using the Brownfields Task Force to involve the adjacent neighborhoods, and documenting the process for replication at other brownfields. For more information, contact Larry D'Andrea of U.S. EPA Region 2 in New York, NY, at (212) 637-4314.

- Sacramento, CA - Activities planned as part of this pilot include developing an automated land use permitting process and monitoring system to geographically overlay environmental information onto land use maps to guide cleanup activities and planning; targeting economic redevelopment on brownfields; and developing a cooperative process among federal, State, and local agencies to involve the community in redevelopment and ensure that local land use objectives are reflected in cleanup activities. For more information, contact Tom Mix of U.S. EPA Region 9 in San Francisco, CA, at (415) 744-2378.

- St. Louis, MO - Activities planned as part of the St. Louis pilot include investigating the Dr. Martin Luther King Business Park to characterize environmental concerns; establishing and building a Brownfields Reinvestment Fund; working with State agencies to implement the recently enacted Abandoned Property Reuse Act; and organizing a voluntary Environmental Consultant Committee to guide selection of cleanup criteria and development of risk-based cleanup standards. In addition, St. Louis will form a Citizens Advisory Council to ensure community involvement in the initiative, and will transfer knowledge gained from the business park efforts to a Brownfields Redevelopment Model for implementation at other sites. For more information, contact Kerry Herndon of U.S. EPA Region 7 in Kansas City, MO, at (913) 551-7286.

- Stockton, CA - The goal of the Stockton pilot is to encourage economic revitalization of the city's waterfront, which has been designated a state Enterprise Zone. Activities planned as part of the pilot include identifying the sources and scope of brownfields contamination; developing a coordinated partnership that includes the Waterfront Revival Task Force, residents, community groups, businesses, and public entities; developing a comprehensive environmental plan; and participating in California EPA's Expedited Remedial Action Program to develop and implement a remediation strategy. For more information, contact Bobbie Kahan of U.S. EPA Region 9 in San Francisco, CA, at (415) 744-2191.

- Tacoma, WA - The goal of the Tacoma pilot is to encourage economic growth and redevelopment in the downtown core by addressing environmental contamination and liability issues. Activities planned as part of this pilot include building on existing community involvement activities associated with an adjacent Superfund site; creating partnerships among the city, public development authority, community, and developers; promoting incentives to assessment and redevelopment; and developing a comprehensive assessment, remediation, and redevelopment process. The city will focus brownfields efforts on sites within the Enterprise Community and adjacent NPL site. For more information, contact Lori Cohen of U.S. EPA Region 10 in Seattle, WA, at (206) 553-6523.

- Trenton, NJ - Activities planned as part of the Trenton pilot include establishing the Brownfields Environmental Solutions for Trenton (BEST) Advisory Council to advise the city on redevelopment issues; identifying and performing site investigations at key commercial/industrial brownfields sites; raising public awareness of possible issues at sites in residential areas; and evaluating methods and options for encouraging financial institutions to invest in key brownfields sites and neighborhoods to prevent "brownlining." For more information, contact Larry D'Andrea of U.S. EPA Region 2 in New York, NY, at (212) 637-4314.

- West Central Municipal Conference, IL - Activities planned as part of the WCMC pilot include creating a "Rapid Response Team" to provide timely expertise on brownfields redevelopment; establishing a Brownfields Prevention Program to identify ongoing industrial activities that pose a risk of creating new brownfields; supporting redevelopment of at least two public and two private brownfields land parcels; and distributing information about the pilot to the public. For more information, contact Bill Hawbold of U.S. EPA Region 5 in Chicago, IL, at (312) 353-3261.

- Worcester, MA - The goal of the Worcester pilot is to create incentives for the redevelopment of urban industrial sites and ensure the safety and health of the surrounding neighborhoods. Activities planned as part of this pilot include developing a public input mechanism through the creation of the Central Massachusetts Brownfields Advisory Council, selecting and assessing three priority pilot sites, and investigating redevelopment financing options. The city plans to prepare protocols for the identification, analysis, selection, acquisition, and disposition of brownfields sites. For more information, contact John Podgurski of U.S. EPA Region 1 in Boston, MA, at (617) 573-9681.

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Environmental Protection
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EPA

Brownfields Pilot – Charlotte, NC

Office of Outreach and Special Projects (5101)
Quick Reference Fact Sheet

EPA's Brownfields Economic Redevelopment Initiative is designed to empower States, communities, and other stakeholders in economic redevelopment to work together in a timely manner to prevent, assess, safely clean up, and sustainably reuse brownfields. A brownfield is a site, or portion thereof, that has actual or perceived contamination and an active potential for redevelopment or reuse. EPA plans to fund over fifty Brownfields Pilots in 1995 and 1996, at up to $200,000 each, to support creative two-year explorations and demonstrations of brownfields solutions. The Pilots are intended to provide EPA, States, Tribes, municipalities, and communities with useful information and strategies as they continue to seek new methods to promote a unified approach to site assessment, environmental cleanup, and redevelopment.

OVERVIEW

EPA has selected the City of Charlotte for a Brownfields Pilot. Charlotte's South End, a manufacturing and business center prior to World War II, contains many obsolete and abandoned structures. The legacy of environmental contamination has made redevelopment difficult. The area has long been overshadowed by high-density development in Uptown Charlotte, which is adjacent to the South End. Nearly 27 percent of South End residents live below the poverty line, and median income is about half that of the city as a whole. Developers are interested in the area, but environmental concerns related to a wide variety of sources are keeping them away. Nearby construction of a convention center and a professional football stadium has refocused attention to the area..

OBJECTIVES

The ultimate goal of Charlotte's brownfields project is to use the South End as a working model for redevelopment of brownfields throughout the community. The model is intended to be a catalyst for recruiting partners, removing liability and financial barriers, and bringing the neighborhoods to the table. Brownfield sites in the South End will be selected based on their benefit to the community, nature and extent of contamination, compatibility with existing land use, redevelopment potential, and project replicability.

ACTIVITIES

Activities planned as part of this pilot include:

- Selecting two to three sites in the South End and define the extent of contamination at the sites through preliminary assessments;
- Researching ownership and liability at the target sites through existing data;
- Working with the cooperative partners and EPA to define the assessment/remediation process and appropriate levels of cleanup;
- Working with banking/lending partners to develop banking models that address the liability and financial issues attached to all brownfields redevelopment projects; and
- Stimulating community involvement in the redevelopment process through outreach and educational programs.

The cooperative agreement for this pilot has not yet been negotiated; therefore, activities described in this fact sheet are subject to change.

CONTACTS

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EPA

Brownfields Regional Pilots

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Quick Reference Fact Sheet

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OVERVIEW

EPA is awarding 60 brownfield pilot cooperative agreements to States, cities, towns, counties, and Tribes by the end of 1996. EPA is currently funding twenty-eight "National" pilots selected by EPA Headquarters, and 12 "Regional" pilots selected and sponsored by EPA Regional offices. Twenty more pilots were announced in June 1996 and their cooperative agreements are being negotiated.

The brownfields pilots will test redevelopment models, direct special efforts toward removing regulatory barriers without sacrificing protectiveness, and facilitate coordinated environmental cleanup efforts at the Federal, State, and local levels. These funds will be used to generate interest by pulling together community groups, investors, lenders, developers, and other affected parties to address the issues of cleaning up sites contaminated with hazardous substances and returning them to appropriate, productive use. The pilots will serve as vehicles to explore a series of models for States and localities struggling with such efforts.

Twelve Brownfields Regional Pilots are underway and an additional nine* are being negotiated:

- Atlanta, GA*
- Boston, MA
- Buffalo, NY
- Camden, NJ*
- Clearwater, FL*
- Dallas, TX
- Duwamish, WA
- East St. Louis, IL*
- Illinois
- Indiana
- Miami, FL*
- Minnesota
- Northwest Indiana Cities
- Philadelphia, PA
- Pittsburgh, PA
- Prichard, AL*
- Provo, UT*
- Sand Creek Corridor, CO
- San Francisco, CA*
- Shreveport, LA*
- West Jordan, UT

Please refer to the supplemental EPA fact sheet on each pilot project for more specific information.

ACTIVITIES

Following is a summary of each of the 19 Brownfields Regional Pilots that are underway or are being negotiated:

- **Atlanta, GA** - U.S. EPA Region 4 has selected the City of Atlanta for a Regional Brownfields Pilot. Atlanta has established its own Empowerment Zone (EZ) of 30 neighborhoods (population 50,000) and created the Atlanta Empowerment Zone Corporation to implement their EZ plans. Atlanta's overall goals are to inventory brownfields within the Empowerment Zone, encourage industry involvement in brownfields redevelopment, provide environmental justice planning, develop sustainable communities.

Activities planned as part of this pilot include undertaking a minimum of three Level I and one Level II environmental audits, building a brownfields inventory database, producing a site identification brochure that will be the beginning of an aggressive public communications strategy and demonstration project, developing remediation processes, and creating a central oversight process for reviewing technical elements of site remediation. For more information contact Matt Robbins of U.S. EPA Region 4 in Atlanta, GA, at (404) 347-5059, ext. 6212.

- Boston, MA - U.S. EPA Region 2 awarded $200,000 to the City of Boston to fund activities that include: developing a model to identify, map, and gather information on brownfields in the Dudley Street Neighborhood (DSN), the principal business center for Boston's African-American community; developing a community outreach and education program; and investigating ways to secure additional cleanup funding, engage in cost recovery litigation, and promote environmental compliance assurance. For more information contact Lynn Jennings of U.S. EPA Region 1 in Boston, MA, at (617) 573-9634.

- Buffalo, NY - U.S. EPA Region 2 awarded the City of Buffalo $200,000 to fund the Buffalo Brownfields Project. Activities planned under this pilot include inventorying and characterizing the city's brownfields; finalizing development strategies for two to five brownfields redevelopment projects based on community vision, economic development potential, and health and environmental concerns. Additionally, the pilot is funding a Brownfields Community Coordinator to conduct environmental justice and community outreach activities targeted to specific brownfields sites; and is supporting a Brownfields Planner to oversee overall program integrity, work with the Buffalo Brownfields Task Force, develop techniques for brownfields development, and encourage developers interested in brownfields to assess sites. For more information contact Walter Schoepf of U.S. EPA Region 2 in New York, NY, at (212) 637-4319.

- Camden, NJ - U.S. EPA Region 2 has selected the City of Camden for a Regional Brownfields Pilot. Camden is the fifth largest and the most economically distressed city in New Jersey, with a predominantly minority population, a high unemployment rate, and a one in three poverty rate. Manufacturing and related land use account for a third of Camden's nine square miles, and brownfields constitute more than half of all industrial sites in the city. The goal of Camden's brownfields program is to develop an effective strategy for assessment, cleanup, and reuse of Camden's brownfields. The city proposes a comprehensive approach that will integrate technical, community, government, and financial resources. For more information contact Larry D'Andrea of U.S. EPA Region 2 in New York, NY, at (212) 637-4314.

- Clearwater, FL - U.S. EPA Region 4 has selected the City of Clearwater for a Regional Brownfields Pilot. Clearwater's brownfields problem stems from a former lake, filled in as part of urban development 40 years ago. Businesses and residences built on the site are being abandoned due to state regulations mandating property set-asides for stormwater attenuation. The area is a state-designated Enterprise Zone. Clearwater's goal is to instill environmental justice by completing site characterizations, offering economic incentives, and creating job opportunities. The University of South Florida, a brownfields partner, will prepare a flow-of-ownership plan with a novel approach to encourage investment and residential support. For more information contact Matt Robbins of U.S. EPA Region 4 in Atlanta, GA, at (404) 347-5059, ext. 6212.

- Dallas, TX - U.S. EPA Region 6 awarded Dallas $200,000 to fund brownfields activities that include obtaining the assistance of an EPA official through an Intergovernmental Personnel Act (IPA) assignment; organizing the Brownfields Initiative program and establishing criteria to select sites for evaluation; proposing funding for a permanent staff person to assume management of the Brownfields Initiative program; holding community meetings to obtain input from neighborhood associations, real estate developers, the financial community, chambers of commerce, and interested business associations regarding site selection and potential redevelopment; and providing public resources to businesses wishing to relocate to a redeveloped brownfields site. For more information contact Stan Hitt of U.S. EPA Region 6 in Dallas, TX, at (214) 665-6735.

*Funding for this pilot is made possible by combining funds with other Superfund resources.

- **Northwest Indiana Cities** - U.S. EPA Region 5 has selected the Cities of Gary, East Chicago, and Hammond, Indiana (known as Northwest Indiana), for a Regional Brownfields Pilot in partnership with EPA's Common Sense Initiative (CSI) Iron and Steel Sector Brownfields Workgroup. The pilot will conform to the Sector's "Brownfields Guiding Principles" to address assessment and redevelopment issues unique to the iron and steel industries. The cities' goals include identifying and removing threats to health and safety, restoring brownfields to productive use, and creating sustainable economic growth. Activities planned as part of this pilot include conducting site assessments of candidate properties, identifying current and past owners, obtaining technical expertise to evaluate existing remediation legal authorities, and development of remediation plans. To accomplish these goals the cities plan to select three iron and steel brownfields sites to serve as pilots. For more information contact Ted Smith of U.S. EPA Region 5 in Chicago, IL, at (312) 353-6571.

- **Philadelphia, PA** - U.S. EPA Region 3 awarded the Philadelphia City Planning Commission (PCPC) $200,000 to select ten sites and hire a contractor to perform environmental assessments at these sites. The contractor will also create a formal environmental site assessment review process by establishing an interagency Environmental Audit Review (EAR) team. In addition, PCPC will market the selected sites, and a city-wide EAR procedure will be established upon completion of the pilot program. For more information contact Tom Stolle of U.S. EPA Region 3 in Philadelphia, PA, at (215) 597-1166.

- **Pittsburgh, PA** - U.S. EPA Region 3 awarded the City of Pittsburgh $200,000 to fund activities including creating an inventory of sites with development potential; identifying environmental problems, remediation alternatives, and associated costs; exploring market reuse options; and using financial incentives to stimulate site assessment, cleanup, and redevelopment. For more information contact Tom Stolle of U.S. EPA Region 3 in Philadelphia, PA, at (215) 597-1166.

- **Prichard, AL** - U.S. EPA Region 4 has selected the City of Prichard for a Regional Brownfields Pilot. The most economically disadvantaged community in the State, Pritchard suffers from an eroding tax base, industrial and residential migration to nearby Mobile, and contamination from organic pollutants in its water supply. Prichard's objectives include creating a technical assistance team to develop remediation plans, creating an educational consortium and clearinghouse, and developing a comprehensive environmental plan. Prichard will use its status as a state Enterprise Zone to offer tax incentives to encourage redevelopment and cleanup. For more information contact Matt Robbins of U.S. EPA Region 4 in Dallas, TX, at (404) 347-5059, ext. 6212.

- **Provo, UT** - U.S. EPA Region 8 has selected the Provo City Ironton Economic Redevelopment Project for a Regional Brownfields Pilot. The project is the site of a former steel mill that constitutes the largest tract of undeveloped and non-utilized property in the city. Redevelopment of the former steel mill site and surrounding property has been blocked by the concerns over contamination and liability. The objective of the project is to create an environmentally sensitive development and address environmental justice concerns for the surrounding community. Redevelopment of the site will provide employment opportunities for the community, increase surrounding property values, and increase the city's tax base. For more information contact David Ostrander of U.S. EPA Region 8 in Denver, CO, at (303) 312-6931.

- **Sand Creek Corridor, CO** - U.S. EPA Region 8 awarded $200,000 to the State of Colorado to fund the sand Creek Corridor pilot. Activities planned under this pilot include identifying barriers to redevelopment resulting from liability concerns; ensuring that pilot project activities complement local development objectives; holding educational seminars for business stakeholders to provide accurate information about the sites in order to encourage their redevelopment; and creating a "SWAT" team as a point of contact for community and business representatives with brownfields concerns. For more information contact Kelcey Land of U.S. EPA Region 8 in Denver, CO, at (303) 294-7639.

- **San Francisco, CA** - U.S. EPA Region 9 has selected the City of San Francisco, CA, for a Regional Brownfields Pilot. The city's goal is to build a model for redevelopment of the South

- Duwamish, WA - U.S. EPA Region 10, with co-funding from EPA's Office of Underground Storage Tanks, awarded $200,000 to the Washington Department of Ecology (WDOE) to fund the Duwamish pilot. This pilot is backed by the Duwamish Coalition, a group of commercial, environmental, and community representatives. Activities planned as part of this pilot include developing a decision-tree methodology as a model for risk evaluation and remedy selection, which will be incorporated into a new WDOE guidance document for contaminated sites; and evaluating fate and transport, leachability tests of contaminated soils, and adaptation of national efforts regarding risk-based corrective action guidance. For more information contact Nancy Harney of U.S. EPA Region 10 in Seattle, WA, at (206) 553-6635.

- East St. Louis, IL - U.S. EPA Region 5 has selected the City of East St. Louis for a Regional Brownfields Pilot. The communities include Alorton, Brooklyn, Cahokia, East St. Louis, National City, Sauget, Washington Park, Madison, and Venice. The goal of the East St. Louis pilot is to develop a sustainable secondary materials manufacturing district on former Alcoa Aluminum site on 220 acres in a predominantly minority area. Activities planned for the pilot include establishing an Advisory Committee; conducting title searches and research; creating and employing a geographic information system; transaction screening of sites; and preparing reports and presentations. For more information contact Mary Beth Tuohy of U.S. EPA Region 5 in Chicago, IL, at (312) 886-7596.

- Illinois - U.S. EPA Region 5 awarded $150,000 to the Illinois Environmental Protection Agency (IEPA) to fund environmental assessments now underway at eight to ten brownfields in Chicago and East St. Louis. In addition, IEPA has been granted the use of a mobile lab to facilitate testing at these sites. The IEPA anticipates that City of Chicago officials will be involved in facilitating prospective purchaser agreements and redevelopment efforts and will serve as the focal point for communications with prospective purchasers at these sites. The City of Chicago is also considering developing a database that will track the results of environmental site assessments conducted throughout the city. For more information contact Joe Cisneros of U.S. EPA Region 5 in Chicago, IL, at (312) 886-6945.

- Indiana - U.S. EPA Region 5 awarded $150,000 to the Indiana Department of Environmental Management (IDEM) to fund environmental assessments of approximately ten brownfields in Indianapolis and the communities of Gary, Hammond, and East Chicago. IDEM selected several of the sites for assessment during the summer of 1995, and is currently assessing many of these sites. EPA Region 5 has loaned the pilot a mobile van for field testing. City and State officials will facilitate prospective purchaser agreements and redevelopment efforts. IDEM anticipates that increased information on these sites will make them more attractive to prospective buyers. For more information contact Joe Dufficy of U.S. EPA Region 5 in Chicago, IL, at (312) 886-1960.

- Miami, FL - U.S. EPA Region 4 has selected the City of Miami for a Regional Brownfields Pilot. Miami has identified a number of potential brownfields in the distressed Wynwood neighborhood, where business is over 40 percent light industry and warehousing. Wynwood, a state-designated Enterprise Zone, suffers from environmental contamination from leaking underground tanks, sewers, and industrial chemicals. Miami's goal is to assess potential brownfields and empower residents to participate fully in redevelopment planning. Miami will conduct a brownfields audit, involve the city's Neighborhood Enhancement Teams in community involvement, and identify strategies to overcome obstacles and devise incentives for local investment. For more information contact Matt Robbins of U.S. EPA Region 4 in Atlanta, GA, at (404) 347-5059, ext. 6212.

- Minnesota - U.S. EPA Region 5 awarded the Minnesota Pollution Control Agency (MPCA) $255,000* to fund its Voluntary Cleanup Program (VCP). To date, MPCA has targeted owners of 32 Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) sites to participate in the program. Remediation at one site is almost complete and is nearing completion at several other sites. MPCA anticipates that remediation at 10-15 sites will be completed by the spring of 1997. Cost recovery actions have been initiated for the resources expended in the review and oversight of VCPs. For more information contact Joe Dufficy of U.S. EPA Region 5 in Chicago, IL, at (312) 886-1960.

Bayshore community based upon the lessons learned from the closing of the adjacent Hunters Point Naval Shipyard and other military bases. The city will use a risk management model based on the innovative California regulatory Non-Attainment Zone policy. Activities planned under this pilot include identifying potential exposure pathways, defining acceptable residual levels of contamination based on proposed zoning and land use, developing a Risk Management Plan, and conducting a community involvement program to address environmental concerns related to land use, zoning, economic development, and environmental justice. For more information contact Bobbie Kahan of U.S. EPA Region 9 in San Francisco, CA, at (415) 744-2191.

- Shreveport, LA - U.S. EPA Region 6 has selected the City of Shreveport, LA for a Regional Brownfields Pilot. The goal of the city's brownfields program is to increase the economic and environmental viability of Shreveport's urban core neighborhoods. Shreveport's urban core has been selected for the federal National Performance Review program, to demonstrate a comprehensive strategy for enhancing delivery of federal support to troubled neighborhoods. Activities planned under this pilot include developing an inventory of city brownfields and criteria for ranking site redevelopment potential, conducting Phase I site assessments, exploring redevelopment options, educating the community about brownfields problems and opportunities, and providing a forum to develop community based strategies for long-term redevelopment. For more information contact Stan Hitt of U.S. EPA Region 6 in Dallas, TX, at (214) 665-6736.

- West Jordan, UT - U.S. EPA Region 8 awarded the City of West Jordan $200,000 to begin the detailed planning required to reverse the stigma of developing brownfields. Through cooperative partnerships with county, State and Federal agencies, business, and industry, West Jordan intends to leverage brownfields funds to redevelop former industrial properties to create a "high-image" business and industrial park along the Jordan River Parkway Corridor. This effort is seen as an initial step in revitalizing the city's central core, which suffers from heavy industrialization and declining residential and commercial uses. For more information contact Kelcey Land of U.S. EPA Region 8 in Denver, CO, at (303) 294-7639.

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EPA

Brownfields Regional Pilot – Atlanta, GA

Office of Outreach and Special Projects (5101)
Quick Reference Fact Sheet

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OVERVIEW

EPA Region 4 has selected the City of Atlanta for a Regional Brownfields Pilot, to be funded up to $100,000. Industrial and residential areas are mixed throughout Atlanta's urban core, with large industries surrounded by small, single-family homes and public housing projects. The city has established their own Empowerment Zone of 30 neighborhoods (population 50,000) and the Atlanta Empowerment Zone Corporation to implement their plans. Atlanta has identified 10 verified and 36 potential brownfields in the Empowerment Zone that may be contaminated with a number of toxic pollutants. Several areas contain vacant and abandoned warehouses that have become dumping grounds for waste and toxic chemicals. Ninety percent of the population is African-American, and most are below the poverty line. One study has shown that 83 percent of the city's toxic sites are located in African-American neighborhoods.

OBJECTIVES

Atlanta's overall goals are to: 1) inventory brownfields within the Empowerment Zone; 2) develop financing tools to encourage industry involvement in brownfields redevelopment; 3) provide environmental justice planning to develop sustainable communities; and 4) build a cohesive brownfield redevelopment strategy and project management capacity.

ACTIVITIES

Activities planned as part of this pilot include:

- Undertaking a minimum of three Level I and one Level II environmental audits;
- Building a brownfields inventory database;
- Producing a site identification brochure that will be the beginning of an aggressive public communications strategy and demonstration project;
- Developing remediation processes and cost analyses;
- Creating a central oversight process for reviewing technical elements of site remediation, including legal and insurance liability risks; and
- Involving community partners including Clark Atlanta University and neighborhood planning boards in organizing workshops, community meetings, and outreach efforts.

The cooperative agreement for this pilot has not yet been negotiated; therefore, activities described in this fact sheet are subject to change.

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Brownfields Regional Pilot – Clearwater, FL

Office of Outreach and Special Projects (5101)
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OVERVIEW

EPA Region 4 has selected the City of Clearwater for a Regional Brownfields Pilot to be funded up to $100,000. Clearwater's brownfields problem stems from a former lake, filled in as part of urban development 40 years ago. A conglomeration of small industrial, commercial, and mixed-use enterprises and residences eventually built on the fill. This area has now been described as the "collective brownfields area" (CBA). Clearwater attributes the business exodus from the CBA to state environmental regulations mandating property set-asides for stormwater attenuation. The CBA, representing only 10 percent of the population, has accounted for 50 percent of the city's crime; more than 33 percent of the residents live below the poverty line, and minorities comprise 40-94 percent of the neighborhoods. The CBA is a state-designated Enterprise Zone.

OBJECTIVES

The overall goal of Clearwater's brownfields program is to instill environmental justice in the CBA by completing site characterizations, offering economic redevelopment incentives, and creating job opportunities. By environmentally preparing CBA properties for redevelopment and resolving water quality issues, the city and local community groups will be able to plan for expansion of businesses in the CBA, invite a diversity of prospective investors, and create solid job opportunities for unemployed and low-to-moderate income residents. It is expected that such business activities will assist the community.

ACTIVITIES

Activities planned as part of this pilot include:

- Completing environmental site assessments in the CBA;
- Building cooperative partnerships with organizations such as the Private Industry Council, to involve local businesses and community residents in decision making;
- Establishing a revolving fund for site assessment at properties targeted for redevelopment; and
- Managing investor liability by employing the University of South Florida to prepare a flow-of-ownership plan for the CBA that will include an innovative approach to encourage businesses to move into the CBA, property transfer/liability protection, and residential support.

The cooperative agreement for this pilot has not yet been negotiated; therefore, activities described in this fact sheet are subject to change.

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Brownfields Regional Pilot – Miami, FL

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OVERVIEW

EPA Region 4 has selected the City of Miami for a Regional Brownfields Pilot to be funded up to $100,000. Miami has identified a number a potential brownfields in the economically distressed Wynwood neighborhood (population 15,500), where business is over 40 percent light industry, warehousing, and commercial. Available information indicates that soil contamination in Wynwood is primarily from underground storage tanks, sewer pipes, and industrial chemicals. Wynwood includes a state Enterprise Zone (EZ) and the Miami-Metro Dade Enterprise Community. Wynwood's poverty rate is 51 percent, exceeding the rest of Miami by about 20 percent. Wynwood residents are 62 percent Hispanic and 32 percent African-American. Of eight known contaminated sites, a five to six acre site will be selected for the brownfields pilot.

OBJECTIVES

Miami's overall brownfields goal is to redevelop brownfields in Wynwood. The city will begin by assessing potential brownfields, and this will be followed by empowering residents to fully participate in decision making and planning for redevelopment of any selected site through town hall meetings and city service centers. The empowerment is supported by the new Department of Community Planning and Revitalization. The newly restructured city government will place greater emphasis on the role of the city's Neighborhood Enhancement Teams, which include planners and other city staff familiar with the dynamics of the neighborhoods they serve.

ACTIVITIES

Activities planned as part of this pilot include:

- Conducting a brownfields audit, including analysis of preliminary data, site visits, mapping of sites, testing for pollutants, and reviewing titles;
- Empowering the community to participate in redevelopment planning through town hall meetings, community decision-making charettes, and distribution of information on brownfields projects; and
- Preparing brownfields conversion plans, including identification of strategies to overcome obstacles to redevelopment, presentation of incentives to encourage local investment, and preparation of environmental restoration plans.

The cooperative agreement for this pilot has not yet been negotiated; therefore, activities described in this fact sheet are subject to change.

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OVERVIEW

EPA Region 4 has selected the City of Prichard for a Regional Brownfields Pilot in to be funded up to $100,000. Prichard (population 34,311) is located in south Alabama, adjacent to the City of Mobile. The city is divided into three areas: Whistler, Eight Mile, and East Prichard. Annexation of several areas by Mobile, including river front property, has eroded Prichard's tax base. Prichard is the most economically depressed city in the state, and has been designated an Enterprise Zone (EZ) by the State of Alabama. Minorities account for nearly 80 percent of the city's population. Environmental assessments of a Whistler site located one mile from the city's drinking water supply found volatile organic carbons and semivolatile organic carbon contamination in soils. The combination of potential environmental hazards, general deterioration, and the social environment has significantly slowed development in Prichard.

OBJECTIVES

The overall goal of Prichard's brownfields program is to prepare for reuse of vacant and under-used sites and buildings. Objectives include creation of a technical assistance team to develop remediation plans; creation of an educational consortium; development of a public/private partnership; development of a comprehensive environmental plan; and establishment of an environmental clearinghouse. Prichard will use its status as a state EZ, including tax and non-tax incentives, to encourage cleanup and redevelopment.

ACTIVITIES

Activities planned as part of this pilot include:

- Developing a comprehensive environmental/redevelopment plan for the Prichard area;
- Creating an environmental clearinghouse to serve the local area;
- Coordinating community involvement and involving environmental justice communities in all phases of the project through the city's neighborhood association program;
- Funding technical assistance for identifying site-specific problems;
- Using public/private partnerships to contribute environmental research, experimentation, and analyses to the project; and
- Conducting educational programs for the community, local businesses, lenders, investors, and developers.

The cooperative agreement for this pilot has not yet been negotiated; therefore, activities described in this fact sheet are subject to change.

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APPENDIX C

FEDERAL ENVIRONMENTAL INVESTIGATION AND REMEDIATION CONTRACTS OF POTENTIAL INTEREST TO VENDORS OF INNOVATIVE REMEDIATION TECHNOLOGIES

FEDERAL ENVIRONMENTAL RESTORATION AND REMEDIATION CONTRACTS OF POTENTIAL INTEREST TO VENDORS OF INNOVATIVE REMEDIATION TECHNOLOGIES

The typical vendor of innovative technologies will act as a subcontractor on larger prime contracts, providing the specialized expertise and technology they sell. Listed below are some of the major Federal contract vehicles that are used to perform remediation. Included are contracts let by EPA, the Naval Facilities Engineering Command, the U.S. Army Corps of Engineers (USACE), and the Air Force. Where available, the name and address of the prime contractor is provided below. Based on discussions with the various prime contractors, information is provided regarding the marketing approach each company prefers.

Alternative Remedial Contract Strategy (ARCS). This is an EPA regional contract vehicle that is used to investigate and clean up abandoned hazardous waste sites. It is used to support remedial investigations, feasibility studies, remedial alternative evaluation and design, construction management, and other activities. Vendors can contact the EPA Region 4 office for information about the vehicle.

Superfund Technical Assistance and Response Team (START). This, too, is a regional vehicle that supports the investigation and cleanup of abandoned hazardous waste sites. Vendors can contact the EPA Region 4 office for information on the contract.

In Region 4, EPA has awarded the START contract to PRC Environmental Management, Inc. Opportunities for the application of innovative technologies may be available through this contract. Vendors may forward information to:

PRC Environmental Management, Inc.
Marquis Two Tower
Peachtree Center Avenue, Suite 900
Atlanta, GA 30303
Attn: Steve Pierce

Technical Support to the Superfund Innovative Technology Evaluation (SITE) Program. This is a national contract designed to help in the testing and development of innovative technologies. There are two programs: the emerging technologies program, which funds vendors in small-scale tests, and the technology demonstration program, which funds full-scale technology evaluations and expects vendors to

share costs. Vendors are encouraged to apply to the SITE Program at the National Risk Management Research Laboratory (NRMRL) of EPA's Office of Research and Development in Cincinnati, Ohio. The address for both program offices and contact name and phone numbers appear below.

EPA Office of Research and Development
26 West Martin Luther King Drive
Cincinnati, OH 45268

Emerging Technology Program
Randy Parker, Norma Lewis
(513) 569-7665

Demonstration Program
Annette Gatchette
(513) 569-7697

Total Environmental Restoration Contracts (TERC). These vehicles are managed by the operating divisions of the U.S. Army Corps of Engineers (USACE). As the name suggests, the intent is to provide complete remediation services. TERC services cover all phases of remediation, from preliminary assessment/site investigation to operation and maintenance. Any U.S. Army installation may use the vehicle. EPA also may obtain TERC services through USACE. Refer to the attached EPA fact sheet that describes the use of USACE preplaced contracts.

The USACE Omaha District has awarded a TERC contract to IT Corporation, which provides a vehicle for investigation and remedial work to be done predominantly on Air Force bases in Georgia, North Carolina, South Carolina, and Virginia. IT Corporation accepts information from vendors and based on a preliminary review of the technology type, responds by sending vendors a pre-qualification package for approved vendor listing. Information should be sent to:

IT Corporation
312 Directors Drive
Knoxville, TN 37923
Attn: Dan Duncan

Technical Support to the Comprehensive Long-Term Environmental Action Navy (CLEAN). This vehicle is managed by the Naval Facilities Engineering Command (NAVFACENGCOM) Field Divisions. It provides engineering and technical support for all aspects of the Navy's environmental program, including remedial action.

In Region 4, the Atlantic Division (LANTDIV) in Norfolk, Virginia, has awarded a CLEAN contract to EN - Safe, ABB Environmental, and Brown and Root.

The Southern Division (SOUTHDIV) in Charleston, South Carolina, has awarded a CLEAN contract to Brown & Root Environmental. Opportunities for the application of innovative technologies may be available through this contract.

These contracts represent some of the major vehicles available that support remediation work and therefore can use innovative technologies. Since most of the contracts are regional, vendors may wish to identify the prime contractor in the region of interest to present the capabilities of their technologies.

APPENDIX D

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REFERENCES

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