



# THE MEMPHIS DEPOT TENNESSEE

---

## ADMINISTRATIVE RECORD COVER SHEET


AR File Number 710

# Rev. 1 BRAC Cleanup Plan Version 6

September 2002



**Defense Distribution Center (Memphis)**  
**2163 Airways Blvd.**  
**Memphis, TN 38114**

CGA, Inc. 



U.S. Army Engineering  
and Support Center, Huntsville

U.S. Army Engineering and Support Center, Huntsville  
Contract No. DACA87-02-P-0033W31RYO-2029-1335

## EXECUTIVE SUMMARY

---

### EXECUTIVE SUMMARY

The Secretary of Defense, in cooperation with Congress, proposed a law to close bases and bring base structure in line with force structure. Public Law 100-526, enacted in 1988, created the Commission on Base Realignment and Closure (BRAC). The law charged the Commission with recommending installations for closure or realignment, based on independent study of the domestic military base structure. With subsequent passage of Public Law 101-510 under Title XXIX, enacted in 1990, Congress created the Defense BRAC Commission to provide a fair process for the timely closure and realignment of military installations. Public Law 101-510 provided for the BRAC Commission to meet in 1991, 1993 and 1995. The BRAC process identifies installations based on eight criteria, including military value, cost saving and return-on-investment, and the economic and environmental impacts of closure. In July 1993, the President of the United States announced his base closure community reinvestment program to help speed the economic recovery of communities affected by the Department of Defense's BRAC program. The BRAC 95 program has been developed in response to the President's program to limit delays in property reuse and transfer by changing the way cleanup is conducted (i.e., from a slow-paced, structured process to an accelerated, fluid process)

This BRAC Cleanup Plan (BCP) for the former Defense Distribution Depot Memphis, Tennessee is being prepared under the BRAC 95 program. The BRAC process includes preparing an environmental baseline survey, Community Environmental Response Facilitation Act reports, sampling and analysis recommendations and a BCP. The BCP process under the BRAC 95 program centers on a single goal: *expediting and improving environmental response actions in order to facilitate disposal and reuse of the Depot while protecting human health and the environment.*

The BCP provides the status, management and response strategy, and action items related to the ongoing environmental restoration and associated compliance programs at the Depot. These programs support full restoration of the base property, where feasible, which is necessary to meet the requirements for property transfer and reuse activities associated with closure of the installation.

The BCP is a planning document based on the best available, current information and is used to fulfill the Site Management Plan requirements of the Federal Facilities Agreement signed by the Depot, the U.S. Environmental Protection Agency and State of Tennessee Department of Environment and Conservation. The information and assumptions presented may not necessarily have final approval from the base authorities and/or federal and state regulatory agencies. The BCP

## **EXECUTIVE SUMMARY**

---

is a dynamic document that will be updated periodically to reflect the current status and strategies of remedial actions. This document is the fifth in a series of updates/modifications and represents conditions and strategies as of September 2002

The following BCP abstract (Table ES-1) provides a summary of essential information contained in the BCP for the Depot. It includes summaries of the installation description, environmental condition of the property, reuse planning status, restoration program, compliance program, conservation program, issues for execution of the program and projected fiscal year funding.



<u>ACRONYM</u>	<u>DEFINITION</u>
ACM	Asbestos containing material
AMC	Army Materiel Command
AST	Aboveground storage tank
BCP	BRAC Cleanup Plan
BCT	BRAC Cleanup Team
BEC	BRAC Environmental Coordinator
bgs	Below ground surface
BRAC	Base Realignment and Closure
CAIS	Chemical Agent Identification Set
CEHNC	U.S. Army Engineering and Support Center, Huntsville
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act, as amended
CERFA	Community Environmental Response Facilitation Act
CESAM	U.S. Army Corps of Engineers South Atlantic Division, Mobile
CFR	Code of Federal Regulations
CWM	Chemical warfare materiel
DA	Department of the Army
DDC	Defense Distribution Center
DDT	4,4'-Dichlorodiphenyltrichloroethane
DENIX	Defense Environmental Network Information Exchange
DSERTS	Defense Site Environmental Restoration Tracking System
DLA	Defense Logistics Agency
DLAM	Defense Logistics Agency memo
DOD	Department of Defense
DRC	Depot Redevelopment Corporation
DRMO	Defense Reutilization and Marketing Office
EA	Environmental assessment
EBS	Environmental baseline survey
EPA	Environmental Protection Agency
ER	Early removal
°F	Degrees Fahrenheit
FS	Feasibility study
HR	Hazardous substance release or disposal
HS	Hazardous substance storage

IRDMIS	Installation Restoration Data Management Information System
IRP	Installation Restoration Program
IRPIMS	Installation Restoration Program Information Management System
LBP	Lead-based paint
LRA	Local reuse authority
MDRA	Memphis Depot Redevelopment Agency
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEPA	National Environmental Policy Act
NFA	No further action
NPDES	National Pollutant Discharge Elimination System
OSHA	Occupational Safety and Health Administration
OU	Operable unit
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PCE	Tetrachloroethylene
pCi/L	PicoCuries per liter
POI	Petroleum, oil and lubricants
ppm	Parts per million
PR	Petroleum release or disposal
PS	Petroleum storage
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI A	RCRA facility assessment
RI	Remedial investigation
RI/FS	Remedial investigation/feasibility study
ROD	Record of decision
SARA	Superfund Amendments and Reauthorization Act
SPCC	Spill prevention, control and countermeasures
TCE	Trichloroethene
TDLC	Tennessee Department of Environment and Conservation
TRC	Technical Review Committee
USACE	U.S. Army Corps of Engineers
UST	Underground storage tank

UXO	Unexploded ordnance
VOC	Volatile organic compound

# TABLE ES-1 BRAC CLEANUP PLAN ABSTRACT FOR FY02

710 7

## Department of Defense Component Defense Logistics Agency

<b>Installation Name:</b>	<u>Defense Distribution Center (Memphis)</u>	<b>Date Prepared:</b>	<u>200209</u>
<b>FFID:</b>	<u>TN-9715020570</u>	<b>BRAC Round:</b>	<u>IV</u>
<b>Location:</b>	<u>Memphis Tennessee</u>	<b>BRAC Type:</b>	<u>C</u>

### INSTALLATION SUMMARY

Scheduled Operational Closure Date		Date CERCLA EBS Submitted	<u>199611</u>
Actual Operational Closure Date	<u>199709</u>	Number of CERCLA Acres Proposed	<u>57.43</u>
		Number of CERCLA Acres Concurred	<u>57.43</u>
Total Number of Installation Acres	<u>642</u>	Date CERCLA Concurrence Received	<u>199703/199810</u>
Acres Retained by Component	<u>0</u>		
Acres to be Transferred to another Component	<u>0</u>	Date BCI Formed	<u>199512</u>
Acres Planned for non-DoD Federal Transfer	<u>0</u>	Date Initial BCP Completed	<u>199611</u>
Acres Planned for Non-Federal Transfer	<u>642</u>	Date of Last BCP Update	<u>200112</u>
		Date RAB Established	<u>199402</u>
Actual Acres Leased to non-DoD Federal Entity	<u>0</u>	Actual Acres Transferred to non-DoD Federal Entity	<u>0</u>
Actual Acres Leased to Non-Federal Entity	<u>578</u>	Actual Acres Transferred to Non-Federal Entity	<u>24.54</u>

Types of Acres	Environmental Condition of Property						
	1	2	3	4	5	6	7
Acres according to CERCLA	93	0	22.83	137.45	0	481.46	0

Additional Environmental Considerations	Number of Acres
Petroleum oils and lubricants	8.01
Unexploded ordnance/Ordinance or explosives	0
Areas that require protection because of the presence of natural or cultural resources	56.03

Total Number of Acres Available for Transfer	<u>137.45</u>
Total Number of Acres Eligible for Disposal	<u>642</u>

Activity	Installation Budget (\$000)									FY 10-Completion
	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	
Restoration	9250	2061	2198	7351	1990	1990	1683	1017	196	1468
Compliance	44	0	0	0	0	0	0	0	0	0
Planning	5	5	5	5	5	5	5	5	5	5
Administration	884	500	500	500	500	500	500	500	500	500
<b>TOTAL</b>	<b>10183</b>	<b>2566</b>	<b>2703</b>	<b>7856</b>	<b>2495</b>	<b>2495</b>	<b>2188</b>	<b>1522</b>	<b>701</b>	<b>1973</b>

### REUSE PLANNING STATUS

Name of I RA	<u>Depot Redevelopment Corporation of Memphis and Shelby County</u>	
Status of the Redevelopment Plan	<u>Completed and approved by I RA board city and county</u>	
Projected Date of Installation-Wide Disposal and Reuse EA/EIS	<u>199803</u>	Type of NEPA
Actual Date of Installation-Wide Disposal and Reuse EA/EIS		<u>LA</u>
Final Property Disposal Date	<u>201510</u>	Actual/Projected
		<u>Projected</u>

	FOST	FOSL
--	------	------

**Defense Distribution Center (Memphis)**

Rev 1 BRAC Cleanup Plan Version 6

September 2002

ES - iii

# TABLE ES-1 BRAC CLEANUP PLAN ABSTRACT FOR FY02

710

8

Cumulative NUMBER Completed	2	8
Cumulative ACRFS Completed	24 54	578
NUMBER Projected in Next Fiscal Year		1
ACRES Projected in Next Fiscal Year		64

## RESTORATION PROGRAM

### Summary

The EPA placed the Defense Depot Memphis, Tennessee (DDMT, now the Memphis Depot Caretaker [MDC]) on the National Priorities List on October 14, 1992. Contaminated media include soil, pond and lake sediment, and groundwater. EPA and TDEC recognize 81 sites at the Memphis Depot including former landfill areas, former hazardous material/waste storage areas, former hazardous material recoup area, former wood treatment dip vat area, and former spray paint and sandblast facilities. In 1997, the Depot completed initial RI, Screening and BRAC site sampling, and in 2001 completed additional RI sampling to fill data gaps. Contaminants include TCE, PCL, dieldrin, and heavy metals. BCT reviewed data to determine future actions and made many parcel category changes. By 1999, Phases I and II construction of the Interim Remedial Action for Groundwater at Dunn Field were completed with the installation of 11 recovery wells and the discharge piping system. In 1998, the Depot completed a dieldrin contaminated soil removal action at the military family housing units and a PCB contaminated soil removal action at Bldg 274. In 1999, the Depot completed a lead contaminated soil removal project at the old paint shop and maintenance area (Parcels 35 and 28). In 2001, the Depot completed the CWM removal action at Dunn Field, the Main Installation RI/FS reports and the Proposed Plan public comment period. DLA signed the Main Installation ROD on February 22, 2001. TDEC signed the Main Installation ROD on March 1, 2001. EPA signed the Main Installation ROD on September 6, 2001. Prior to final execution of the ROD, DLA exercised its removal authority under CERCLA Section 104, as delegated in EO 12580, and removed lead contaminated soil at the south end of Bldg 949. The Main Installation ROD includes enhanced bioremediation of fluvial aquifer groundwater and institutional controls in the form of deed restrictions. The Depot is conducting pre-design groundwater fieldwork including an enhanced bioremediation treatment treatability study at the Main Installation. The Depot completed Dunn Field RI fieldwork in 1999. The BCT approved the Dunn Field RI report in 2002. The Depot completed a soil vapor extraction treatability study at Dunn Field for use in the FS. The BCT received the Rev 0 Dunn Field FS for review in August 2002. The Depot will conduct an early removal of lead in soil at the former pistol range on Dunn Field.

	Site Name	Date
Final Remedy in Place/Response Complete	POI Burial Sites	200803
Long-Term Monitoring	POI Burial Sites	201505

## COMPLIANCE PROGRAM

### Summary

MDC received NPDES permit termination from TDEC in June 2001. All air permits were closed in 1996. TDEC terminated the hazardous waste container storage portion of the facility's RCRA Part B permit effective October 22, 1998. The Depot completed cleanup of Bldg 308 in 2001. The following have been completed: Radon survey, Lead-Based Paint survey, Radiological survey, Natural/Cultural Resources survey and Asbestos re-inspection. The Depot removed the two remaining permitted underground storage tanks in July 1998 and closed the permits. The Nuclear Regulatory Commission deleted this facility from the DDC's permit.

## CONSERVATION PROGRAM

### Summary

No threatened or endangered species, protected habitats, wetlands, archeological, or Native American sites have been identified at the facility. Twenty warehouses and three guard buildings built in 1942 are eligible for placement on the National Register of Historic Places. The Army Materiel Command, Tennessee Historic Preservation Office and the Advisory Council for Historic Places signed the Memorandum of Agreement regarding preservation of these buildings.

# TABLE ES-1 BRAC CLEANUP PLAN ABSTRACT FOR FY02

710

9

## FAST-TRACK CLEANUP SUMMARY

### Summary

The BCI works very closely with the DRC to include reuse priorities in the decision-making process. The BCT also works very closely with each other and the contractors in determining appropriate investigation and remediation strategies. BRAC sampling was completed in 1997. Additional BRAC sampling requested by the BCT was completed in 1998. The BCT reviewed the data, determined future actions and made several parcel category changes. Although EPA concurred with the CERFA uncontaminated parcels letter reports dated March 1997 and July 1998, additional data collected since then regarding areas of groundwater contamination beneath the MI and Institutional Controls (ICs) required by the MI ROD for subparcels within FUs 1 through 6 (excluding Parcels 1 and 2) have resulted in subparcels reverting from ECP categories 1 through 4 to either Category 6 (above groundwater contamination) or Category 4 (ICs). FOST 1 for Parcel 2 (6.51 acres) was signed February 23, 2001. The deed for Parcel 2 was signed September 18, 2001. FOST 2 for Parcel 1 (18.03 acres) was signed on September 27, 2001. The deed to the City of Memphis Police Department for 4.67 acres of Parcel 1 was signed February 6, 2002. The deed to the DRC for 13.36 acres of Parcel 1 was signed May 6, 2002. ATSDR completed the 1999 Public Health Assessment for the Defense Depot Memphis, Tennessee. The BCI hosted two Community Information Sessions in 1999 regarding the proposed removal action engineering evaluations/cost analyses. The BCT hosted an Availability Session and Public Comment Meeting for the Main Installation Proposed Plan in 2000.

	Acres	Date
Cumulative CERFA Concurrence Acres	57.43 (see above summary)	1998/10
	Date	Actual/Projected
BCI Adjournment		
RAB Adjournment		
Early Transfer Authority		

## BCT REVIEW

		Reviewed	
		YES	NO
The BCP Abstract has been reviewed by the BCI			
DoD BFC	John De Back	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Name		
US EPA BCI Member	Furpin Ballard	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Name		
State BCT Member	James Morrison	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Name		

**SECTION ONE****INTRODUCTION AND SUMMARY****1.0 INTRODUCTION AND SUMMARY**

This Base Realignment and Closure (BRAC) Cleanup Plan (BCP) for the former Defense Distribution Depot Memphis, Tennessee was updated for the Defense Distribution Center (Memphis) as of May 2002. This BCP will be used to fulfill requirements for a Site Management Plan under the Federal Facilities Agreement

Located in Memphis, Tennessee (Shelby County), the Depot is in the south-central section of the city and encompasses approximately 642 acres. In March 1995, the BRAC Commission recommended the mission at the Depot end by September 30, 1997 and called for the assumption of its responsibilities by other installations. All 642 acres have been identified for transfer

Past waste and resource management practices at the Depot contaminated some areas of the facility. Federal law requires federal agencies to investigate and clean up environmental contamination to a level that protects human health and the environment as part of the release and reuse of the property. The cleanup at the former Depot is on track and addresses these past practices. Current waste and resource management practices are conducted in compliance with applicable environmental laws and regulations in order to protect human health and the environment

This BCP is a planning document that presents the status, strategy and schedule for environmental restoration and compliance activities at the Depot. The BCP is based on the best information currently available. The information and schedules presented in this BCP were obtained from the BRAC Cleanup Team (BCT), which consists of representatives from the Defense Logistics Agency, the U.S. Environmental Protection Agency (EPA) Region IV and the State of Tennessee Department of Environment and Conservation (TDEC) Division of Superfund. Because it was necessary to make certain assumptions in preparing this BCP, implementation programs and cost estimates could be significantly altered if environmental conditions and/or administrative decisions change from those assumed. Such changes, if they occur, will be reflected in updates to the BCP.

The BCP is organized into the following sections and appendices in accordance with the BRAC Cleanup Plan Guidebook (DOD 1996):

- Section 1 describes environmental restoration program objectives, explains the purpose of the BCP; introduces the BCT and project team formed to review the program; provides a brief installation history; and summarizes the site environmental setting

**SECTION ONE****INTRODUCTION AND SUMMARY**

- Section 2 summarizes the current status of the Depot property disposal planning process, describes the relationship of the disposal process to other environmental programs, and summarizes potential and anticipated property transfer mechanisms.
- Section 3 summarizes the current status and past history of the Depot environmental restoration program, environmental compliance programs, natural and cultural resource programs, community relations activities that have occurred to date, and the environmental condition of the Depot property.
- Section 4 describes the Depot-wide strategy for environmental restoration, compliance, natural and cultural resources, and community involvement
- Section 5 provides the master schedules of planned and anticipated activities to be performed throughout the duration of the environmental restoration program, including environmental restoration program activities and natural and cultural resources, and provides a BCT meeting schedule
- Section 6 describes specific technical and/or administrative issues to be resolved and presents a strategy for resolving those issues
- Section 7 lists the primary references used in preparation of the BCP.

The following appendices are included in this document:

- Appendix A contains Table A-1 presenting funding requirements.
- Appendix B contains Table B-1 summarizing environmental restoration program and other associated technical documents in chronological order.
- Appendix C contains summaries of removal action, interim remedial and remedial action decision documents
- Appendix D contains summaries of Finding of Suitability to Lease (FOSL) and Finding of Suitability to Transfer (FOST) documents produced during this period.
- Appendix E contains an administrative record index and presents working conceptual models for environmental restoration at BRAC sites as well as other materials relevant to the BCP, including a summary of issues related to



**SECTION ONE****INTRODUCTION AND SUMMARY**

environmental justice, a letter of regulatory concurrence on the Community Environmental Response Facilitation Act (CERFA) report, the radiological survey reports and permit closure approval from the Nuclear Regulatory Commission, closure of the hazardous waste container storage portion of the RCRA Part B permit from TDEC, closure of the National Pollution Discharge Elimination System (NPDES) permit from TDEC, a transformer inventory and test results, radon survey test results for the Depot and letters to the BCT regarding parcel boundary designations.

**1.1 ENVIRONMENTAL RESPONSE OBJECTIVES**

The Defense Distribution Center (Memphis) is responsible for the management and overall implementation of environmental programs at the Depot. The U.S. Army Corps of Engineers Engineering and Support Center, Huntsville (CEHNC), manages remedial investigations/feasibility studies (RI/FS) under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The CEHNC also manages Resource Conservation and Recovery Act (RCRA) facility investigations/corrective measures studies at the facility. In addition, the CEHNC manages other environmental investigation, removal design, remedial design and corrective measures design activities. The U.S. Army Corps of Engineers South Atlantic Division - Mobile (CESAM) provides support to the CEHNC for removal action, remedial action and corrective measures implementation as well as compliance program support.

The combined objectives of the BCT, CEHNC and other supporting agencies for the environmental restoration and compliance program at the Depot are as follows:

- Protect human health and the environment;
- Continue compliance with existing statutes and regulations;
- Conduct ongoing environmental restoration program activities in accordance with CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA); RCRA, the State of Tennessee regulations, and other applicable regulations;
- Meet Federal Facility Agreement (FFA) schedules and deadlines;

**SECTION ONE****INTRODUCTION AND SUMMARY**

- Continue efforts to identify all potentially contaminated areas and incorporate any new sites into the BCP, as appropriate.
- Establish priorities for environmental restoration and restoration-related compliance activities so that property disposal and reuse goals can be met;
- Complete the environmental restoration process as soon as practicable for each site, in an order of priority that takes into account both environmental concerns and redevelopment plans;
- Identify opportunities for selected removal actions to control, eliminate, or reduce risks to manageable levels;
- Continue to consider future land use when characterizing risks associated with releases of hazardous substances wastes.
- Conduct long-term remedial actions for groundwater and any necessary reviews to evaluate the progress of remediation.
- Establish interim and long-term monitoring plans for other Remedial Actions (RAs), as appropriate.
- Continue to identify and map the environmental condition of installation property with the intent of identifying areas suitable for transfer by deed;
- Conduct site-specific environmental baseline surveys (EBSs) as necessary to support transfer and lease of property;
- Meet requirements of the National Environmental Policy Act (NEPA) related to environmental restoration, property disposal, and reuse of the Depot, and
- Advise the Army Materiel Command (AMC) of property that is deemed suitable for transfer and properties that are not suitable for transfer because they are either not properly evaluated or pose an unacceptable human health or environmental risk.

**SECTION ONE****INTRODUCTION AND SUMMARY****1.2 BCP PURPOSE, UPDATES AND DISTRIBUTIONS**

This BCP is intended to.

- Summarize the current status of the Depot's environmental restoration programs;
- Present a comprehensive strategy for implementing response actions necessary to protect human health and the environment;
- Present schedules for restoration and compliance activities, and
- Function as the annual update to the Site Management Plan (SMP), as required under the FFA dated March 6, 1995

The strategy integrates activities being performed under the environmental restoration program and associated environmental compliance programs to support full restoration of the Depot.

This BCP was prepared with information available as of September 2002. Certain information presented in this BCP is derived from the final EBS (Woodward-Clyde 1996), Remedial Investigation Sites Letter Reports (CH2M Hill 1998b), Screening Sites Letter Reports (CH2M Hill 1998a), Revised BRAC Parcel Summary Reports (CH2M Hill 1998c), Main Installation Remedial Investigation Report (CH2M Hill 2000a), Main Installation Feasibility Studies for Groundwater and Soils (CH2M Hill July 2000b and 2000c), Main Installation Record of Decision (CH2M Hill 2001b), Dunn Field Remedial Investigation Report Rev 2 (CH2M Hill 2002a) and Main Installation Remedial Design Workplan Rev 2 (CH2M Hill 2002b). Changes to information derived from these documents will be reflected in subsequent versions of the BCP. Additional information on the site history and environmental setting can be found in the EBS.

The BCP is a dynamic document that will be updated as needed to incorporate newly obtained information and reflect the completion or change in status of any cleanup actions. Updates of the BCP will be distributed to each member of the BCT, as well as to additional parties identified in Table 1-1.

**1.3 BCT/PROJECT TEAM**

The Depot BCT was established in December 1995, and the Depot's BRAC Environmental Coordinator (BEC) coordinates meetings. BCT meetings are the means of conducting periodic

**SECTION ONE****INTRODUCTION AND SUMMARY**

program reviews and reaching consensus on decisions with federal and state regulators. The BCT includes the BEC, the U.S. Environmental Protection Agency (EPA) Region IV and the State of Tennessee Department of Environment and Conservation (TDEC) Division of Superfund. A project team consisting of technical, operational, reuse and administrative specialists, as needed, supports the BCT. Table 1-1 provides a list of the BCT and project team members and their roles and responsibilities.

**1.4 SITE DESCRIPTION AND HISTORY OF INSTALLATION**

This section describes the site and operations history of the Depot.

**1.4.1 Site Description**

The Depot is located in the south-central section of Memphis in Shelby County, Tennessee (Figure 1-1). It comprises 642 acres, and can be divided into two geographical areas: the Main Installation and Dunn Field. The Main Installation consists of 578 acres, and Dunn Field consists of 64 acres.

The Depot was placed on the National Priorities List in October 1992. The Depot has conducted environmental investigations and plans to conduct further environmental investigations under the requirements of CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). To assist further investigations at the Depot, representatives of the Depot, the CLHNC, EPA and TDLC divided the facility into four potential Operable Units (OUs) and seven Functional Units (FUs) based on similar historical use for conducting baseline risk assessments. The Main Installation is divided into three OUs (2 through 4) and six FUs (1 through 6 with groundwater being FU-7) (Figure 1-2a). OU-2 is located in the southwestern quadrant of the Main Installation area of the Depot and is characterized as an industrial area where maintenance and repair activities took place. OU-3 is located in the southeastern quadrant of the Main Installation area and contains the entire southeastern watershed and golf course. OU-4 is located in the north-central section of the Main Installation area where material storage took place. Dunn Field, located north of the Main Installation and identified as OU-1, is the only known and documented burial area on the Depot. To assist investigations at Dunn Field, the Depot's contractors divided it into three Areas (Figure 1-2b). The local reuse authority (LRA), originally known as the Memphis Depot Redevelopment Agency (MDRA) and now the Depot Redevelopment Corporation (DRC), further subdivided the Depot property into parcels and further divided parcels into subparcels to delineate buildings and CERCLA sites (Main Installation – Figure 1-3a) (Dunn Field – Figure 1-3b).

**SECTION ONE****INTRODUCTION AND SUMMARY****1.4.2 Installation History and Mission**

The 642 acres on which the Depot is located were originally used for producing cotton until purchased by the U.S. Army in 1940. The initial mission and function of the Depot was to provide stock control, storage and maintenance services for the Army Engineer, Chemical and Quartermaster Corps. The installation was originally named Memphis General Depot, but has also been known as Memphis Quartermaster Depot, Memphis Army Service Forces Depot and Memphis Army Depot.

During World War II, the Depot served as an internment center for 800 prisoners of war and performed supply missions for the Signal and Ordnance Corps. From 1963 until closure on September 30, 1997, the Depot was a principal distribution center for the Defense Logistics Agency (DLA) (formerly the Defense Supply Agency) for shipping and receiving a variety of materials including hazardous substances (pesticides, swimming pool chemicals, firearm cleaning and rust preventative chemicals), textile products, food products, electronic equipment, construction materials, and industrial, medical and general supplies. The Depot received, warehoused and distributed supplies common to all U.S. military services in the southeastern United States, Puerto Rico and Panama. Approximately four million line items were received and shipped by the Depot annually. The Depot shipped approximately 107,000 tons of goods a year (CH2M Hill 1995b).

**1.5 OFF-BASE PROPERTY/TENANTS**

There are no off-base properties or tenants associated with the Depot. For the EBS, an electronic record search of federal and state environmental databases was conducted for properties adjacent to the Depot. In addition, visual inspections by automobile were performed on properties and facilities adjacent to the Depot. Recent groundwater samples collected in monitoring wells up gradient from the southwest and southeast corners of the Main Installation and from the northeast corner of Dunn Field contained detectable levels of chlorinated solvents. IDEC has initiated an investigation to identify the source of the chlorinated solvents up gradient from the Main Installation at the request of the EPA. The Depot is preparing documentation for use by TDEC to investigate the source of chlorinated solvents up gradient from the Main Installation and Dunn Field.

**1.6 ENVIRONMENTAL SETTING**

This section describes the environmental setting of the Depot, including the physical setting, demographics, climatology, hydrology, geology, soils and hydrogeology.

**SECTION ONE****INTRODUCTION AND SUMMARY****1.6.1 Physical Setting**

The Depot encompasses 642 acres in the south-central section of Memphis, 4 miles southeast of the Central Business District and 1 mile north of Memphis International Airport (Figure 1-1). The facility is located in a mixed residential, commercial and industrial land use area.

Generally, the Depot is described as consisting of two geographic areas — the Main Installation and Dunn Field. The Main Installation consists of 578 acres bordered by Airways Boulevard to the east, Perry Road to the west, Ball Road to the south and Dunn Avenue to the north. The Main Installation is highly developed and contains most of the buildings and material storage yards for the facility. At the time of closure, there were approximately 118 buildings, 26 miles of railroad tracks and 28 miles of paved streets at the Depot. Approximately 126 acres were used for covered storage space and approximately 138 acres are used for open storage space. Dunn Field is located just to the north, across Dunn Avenue from the northwest quadrant of the Main Installation. Dunn Field consists of 64 acres of mostly undeveloped land that has historically been used for storage of bauxite and fluorspar and for waste disposal.

**1.6.2 Demographics**

The Depot is located in an area of widely varying uses. Formerly a residential and agricultural area, the surrounding area is characterized by small commercial and manufacturing uses north and east of the Depot and single-family residences south and west of the Depot. Numerous small church buildings are scattered throughout the residential neighborhoods. Several schools are located in the neighborhoods as well as two neighborhood parks.

Airways Boulevard, located on the east border of the Main Installation, is the most heavily traveled thoroughfare in the vicinity. It is developed with numerous small, commercial establishments, particularly in the area from the Depot south to the Airways Boulevard interchange with Interstate 240. Businesses along Airways Boulevard are typical of highway commercial districts and include convenience stores, liquor stores, restaurants, used car dealers, and service stations. Other commercial establishments are located north, south, and west of the Depot. Most are small groceries or convenience stores that serve their immediate neighborhoods. Memphis Light, Gas, and Water operates a large substation located northwest of the Depot along Person Avenue.

The Frisco Railroad and Illinois Central Gulf Railroad rail lines are north of the Depot. A number of large industrial and warehousing operations are located along the rail lines in this area, including the

**SECTION ONE****INTRODUCTION AND SUMMARY**

Kellogg Company; Laramie Tires; Lanigan Storage and Van Company; the Kroger Company; the National Manufacturing Company, Incorporated; and United Uniforms. A triangular area located immediately north of the Depot along Dunn Road also contains several industrial firms.

Most of the land surrounding the Depot is highly developed; however, three relatively large, undeveloped sites exist in the general area. The largest site is located north of the Depot at Person Avenue and Kyle Street. The other undeveloped areas are located south of the Depot along Ball Road and Ketchum Road in the vicinity of the Orchid Manor Apartments, and east of the Depot along Dwight Street.

In Memphis, zoning controls and subdivision requirements are under the jurisdiction of the Memphis and Shelby County Office of Planning and Development. The Depot property is zoned Light Industrial. This designation extends to several contiguous land parcels located east of the Depot along Airways Boulevard, in the vicinity of the Kellogg plant west past Rozelle Street. Several smaller areas adjacent to those mentioned above are zoned Heavy Industrial. Most of the remaining land in the vicinity of the Depot is zoned for residential use.

The 2000 census data for Memphis and for Shelby County is listed below (National Census Report, August 2000).

<b>Location</b>	<b>2000 Census Data</b>
City of Memphis	606,109
Shelby County	873,000

### **1.6.3 Climatology**

The Depot is located in the West Tennessee Climatic Division of the United States (Law Environmental 1990b). This division experiences a typical continental climate with warm, humid summers and cold winters. The average temperatures are 40 degrees Fahrenheit (°F) in the winter and 80°F in the summer. The Memphis area has a 30-year annual precipitation average of 50 inches. Normally, precipitation is heaviest during the winter and early spring. A second, less significant rainfall period occurs as thundershowers during late spring and early summer. The one-year, 24-hour average rainfall for the area surrounding the Depot is 3.4 inches (Law Environmental 1990b). Prevailing winds are from the southwest.

**SECTION ONE****INTRODUCTION AND SUMMARY****1.6.4 Hydrology**

Surface drainage at the Depot is accomplished by overland flow to swales, ditches, concrete-lined channels and a storm drainage system. The majority of surface drainage at Dunn Field is achieved by overland flow to a storm drainage system that flows west of the facility (Figure 1-4). The northeast quadrant of Dunn Field drains to a concrete-lined channel that flows north. The Main Installation's surface drainage is achieved by overland flow to a storm drainage system. The concrete-lined channels and storm drainage system are directed to Nonconnah Creek or to either Tarrant Branch or Cane Creek, tributaries of Nonconnah Creek. Nonconnah Creek drains into Lake McKellar, a tributary of the Mississippi River. Where exposed, undisturbed surface soils are predominantly grassed, fine-grained semi-cohesive materials that tend to promote large volumes of rapid runoff. Paved and built-up sections of the facility also tend to generate significant amounts of runoff.

Topographically, most of the Depot is generally level with or above the surrounding terrain; therefore, the Depot receives little or no run-on from adjacent areas.

Two permanent surface water bodies exist at the Depot. The larger is Lake Danielson at approximately four acres in size. Lake Danielson receives a significant amount of the facility's stormwater runoff, primarily from the area where the "20 Typicals" (Buildings 229, 230, 250, 329, 330, 349, 350, 429, 430, 449, 450, 529, 530, 549, 550, 629, 630, 649 and 650) are located. Lake overflow is channeled through a drop inlet at the dam through a concrete-lined channel to a culvert extending beneath N Street and Ball Road. The smaller surface water body is the golf course pond. It receives runoff from the surrounding golf course, the area where Buildings 249, 450, 251, 265, 270, 271 are located; and the south parking lot. Lake and pond overflow is directed to culverts extending beneath N Street and Ball Road and is then directed to Nonconnah Creek via unnamed tributaries.

**1.6.5 Geology and Soils**

Topographically, the Depot is situated in an area of gently rolling loess hills. Most of the Depot terrain is fairly uniform, with elevations ranging from 282 to 300 feet above mean sea level. Five distinct surface soil units have been mapped at the Depot: the Falaya Silt Loam, the Filled Land-Silty, the Graded Land, the Memphis Silt Loam, and the Memphis Silt Loam 2. Surface soils at the developed portion of the Main Installation primarily consist of filled land (CH2M Hill 2000a).



**SECTION ONE****INTRODUCTION AND SUMMARY**

Geologically, the area around the Depot is located in the north-central part of the Mississippi embayment that is a broad, trough-like geologic structure that plunges to the south. The geologic units that have been identified at the Depot are: loess, which can contain "perched" water-bearing zones for short periods of time after a rainfall event; fluvial (terrace) deposits that contain the site's shallow aquifer; the Jackson Formation/Upper Claiborne Group that is a confining unit between aquifers, and the Memphis Sand that represents the region's most important source of water.

Subsurface soils at the Depot consist of moderately to well drained silty deposits. The soil in graded areas varies from clay to sandy silt. The permeability range for the soil is  $4.4 \times 10^{-4}$  to  $1.4 \times 10^{-3}$  centimeters per second (CH2M Hill 2000a). The upper strata at Dunn Field consist of a loess layer underlain by fluvial deposits of sand and gravel that includes a perched water element.

The Depot is situated approximately 40 miles southeast of Marked Tree, Arkansas where the abrupt termination of one of the two major deeply buried faults of the New Madrid region seismic zone is located. This places the Depot in one of the highest earthquake risk zones east of the Rocky Mountains. Three of the greatest earthquakes in American history occurred in the New Madrid seismic zone in 1811 and 1812. The recurrence of quakes of similar magnitude is estimated to be 600 to 800 years. Although thousands of microearthquakes are recorded, very few earthquakes have been felt in the Memphis/Shelby County area.

### **1.6.6 Hydrogeology**

A layer of unsaturated loess, a firm silty clay or clayey silt that is approximately 20 to 30 feet thick, underlies the Depot. Where intact and undisturbed, the loess unit tends to limit precipitation infiltration (recharge) to significant underlying aquifers. Sandy zones within the loess may become seasonal perched water-bearing zones that contain water for short periods of time after rainfall events.

Terrace deposits underlie the loess. The lower, saturated portion of the terrace deposits is referred to as the fluvial aquifer and is the uppermost unconfined aquifer beneath the Depot. The saturated thickness of the fluvial aquifer varies from 5.7 feet to 18 feet at the Depot, and the water level top varies from 37 to 145 feet below ground surface (bgs) (CH2M Hill 2000a). The fluvial aquifer is not used as a drinking water source for Memphis.

The Memphis Sand aquifer underlies the fluvial aquifer and is the primary source of drinking water for Memphis.

**SECTION ONE****INTRODUCTION AND SUMMARY**

The fluvial and Memphis Sand aquifers are separated by the Jackson Formation/Upper Claiborne Group, which generally consists of high-plasticity clay of variable thickness. The depth to the top of the confining clay unit at the Depot ranges from approximately 70 feet bgs on the east and west sides of OU-4 to approximately 160 feet bgs in the north-central portion of OU-4, where a structural depression in the top of the clay unit exists. The thickness of this confining stratum ranges from approximately 85 feet to less than 15 feet. The Memphis Sand aquifer underlies the Depot at a depth of approximately 180 feet bgs and averages 500 feet in thickness. Some recharge is derived from overlying or hydraulically communicating units; however, most of its recharge is derived from the unit's outcrop area, located generally east of Memphis. The outcrop area consists of a broad band ranging in width from approximately 50 miles at the Tennessee-Mississippi border to less than 15 miles at the Tennessee-Kentucky border (in Henry County, Tennessee). The southernmost part of the outcrop area in Tennessee begins in southeasternmost Shelby County, Tennessee, although the unit's outcrop continues south into Mississippi and north into Kentucky.

The Fort Pillow Sand aquifer underlies the Depot at an approximate depth of 1,400 feet bgs. It averages approximately 200 feet in thickness. The unit contains groundwater under artesian (confined) conditions and derives most of its recharge from unit outcrop areas and hydrogeologic units in hydraulic communication (CH2M Hill 2000a).

Figure 1-5 presents the November 2001 potentiometric surface map of the fluvial aquifer at the Depot (CH2M Hill 2002b). Figure 1-6a presents areas on the MI where VOCs in groundwater exceed MCLs. Within the designated area of the MI, especially in the northeast quadrant, there may exist locations where groundwater does not exceed MCLs. The contour in this figure is conservative based on a low density of monitoring wells. Figure 1-6b presents areas on Dunn Field where VOCs in groundwater exceed MCLs. Along the northern fence line of Dunn Field, VOCs in groundwater are moving onto Dunn Field from an off-site up gradient source.

Two general groundwater flow regimes occur in the fluvial aquifer at the Depot. At Dunn Field, a west-southwest direction of flow is indicated by the contours. However, over the majority of the Main Installation, the direction of groundwater flow is toward a depression in the top of the clay-confining unit on the northern portion of OU-4 just south of the southwest corner of Dunn Field near Gate 15. This area of apparent convergent flows is an area with hydraulic interconnection between the fluvial aquifer and the underlying Memphis Sand aquifer. An investigation of the presence or absence of a hydraulic connection between the aquifers was conducted as part of the RI/FS (CH2M

**SECTION ONE****INTRODUCTION AND SUMMARY**

Hill 2000a, 2000b) Additional investigation will be conducted as part of the remedial design for the Main Installation groundwater remedial action.

**1.7 HAZARDOUS SUBSTANCES AND WASTE MANAGEMENT PRACTICES**

Past activities conducted at the Depot include a wide range of storage, distribution, and maintenance practices. Historically Dunn Field was used as a landfill, as a pistol range, for storage of mineral stockpiles, and for periodic testing of flamethrowers, smoke generators and smoke pots using diesel fuel and fog oil. The pistol range house also was used for pesticide and herbicide storage. The mineral stockpiles have remained over the years and have been managed by the Defense National Stockpile. These stockpiles were sold to private industry and removed. The primary activities conducted at the Main Installation included material storage and shipping. Other activities conducted at the Main Installation included hazardous substance repackaging for storage or shipment; sandblasting and painting; vehicle maintenance, polychlorinated biphenyl (PCB) transformer storage, pesticide and herbicide storage and use; and treatment of wood products with pentachlorophenol. During the 1940s and 1950s prior to its construction, part of the golf course was used as a pistol range.

**1.7.1 Hazardous Substance Activities**

As a result of the Depot's complex site-utilization history, large quantities of industrial chemicals or hazardous substances were received, stored, repackaged and shipped. Some of these items were spilled or leaked at the Main Installation or landfilled at Dunn Field.

The following types of hazardous substances were received, stored and shipped at the Depot:

- Flammable liquids
- Flammable solids
- Corrosives (acids and bases)
- Poisons (including insecticides)
- Compressed gases (nonflammable and flammable)
- Class C explosives

**SECTION ONE****INTRODUCTION AND SUMMARY**

- Oxidizers
- Low-level radioactive materials (watch dials, compasses, smoke detectors, etc.)
- Other regulated substances

These substances were received as packaged commodities from manufacturers in containers that varied in size up to 55-gallon drums. While in storage, these substances were segregated by hazardous storage compatibility groups to assure optimum safety conditions were met (Harland Bartholomew & Associates, Inc. 1988).

Until 1985, mission chemical stock items in packages smaller than 55-gallon drums were stored in Building 629, which was constructed on a concrete foundation with seven bays separated by concrete walls and fire doors. Mission chemical stock items in 55-gallon drums were stored at open storage areas X02, X03, X11, X12, X13, X15, X17, X19, X21, X23, X25 and X27. Some mission chemical stock items also were stored in Building 319. In 1994, Building 319, Bays 1 and 2 became the hazardous waste storage area for the Defense Reutilization and Marketing Office (DRMO). Building 319 had a concrete berm and was situated on a concrete foundation with no floor drains. In the past, cyanide compounds were stored in a mechanically ventilated, separately bermed room, located in Bay 6 at the west end of the building. The building was equipped with explosion-proof lighting and spill booths of similar construction to those in Building 629. Hazardous substances requiring temperature-controlled environments and medical items classified as hazardous substances were stored in Building 359. Security control at Buildings 319 and 359 was stringent.

Beginning in 1985 and continuing until closure, the majority of mission chemical stock items in packages smaller than 55-gallon drums were stored in Building 835. This building was constructed on a concrete foundation without floor drains and contained five bays separated by concrete walls and fire doors. Spill booths containing absorbent materials and cleanup equipment were located in each bay area. The bays were marked to preclude incompatible chemicals being placed in the same bay.

The X25 area, located on the northwest side of the facility, was an open storage area with an earthen berm until a concrete bermed, concrete pad was built in approximately July 1976. The X25 area was used to store Class 1 flammable liquids. These liquids were usually stored in 55-gallon drums and included a wide range of industrial grade organic solvents. A tension-fabric roof structure was constructed over the bermed, concrete pad in 1986 and stored flammable liquids in 55-gallon drums.

**SECTION ONE****INTRODUCTION AND SUMMARY**

Building 925 was built in 1994 over this area and was used for the storage of flammable liquids in 55-gallon drums.

Nonflammable petroleum, oil and lubricant (POL) mission chemical stock items were stored in 55-gallon drums at open storage areas X11, X12, X13, and X15 and X17. Flammable mission chemical products such as chlorinated solvents and fuels in 55-gallon drums were stored at open storage areas X13, X15, X17, X19, X21, X23, X25 and X27. POL products for operations use (i.e. transformers, motor oil) were stored at open storage area X07 and at vehicle maintenance Buildings 253 and 770. Building 873 was an open-sided shed used for storage of mission POL products, acids and corrosives, and for overflow mission chemical stock items. Until construction in 1985 of Building 865, the hazardous substance recoupment facility, hazardous substances in damaged containers were stored and repackaged at the south end of Building 873. Records also indicate hazardous substances were historically repackaged under a lean-to at the corner of E Street and 21st Street in open storage area X21 as well as at the southern end of open storage area X02 adjacent to Building 873.

The Depot was a RCRA generator of hazardous wastes in Tennessee under generator number TN 4210020570. The majority of hazardous wastes generated by the Depot consisted of hazardous substances that reached shelf-life expiration dates and could no longer be used by the military services and from vehicle maintenance. The Depot also generated hazardous wastes from the cleanup of small hazardous substance spills. Of the approximately 100,000 hazardous substances transfers conducted per year at the Depot, only an estimated 50 transfers per year resulted in a spill or release. More than 90 percent of these events resulted from packaging failures during transport. The remaining events were attributed to accidents during handling at the Depot (Harland Bartholomew & Associates, Inc. 1988).

The former Defense Property Disposal Office was redesignated the Defense Reutilization and Marketing Organization (DRMO). The DRMO was a tenant of the Depot and provided property disposal services for hazardous substances and hazardous wastes generated by the Depot, the Naval Air Station Millington and the Air Force Air National Guard. The Depot applied for a Part B permit from EPA to allow the storage of hazardous wastes for up to 180 days based on construction of a Conforming Storage Facility. Until construction of the facility, DRMO maintained 90-day storage in Building 308 under interim status. Construction of the Conforming Storage Facility did not occur prior to closure. Hazardous substances in the DRMO's possession were stored in Building 308 until 1994 when IDEC approved two bays of Building 319 for hazardous waste storage and DRMO moved their operations. The Depot applied for closure of the container storage portion of its Part B

**SECTION ONE****INTRODUCTION AND SUMMARY**

permit in April 1997. TDEC approved closure of the container storage portion of the permit effective October 22, 1998

**1.7.2 Waste Management Activities**

From 1940 until 1948, an area at the southwest section of Dunn Field was used to landfill outdated or damaged foodstocks and supertropical bleach. The northwest section of Dunn Field area was used as the landfill site for unusable, nonhazardous subsistence stocks from the late 1940s to mid 1960s. Additionally, small quantities of hazardous substances (e.g., acids, mixed chemicals, and chemical agent identification sets) were buried in the northwest section Dunn Field. The Depot used municipal landfills for sanitary solid waste disposal. Small quantities of nonhazardous mission stock items such as sterile water, isotonic saline and liquid soap were discharged to the sanitary sewer. The Depot normally obtained permission from the City of Memphis Public Works Department before discharging items into the sanitary sewer.

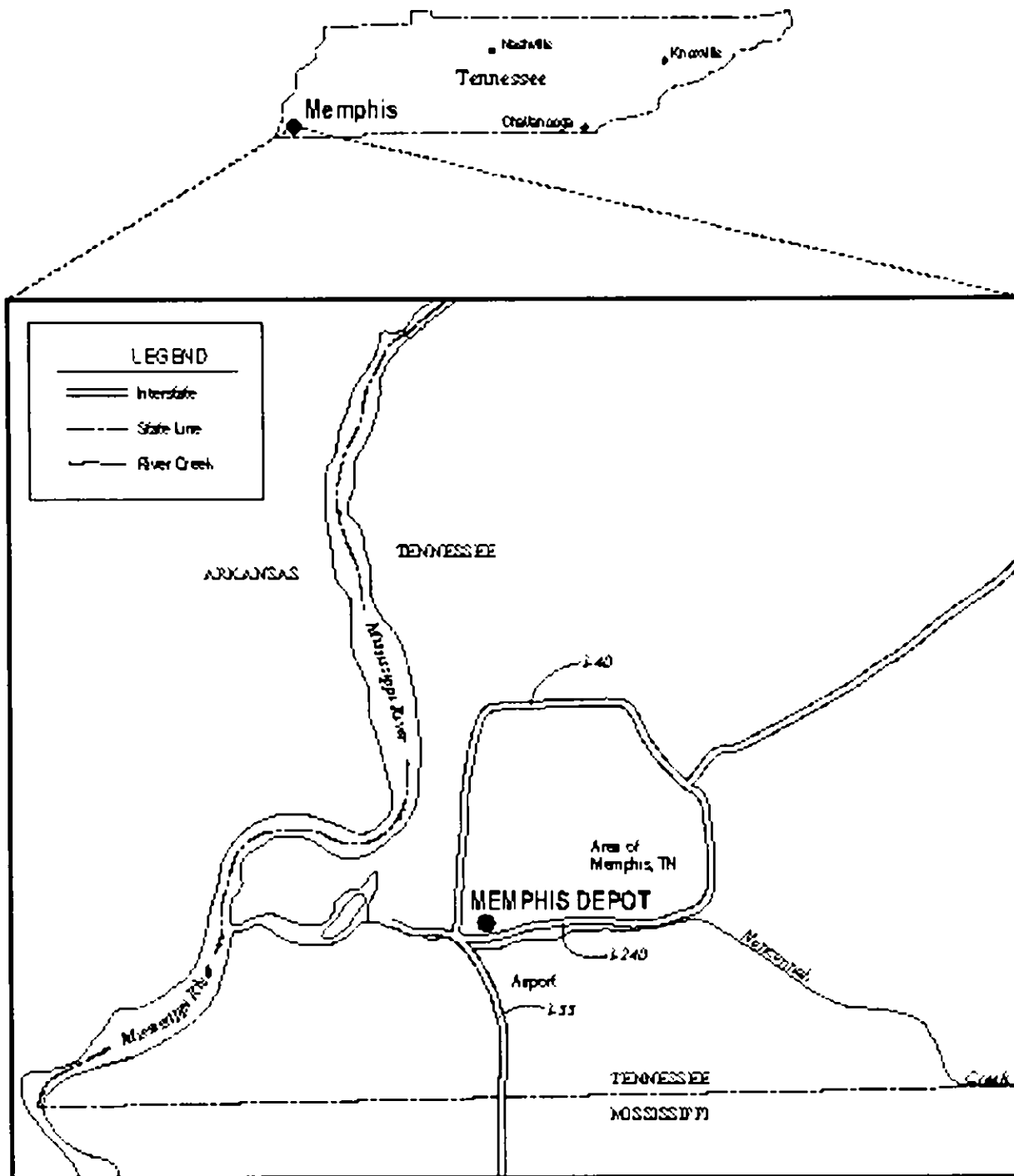
**TABLE 1-1**  
**BRAC CLEANUP TEAM/PROJECT TEAM MEMBERS**

NAME	AFFILIATION	TELEPHONE NUMBER	ROLE/ RESPONSIBILITY
<b>BRAC Cleanup Team Members</b>			
John De Back	DDSP (Memphis Depot)	(901) 544-0622	BEC/DLA Representative, DOD Base Transition Coordinator
James Morrison	TDEC	(901) 368-7953	TDEC Representative
Turpin Ballard	EPA Region IV	(404) 562-8553	EPA Representative
<b>Project Team Members (* indicates people on BRAC Cleanup Plan distribution list)</b>			
* Clyde Hunt	MDC/USACE	(901) 544-0617	Remedial Program Manager
* Claude Leake, III	CESAM	(334) 694-4216	Construction Program Manager
* Bruce Railey	CEHNC	(205) 895-1638	IRP Program Manager
Scott Bradley	CEHNC	(205) 895-1637	Environmental Scientist
David Ladd	USGS	(615) 837-4773	Project Geologist
Trevor Smith Diggins	Frontline	(888) 848-9898	Corporate Communications PM
Alma Moore	Frontline	(901) 544-0613	Community Relations Specialist
*Steve Offner	CH2M Hill	(770) 604-9182	Investigation/Design Contractor Program Manager
David Nelson	CH2M Hill	(770) 604-9182	Project Manager
Vijaya Mylavarapu	CH2M Hill	(352) 335-7991	Risk Assessor
Virgil Jansen	Jacobs Engineering Group	(314) 770-4025	Construction Contractor PM
Kraig Smith	Jacobs Engineering Group	(615) 331-9232 x229	Construction Contractor Site PM
<b>BRAC Cleanup Plan distribution list (in addition to BRAC Cleanup Team/Project Team)</b>			
Richard Isaac	AEC	(410) 436-6823	AEC Representative
Jeanne Masters	DLA	(703) 767-2672	DLA BRAC Office
Dennis Lillo	DLA	(703) 767-6241	DLA Environmental Office
Mike Dobbs	DDC	(717) 770-6950	DDC Environmental Office
Ron Marichak	DDC	(717) 770-7760	DDC BRAC Office
Jackie Noble	DDC	(717) 770-6223	DDC Public Affairs Officer
Jeff McCauslin	DDSP	(717) 770-7421	Deputy Director of Installations
Jim Covington	DRC	(901) 942-4939	President

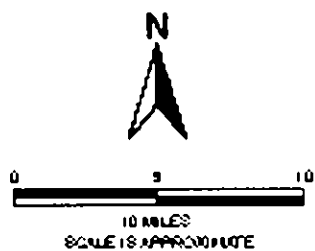
**Notes:**

AEC     Army Environmental Center  
 BEC     BRAC Environmental Coordinator  
 BRAC     Base Realignment and Closure  
 PM     Project Manager  
 DDSP     Defense Distribution Depot Susquehanna PA  
 TDEC     Tennessee Department of Environment and Conservation

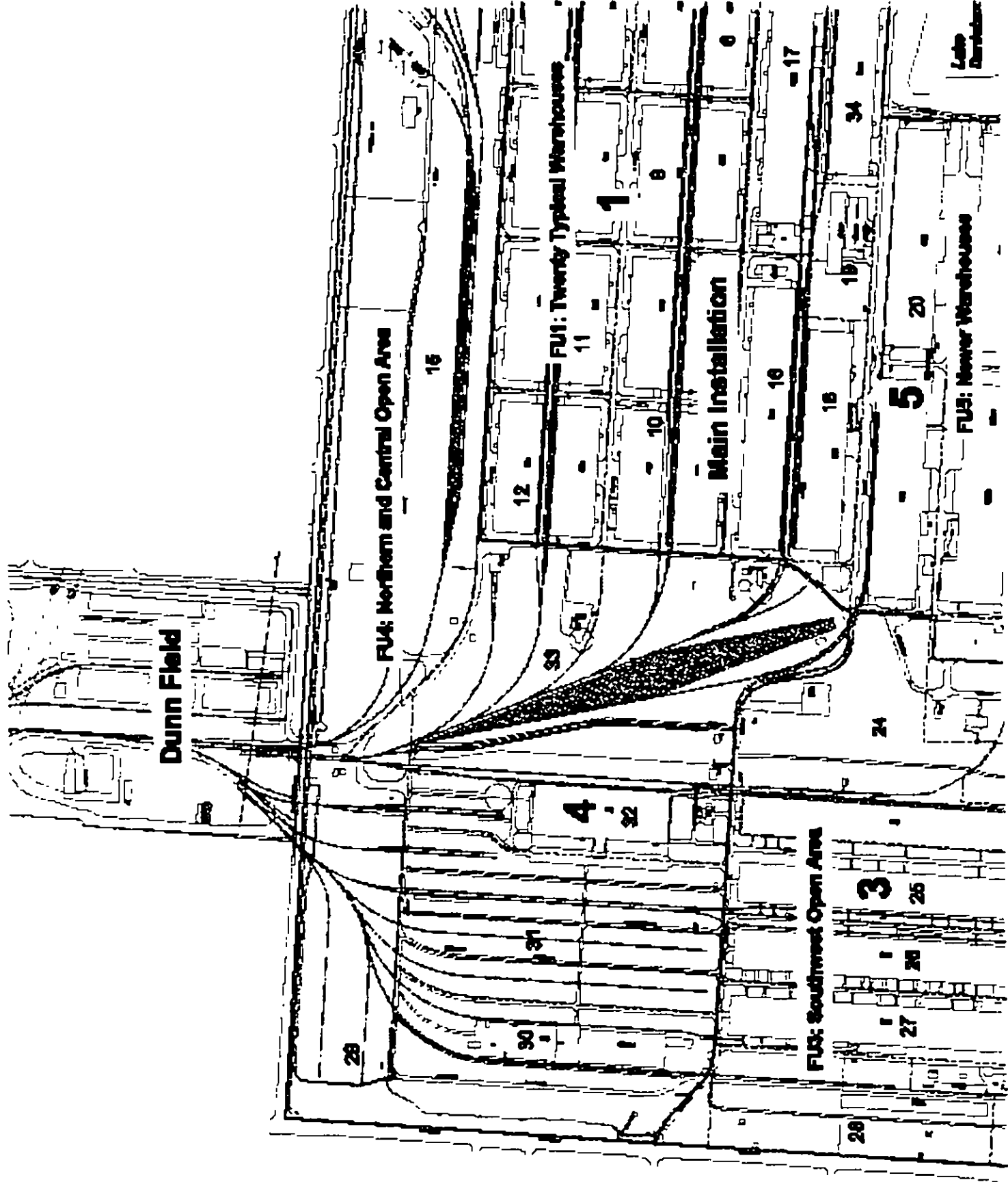
DRC     Depot Redevelopment Corporation  
 EPA     Environmental Protection Agency  
 IRP     Installation Restoration Program  
 DDC     Defense Distribution Center  
 DLA     Defense Logistics Agency



**Figure 1-1**  
**Memphis Depot location within**  
**the Memphis Metropolitan Area**  
**BRAC Cleanup Plan Version 6**











Legend

- 3 Functional Unit Number
- 28 BRAC Period Number
- BRAC Period Boundary
- Functional Unit Boundary

Note: Functional Unit 7 - Overhead at the Main Installation

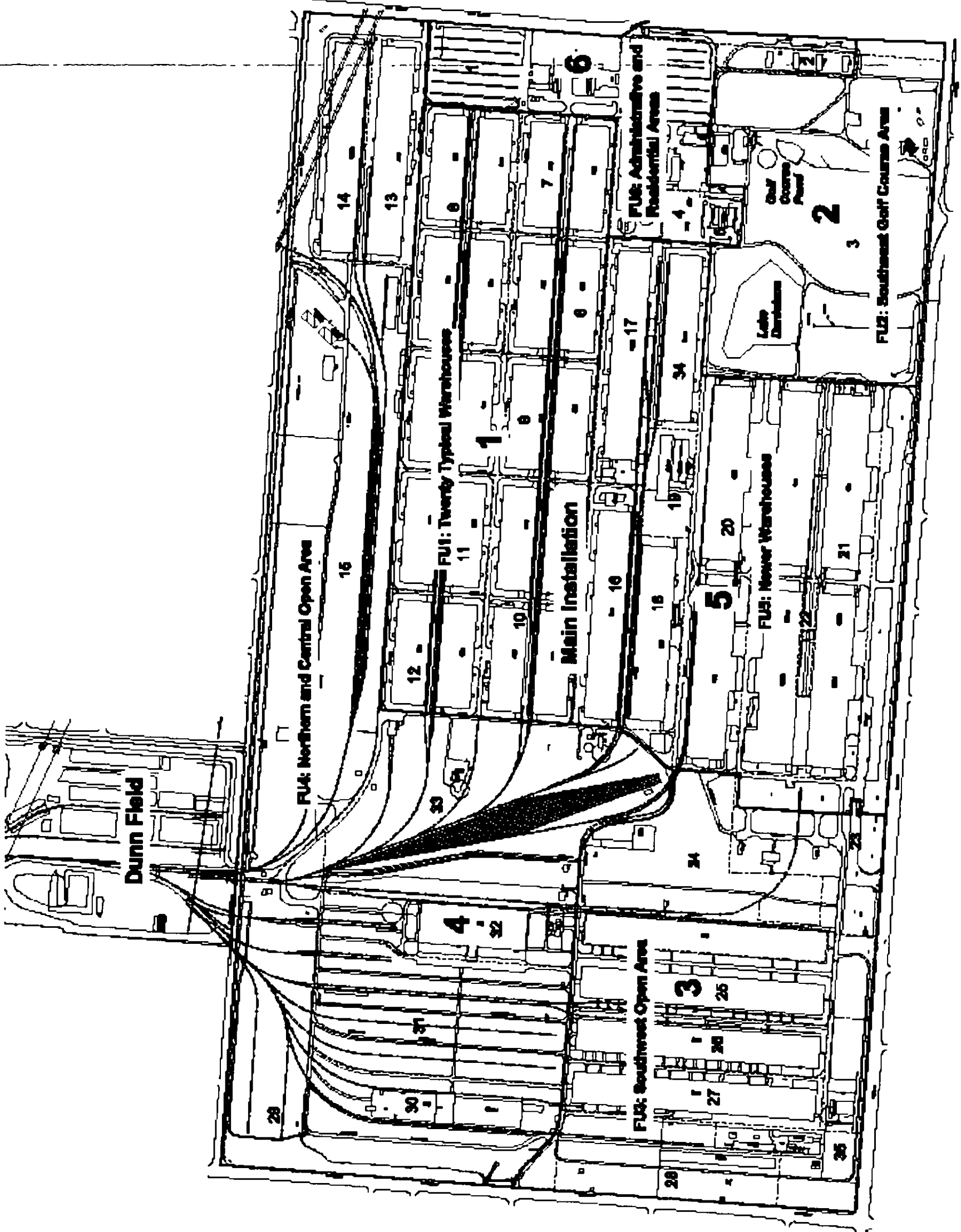
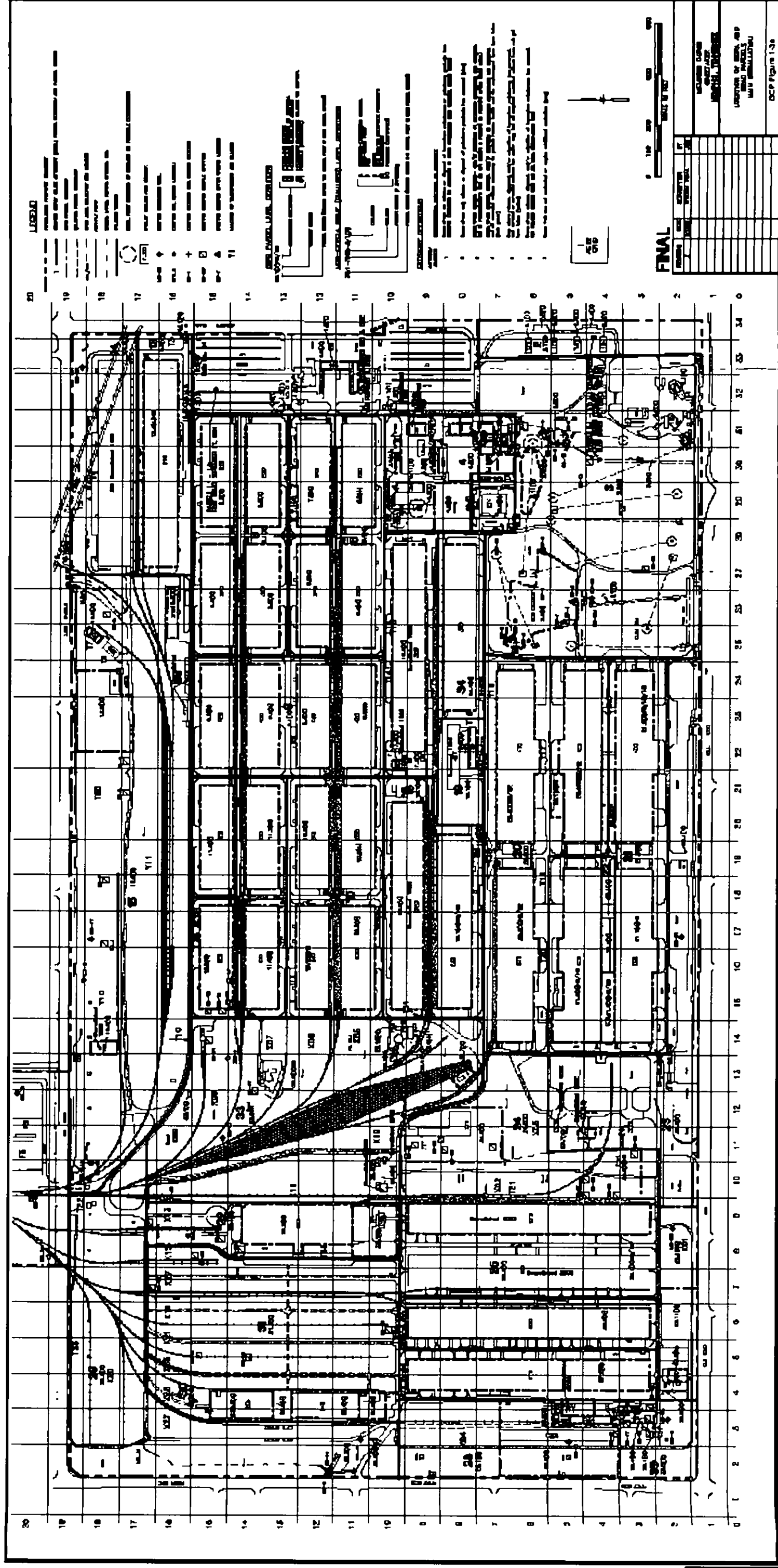
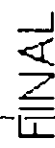


Figure 1-2a  
Functional Units at Main Installation  
BRAC Cleanup Plan Version 6





—

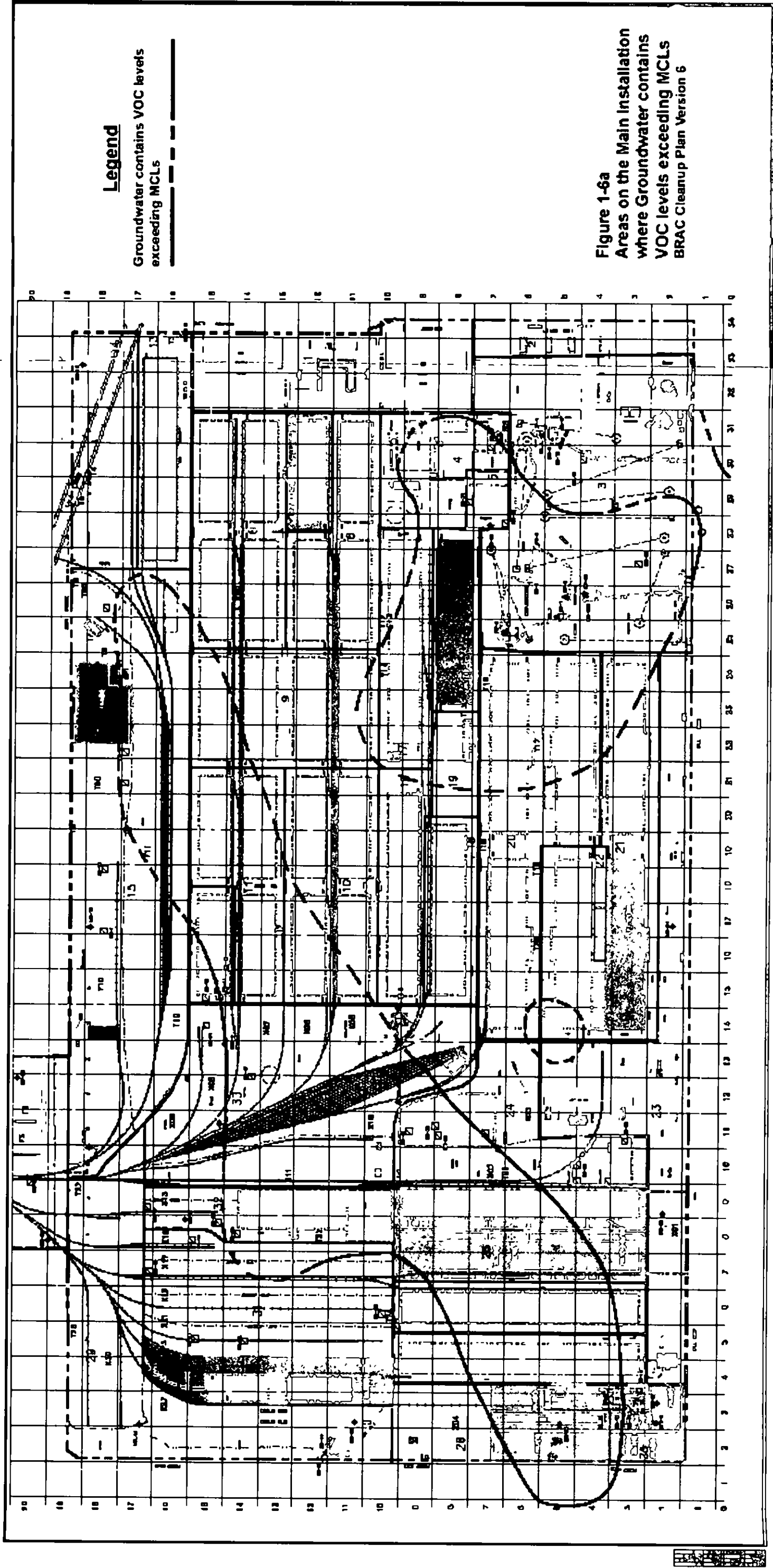
0 75 150 300 400  
SCALE IN FEET

[illegible]

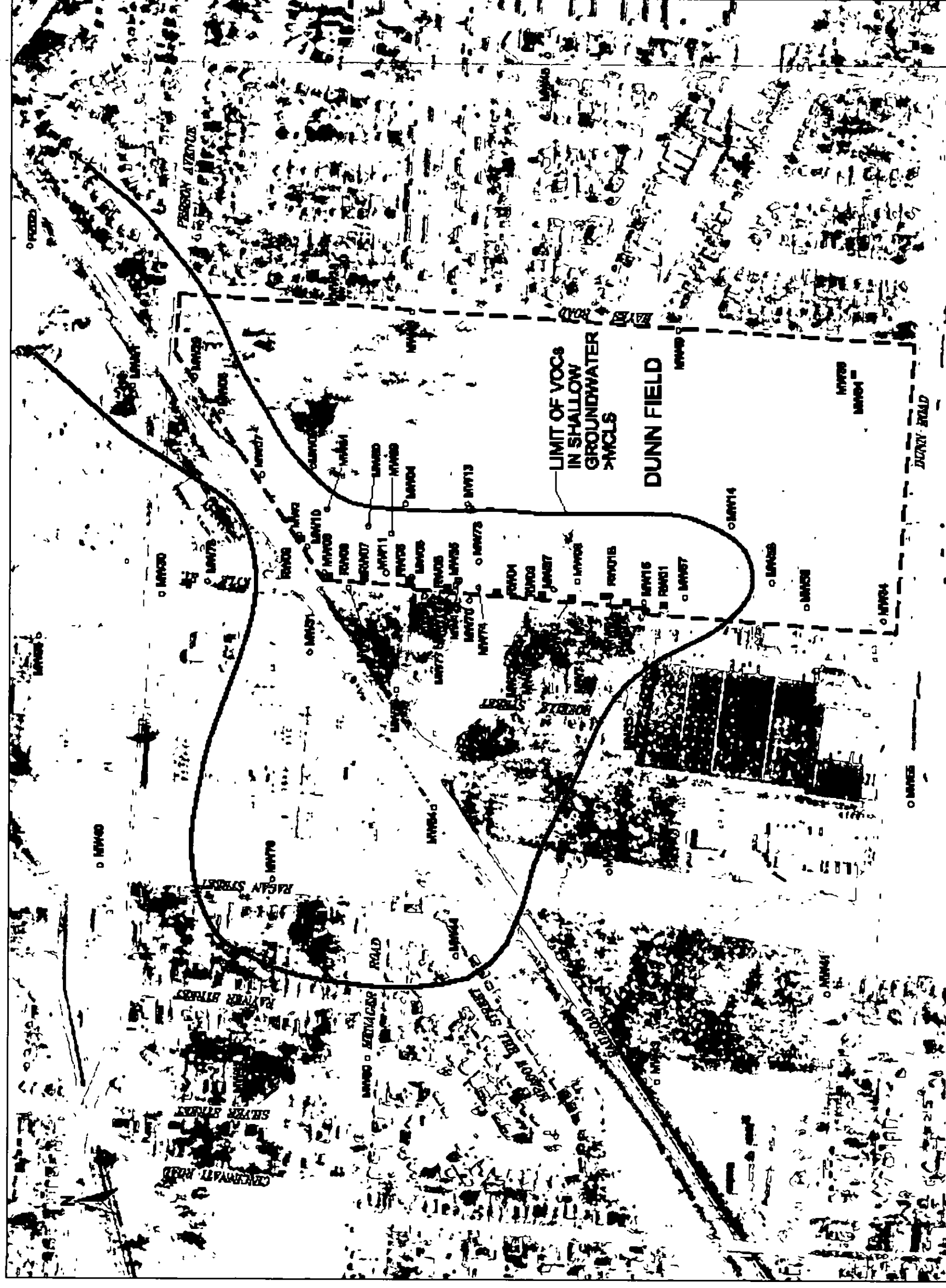
BCP Figure 1-50



Well ID	Water Level Elevation (Feet MSL)	Well ID	Water Level Elevation (Feet MSL)
MW03	221.08	MW84	198.83
MW04	224.84	MW85	202.85
MW05	224.00	MW86	191.59
MW06	226.71	MW87	221.79
MW07	228.86	MW88	222.44
MW08	228.43	MW89	223.05
MW09	223.16	MW90	222.43
MW10	222.06	MW91	223.81
MW11	224.11	MW92	223.87
MW12	224.81	MW93	223.36
MW13	227.22	MW94	217.04
MW14	224.49	MW95	221.42
MW15	241.44	MW96	223.11
MW16	175.30	MW97	212.64
MW17	200.52	MW98	154.87
MW18	198.30	MW99	151.50
MW19	198.86	MW00	167.43
MW20	208.03	MW01	204.19
MW21	198.82	MW02	208.08
MW22	198.97	MW03	223.79
MW23	203.03	MW04	224.17
MW24	203.03	MW05	183.67
MW25	203.03	MW06	183.04
MW26	203.03	MW07	223.76
MW27	203.03	MW08	207.80
MW28	203.03	MW09	191.83
MW29	203.03	MW10	189.87
MW30	203.03	MW11	228.82
MW31	203.03	MW12	205.03
MW32	203.03	MW13	195.19
MW33	203.03	MW14	192.43
MW34	203.03	MW15	192.73
MW35	203.03	MW16	195.21
MW36	203.03	MW17	203.08
MW37	203.03	MW18	203.92
MW38	203.03	MW19	203.75
MW39	203.03	MW20	193.49
MW40	203.03	MW21	189.86
MW41	203.03	MW22	203.74
MW42	203.03	MW23	241.81
MW43	203.03	MW24	191.47
MW44	203.03	MW25	203.98
MW45	203.03	MW26	195.84
MW46	203.03	MW27	228.22
MW47	203.03	MW28	208.74
MW48	203.03	MW29	204.95
MW49	203.03	MW30	223.38
MW50	203.03	MW31	220.82
MW51	203.03	MW32	219.34
MW52	203.03	MW33	221.89
MW53	203.03	MW34	DRY
MW54	203.03	MW35	DRY
MW55	203.03	MW36	DRY
MW56	203.03	MW37	DRY
MW57	203.03	MW38	DRY
MW58	203.03	MW39	DRY
MW59	203.03	MW40	DRY
MW60	203.03	MW41	DRY
MW61	203.03	MW42	DRY
MW62	203.03	MW43	DRY
MW63	203.03	MW44	DRY
MW64	203.03	MW45	DRY
MW65	203.03	MW46	DRY
MW66	203.03	MW47	DRY
MW67	203.03	MW48	DRY
MW68	203.03	MW49	DRY
MW69	203.03	MW50	DRY
MW70	203.03	MW51	DRY
MW71	203.03	MW52	DRY
MW72	203.03	MW53	DRY
MW73	203.03	MW54	DRY
MW74	203.03	MW55	DRY
MW75	203.03	MW56	DRY
MW76	203.03	MW57	DRY
MW77	203.03	MW58	DRY
MW78	203.03	MW59	DRY
MW79	203.03	MW60	DRY
MW80	203.03	MW61	DRY
MW81	203.03	MW62	DRY
MW82	203.03	MW63	DRY
MW83	203.03	MW64	DRY
MW84	203.03	MW65	DRY
MW85	203.03	MW66	DRY
MW86	203.03	MW67	DRY
MW87	203.03	MW68	DRY
MW88	203.03	MW69	DRY
MW89	203.03	MW70	DRY
MW90	203.03	MW71	DRY
MW91	203.03	MW72	DRY
MW92	203.03	MW73	DRY
MW93	203.03	MW74	DRY
MW94	203.03	MW75	DRY
MW95	203.03	MW76	DRY
MW96	203.03	MW77	DRY
MW97	203.03	MW78	DRY
MW98	203.03	MW79	DRY
MW99	203.03	MW80	DRY
MW00	203.03	MW81	DRY
MW01	203.03	MW82	DRY
MW02	203.03	MW83	DRY
MW03	203.03	MW84	DRY
MW04	203.03	MW85	DRY
MW05	203.03	MW86	DRY
MW06	203.03	MW87	DRY
MW07	203.03	MW88	DRY
MW08	203.03	MW89	DRY
MW09	203.03	MW90	DRY
MW10	203.03	MW91	DRY
MW11	203.03	MW92	DRY
MW12	203.03	MW93	DRY
MW13	203.03	MW94	DRY
MW14	203.03	MW95	DRY
MW15	203.03	MW96	DRY
MW16	203.03	MW97	DRY
MW17	203.03	MW98	DRY
MW18	203.03	MW99	DRY
MW19	203.03	MW00	DRY
MW20	203.03	MW01	DRY
MW21	203.03	MW02	DRY
MW22	203.03	MW03	DRY
MW23	203.03	MW04	DRY
MW24	203.03	MW05	DRY
MW25	203.03	MW06	DRY
MW26	203.03	MW07	DRY
MW27	203.03	MW08	DRY
MW28	203.03	MW09	DRY
MW29	203.03	MW10	DRY
MW30	203.03	MW11	DRY
MW31	203.03	MW12	DRY
MW32	203.03	MW13	DRY
MW33	203.03	MW14	DRY
MW34	203.03	MW15	DRY
MW35	203.03	MW16	DRY
MW36	203.03	MW17	DRY
MW37	203.03	MW18	DRY
MW38	203.03	MW19	DRY
MW39	203.03	MW20	DRY
MW40	203.03	MW21	DRY
MW41	203.03	MW22	DRY
MW42	203.03	MW23	DRY
MW43	203.03	MW24	DRY
MW44	203.03	MW25	DRY
MW45	203.03	MW26	DRY
MW46	203.03	MW27	DRY
MW47	203.03	MW28	DRY
MW48	203.03	MW29	DRY
MW49	203.03	MW30	DRY
MW50	203.03	MW31	DRY
MW51	203.03	MW32	DRY
MW52	203.03	MW33	DRY
MW53	203.03	MW34	DRY
MW54	203.03	MW35	DRY
MW55	203.03	MW36	DRY
MW56	203.03	MW37	DRY
MW57	203.03	MW38	DRY
MW58	203.03	MW39	DRY
MW59	203.03	MW40	DRY
MW60	203.03	MW41	DRY
MW61	203.03	MW42	DRY
MW62	203.03	MW43	DRY
MW63	203.03	MW44	DRY
MW64	203.03	MW45	DRY
MW65	203.03	MW46	DRY
MW66	203.03	MW47	DRY
MW67	203.03	MW48	DRY
MW68	203.03	MW49	DRY
MW69	203.03	MW50	DRY
MW70	203.03	MW51	DRY
MW71	203.03	MW52	DRY
MW72	203.03	MW53	DRY
MW73	203.03	MW54	DRY
MW74	203.03	MW55	DRY
MW75	203.03	MW56	DRY
MW76	203.03	MW57	DRY
MW77	203.03	MW58	DRY
MW78	203.03	MW59	DRY
MW79	203.03	MW60	DRY
MW80	203.03	MW61	DRY
MW81	203.03	MW62	DRY
MW82	203.03	MW63	DRY
MW83	203.03	MW64	DRY
MW84	203.03	MW65	DRY
MW85	203.03	MW66	DRY
MW86	203.03	MW67	DRY
MW87	203.03	MW68	DRY
MW88	203.03	MW69	DRY
MW89	203.03	MW70	DRY
MW90	203.03	MW71	DRY
MW91	203.03	MW72	DRY
MW92	203.03	MW73	DRY
MW93	203.03	MW74	DRY
MW94	203.03	MW75	DRY
MW95	203.03	MW76	DRY
MW96	203.03	MW77	DRY
MW97	203.03	MW78	DRY
MW98	203.03	MW79	DRY
MW99	203.03	MW80	DRY
MW00	203.03	MW81	DRY
MW01	203.03	MW82	DRY
MW02	203.03	MW83	DRY
MW03	203.03	MW84	DRY
MW04	203.03	MW85	DRY
MW05	203.03	MW86	DRY
MW06	203.03	MW87	DRY
MW07	203.03	MW88	DRY
MW08	203.03	MW89	DRY
MW09	203.03	MW90	DRY
MW10	203.03	MW91	DRY
MW11	203.03	MW92	DRY
MW12	203.03	MW93	DRY
MW13	203.03	MW94	DRY
MW14	203.03	MW95	DRY
MW15	203.03	MW96	DRY
MW16	203.03	MW97	DRY
MW17	203.03	MW98	DRY
MW18	203.03	MW99	DRY
MW19	203.03	MW00	DRY
MW20	203.03	MW01	DRY
MW21	203.03	MW02	DRY
MW22	203.03	MW03	DRY
MW23	203.03	MW04	DRY
MW24	203.03	MW05	DRY
MW25	203.03	MW06	DRY
MW26	203.03	MW07	DRY
MW27	203.03	MW08	DRY
MW28	203.03	MW09	DRY
MW29	203.03	MW10	DRY
MW30	203.03	MW11	DRY
MW31	203.03	MW12	DRY
MW32	203.03	MW13	DRY
MW33	203.03	MW14	DRY
MW34	203.03	MW15	DRY
MW35	203.03	MW16	DRY
MW36	203.03	MW17	DRY
MW37	203.03	MW18	DRY
MW38	203.03	MW19	DRY
MW39	203.03	MW20	DRY
MW40	203.03	MW21	DRY
MW41	203.03	MW22	DRY
MW42	203.03	MW23	DRY
MW43	203.03	MW24	DRY
MW44	203.03	MW25	DRY
MW45	203.03	MW26	DRY
MW46	203.03	MW27	DRY
MW47	203.03	MW28	DRY
MW48	203.03	MW29	DRY
MW49	203.03	MW30	DRY
MW50	203.03	MW31	DRY
MW51	203.03	MW32	DRY
MW52	203.03	MW33	DRY
MW53	203.03	MW34	DRY
MW54	203.03	MW35	DRY
MW55	203.03	MW36	DRY
MW56	203.03	MW37	DRY
MW57	203.03	MW38	DRY
MW58	203.03	MW39	DRY
MW59	203.03	MW40	DRY
MW60	203.03	MW41	DRY
MW61	203.03	MW42	DRY
MW62	203.03	MW43	DRY
MW63	203.03	MW44	DRY
MW64	203.03	MW45	DRY
MW65	203.03	MW46	DRY
MW66	203.03	MW47	DRY
MW67	203.03	MW48	DRY
MW68	203.03	MW49	DRY
MW69	203.03	MW50	DRY
MW70	203.03	MW51	DRY
MW71	203.03	MW52	DRY
MW72	203.03	MW53	DRY
MW73	203.03	MW54	DRY
MW74	203.03	MW55	DRY
MW75	203.03	MW56	DRY
MW76	203.03	MW57	DRY
MW77	203.03	MW58	DRY
MW78	203.03	MW59	DRY
MW79	203.03	MW60	DRY
MW80	203.03	MW61	DRY
MW81	203.03	MW62	DRY
MW82	203.03	MW63	DRY
MW83	203.03	MW64	DRY
MW84	203.03	MW65	DRY
MW85	203.03	MW66	DRY
MW86	203.03	MW67	DRY
MW87	203.03	MW68	DRY
MW88	203.03	MW69	DRY
MW89	203.03	MW70	DRY
MW90	203.03	MW71	DRY
MW91	203.03	MW72	DRY
MW92	203.03	MW73	DRY
MW93	203.03	MW74	DRY
MW94	203.03	MW75	DRY
MW95	203.03	MW76	DRY
MW96	203.03	MW77	DRY
MW97	203.03	MW78	DRY
MW98	203.03	MW79	DRY
MW99	203.03	MW80	DRY
MW00	203.03	MW81	DRY
MW01	203.03	MW82	DRY
MW02	203.03	MW83	DRY
MW03	203.03	MW84	DRY
MW04	203.03	MW85	DRY
MW05	203.03	MW86	DRY
MW06	203.03	MW87	DRY
MW07	203.03	MW88	DRY
MW08	203.03	MW89	DRY
MW09	203.03	MW90	DRY
MW10	203.03	MW91	DRY
MW11	203.03	MW92	DRY
MW12	203.03	MW93	DRY
MW13	203.03	MW94	DRY
MW14	203.03	MW95	DRY
MW15	203.03	MW96	DRY
MW16	203.03	MW97	DRY
MW17	203.03	MW98	DRY
MW18	203.03	MW99	DRY
MW19	203.03	MW00	DRY
MW20	203.03	MW01</	







**Figure 1-6b  
Areas on Dunn Field  
where Groundwater  
contains VOC levels  
exceeding MCLs  
BRAC Cleanup Plan Versi**



**SECTION TWO****PROPERTY DISPOSAL AND REUSE****2.0 PROPERTY DISPOSAL AND REUSE**

This section describes the status and strategy for real property disposal, as well as the relationship between environmental cleanup efforts and anticipated or known reuse activity and property transfer methods

**2.1 STATUS OF DISPOSAL PLANNING PROCESS**

In March 1995, the BRAC Commission recommended the following closure action at the Depot.

- Disestablish Defense Distribution Depot Memphis, Tennessee of the DLA and relocate the Depot's functions and material to other defense distribution depots.

Pursuant to Public Law 101-510 and BRAC 95, the U.S. Army identified 642 acres at the Depot that would be excess to its needs following closure. The Depot ceased mission operations on September 30, 1997.

The U.S. Army and DLA initiated the BRAC parcel transfer process for the Depot and coordinated actions with the Local Reuse Authority (LRA). This process involves three interrelated activities: (1) developing a redevelopment plan, (2) developing a disposal process; and (3) meeting requirements of the NEPA process. The design of this three-part disposal process integrates goals held by the U.S. Army, DLA, the City of Memphis and Shelby County to provide for the efficient transfer of the Depot mission within DLA, and to minimize the impact of closure on the community.

**2.1.1 Redevelopment Plan**

The reuse process began in 1995 when the Department of Defense (DOD) and Office of Economic Adjustment (OEA) approached Memphis to form a reuse committee. Memphis and Shelby County created the Memphis Depot Redevelopment Agency (MDRA) operated under the auspices of the Memphis/Shelby County Office of Planning and Development. The MDRA with its board of directors acted as the local reuse authority (LRA) representing a broad spectrum of community interests in the reuse of the Depot. The MDRA completed the redevelopment planning process in April 1997 with completion and approval of the Memphis Depot Redevelopment Plan (Figure 2-1).

**SECTION TWO****PROPERTY DISPOSAL AND REUSE**

In April 1997, the Depot Redevelopment Corporation (DRC) formed as a public corporation to implement the plan developed by the MDRA. The DRC is chartered under Tennessee law and recognized by the federal government as the local reuse authority to enter into agreements with the federal government for lease or conveyance of the Depot property.

Memphis and Shelby County authorities approved the Depot Redevelopment Plan in March 1997. The BCT reviewed this plan and uses it to make cleanup decisions. The Department of Housing and Urban Development (HUD) completed a review and approved the redevelopment plan for homeless consideration in September 1997. In addition to identifying the general land use for the future of the property, the Depot Redevelopment Plan provides an implementing strategy for the DRC.

The MDRA set the following goals for redevelopment and the DRC continues to support these goals:

- Maintain overall community public health as the first priority in environmental remediation work:
- Maximize community employment, wages and capital investment through redevelopment of the Depot and the surrounding area, commencing immediately;
- Place highest priority on attracting new or expanding businesses to the Memphis market area rather than on relocating existing businesses already in the Memphis market area;
- Encourage new businesses at the Memphis Depot Business Park to hire depot employees and local community residents,
- Improve the local quality of life by using Depot facilities to meet community needs and by ensuring that redevelopment is compatible with the surrounding areas; and
- Generate early cash flow through interim leases and other means of support maintenance, improvements, and marketing efforts

Prior to property transfer, the U.S. Army provided an interim lease for the Main Installation (MI) to the DRC in September 1997. Properties became available for sublease by the DRC through a

**SECTION TWO****PROPERTY DISPOSAL AND REUSE**

series of Findings of Suitability to Lease documents (FOSL) prepared by DLA and approved by the Army. The final FOSL (#8) included all property on the MI that had not been included on a previous FOSL and was approved in August 1999. Since October 1997, the DRC has completed 25 subleases under the master lease accounting for the reuse of more than 2 million square feet of covered facilities and the production of approximately 1,000 jobs.

On February 23, 2001, AMC signed a Finding of Suitability to Transfer (FOST) document sponsored by the Housing and Urban Development (HUD) to transfer Parcel 2 to a veteran service organization. This parcel, consisting of 6.51 acres of land and seven buildings, will provide housing for veterans. The deed for this parcel was signed on September 18, 2001. On September 27, 2001, AMC signed a FOST for Parcel 1 consisting of 18.03 acres of land and six buildings, including the main administration building. The deed to the City of Memphis Police Department for 4.67 acres of Parcel 1 was signed on February 6, 2002. The deed to the DRC for 13.36 acres of Parcel 1 was signed on May 6, 2002.

The timing and conveyance of parcels to the private sector by the DRC may vary from parcel to parcel, depending on the requirements for access, condition of improvements within the right-of-way and demand for specific parcels.

**2.1.2 Disposal Process**

The disposal process continues for the Depot. The disposal process considers BRAC requirements and environmental cleanup schedules, U.S. Army transfer goals and the redevelopment planning goals of the local community. The process incorporated relevant U.S. Army BRAC transfer hierarchy requirements established by Public Law 100-526 and the Federal Property and Administration Services Act, the Surplus Property Act, the Federal Property Management Regulations and the 1994 Defense Authorization Act as amended.

The process includes the following actions:

- Offer facility to DOD agencies for use.
- Offer facility to other federal agencies.
- Offer facility under the 1994 Redevelopment Act (excluding property taken by DOD agencies) to sponsoring organizations and qualified homeless assistance providers.

**SECTION TWO****PROPERTY DISPOSAL AND REUSE**

- Offer facility to state and local government agencies through public benefit discount conveyance.
- Offer facility to a redevelopment agency at or below fair market value through an economic development conveyance
- Offer the property for negotiated or competitive bid sale to the private sector.

The Base Closure Community Redevelopment and Homeless Assistance Act of 1994, signed into law October 25, 1994, and Title XXIX of the 1994 Defense Authorization Act amended this process as it pertains to homeless, state, and local screening. These pieces of legislation exempt BRAC properties from screening under McKinney Act provisions. They do, however, require that the needs of the homeless be considered during the reuse planning process and that these needs be balanced with the need for further economic redevelopment. Approval of the Depot Redevelopment Plan by HUD in September 1997 concluded this requirement for homeless consideration.

### **2.1.3 National Environmental Policy Act Documentation**

To comply with NEPA, a disposal and reuse environmental assessment (EA) for the Depot was prepared by CESAM. The EA process began in April 1996 with a scoping meeting conducted on July 23, 1996. A scoping report was completed in October 1996. The final EA for master interim lease that included a description of the proposed disposal action and alternatives was completed in October 1996. The final EA for disposal and reuse was completed in February 1998, and the AMC signed a Finding of No Significant Impact (FONSI) on March 13, 1998. A 30-day public comment period began in March 1998. The public comment period was extended in response to a request by public comment. This extension period concluded in October 1998.

The EAs evaluated several disposal and reuse alternatives following DA policy on the preparation of U.S. Army disposal and reuse documents. The three disposal alternatives being considered in the disposal and reuse EA are as follows:

- **Unencumbered Disposal Alternative.** Disposal of the property as unencumbered means that the U.S. Army would not impose conditions on it. For example, the property transfers free of U.S. Army easements or continuing environmental mitigation measures.

**SECTION TWO****PROPERTY DISPOSAL AND REUSE**

- **Encumbered Disposal Alternative:** The U.S. Army would dispose of the property with encumbrances. The encumbrances may result in development constraints for the new property owners. Possible encumbrances include existing or proposed utility or infrastructure easements or property reuse limitations because of the presence of environmental contamination undergoing long-term remediation. An existing deed restriction could cause additional encumbrances.
- **Caretaker Alternative (No Action Alternative):** The U.S. Army would not dispose of the property under this alternative, but would maintain it indefinitely in caretaker status. After transfer of the caretaker cadre mission, the U.S. Army would maintain and preserve the vacated area. The property would be available for the U.S. Army use if needed.

The DRC submitted the final Memphis Depot Redevelopment Plan to CESAM for consideration of the impacts of proposed reuse actions. The EA addressed a range of high, medium and low reuse intensities identified in the Memphis Depot Redevelopment Plan. An appendix to the EA includes the Memphis Depot Redevelopment Plan. Proposed reuses are cross-referenced to the reuse scenarios addressed in the final EA for disposal and reuse. The following three reuse scenarios were considered in the disposal and reuse EA:

- **High-Intensity Reuse Scenario:** This scenario assumes use at maximum feasible intensity for the Depot property. Under this scenario, more of the total acreage would be used for manufacturing and residential development and less would be used for parks, open space and warehousing.
- **Medium-Intensity Reuse Scenario:** This scenario assumes that each area of the Depot property would be used at a moderate level of intensity. This scenario most reflects the goals of the DRC.
- **Low-Intensity Reuse Scenario:** This scenario assumes that each area would be used at the lowest intensity within a feasible range. Existing open space areas would largely be preserved as open spaces made into parks or devoted to other low-intensity uses. The reuse of warehouses would be maximized because warehousing generally involves fewer vehicle trips and fewer employees than do residential or manufacturing uses.

**SECTION TWO****PROPERTY DISPOSAL AND REUSE****2.1.4 Disposal/Reuse Progress**

Consistent with proposed community reuse goals, the disposal process at the Depot is under way. The following actions have occurred:

- Closure actions at the Depot began immediately after the BRAC 95 decision and culminated with the cessation of mission operations on September 30, 1997.
- A government caretaker force retained several facilities pending final transfer of the properties.
- The DA prepared and published a report of excess.
- Federal screening to identify facility uses by other non-DOD entities was completed in March 1996.
- Homeless assistance screening was completed and HUD approved the redevelopment plan in September 1997. This included four military housing units to be used by a local homeless provider and one warehouse (Building 972) to be used by a homeless assistance provider.
- On February 23, 2001, AMC signed a Finding of Suitability to Transfer (FOST) document sponsored by the Housing and Urban Development (HUD) to transfer Parcel 2 to a veteran service organization. This parcel, consisting of 6.51 acres of land and seven buildings, will provide housing for veterans. The deed for this parcel was signed on September 18, 2001.
- On September 27, 2001, AMC signed a FOST for Parcel 1. This parcel consisted of 18.03 acres of land and six buildings, including the main administration building. The deed to the City of Memphis Police Department for 4.67 acres of Parcel 1 was signed on February 6, 2002. The deed to the DRC for 13.36 acres of Parcel 1 was signed on May 6, 2002.

**2.2 RELATIONSHIP TO ENVIRONMENTAL PROGRAMS**

Disposal and reuse activities at the Depot are linked to environmental investigation, restoration and compliance activities for two reasons:

**SECTION TWO****PROPERTY DISPOSAL AND REUSE**

- Federal property transfers to non-federal parties are governed by CERCLA Section 120(h)(3)(B)(i), Contents of Certain Deeds, and
- Residual contamination may remain on certain properties after remedial actions have been completed or put into place, thereby restricting or placing encumbrances on the future use of those properties.

Section 120(h)(3)(B)(i) of CERCLA requires deeds for federal transfer of previously contaminated property to contain a covenant that all remedial actions necessary to protect human health and the environment have been taken. The 1992 CERFA amendment to CERCLA provided clarification to the phrase "has been taken." This clarification stated that all remedial action has been taken if the construction and installation of an approved remedial design has been completed, and the remedy has been demonstrated to the Administrator to be operating properly and successfully. It further stated that the carrying out of long-term pumping and treating or operation and maintenance after the remedy has been demonstrated to the Administrator to be operating properly and successfully does not preclude the transfer of the property. Thus, any required remedial and/or removal response actions must be selected and implemented for such contaminated properties before transfers to private parties can occur. Also, CERCLA requires that deeds for property on which a hazardous substance was stored for more than one year, released, or disposed include disclosure information on the type, quantity and the time at which the storage or release occurred.

The requirement for complying with CERCLA Section 120(h), the possibility of residual contamination at the Depot, and the remediation of the site according to future use are factored into the property disposal and reuse process at the Depot. This is accomplished in the following manner.

- Because the Depot experienced releases of CERCLA hazardous substances, it is subsequently subject to CERCLA transfer restrictions as described above.
- The environmental restoration program at the Depot uses the investigative and restoration processes of the CERCLA remedial action program. These processes include the completion of a remedial investigation (RI) and risk assessment according to future land use (industrial and recreational). The redevelopment plan prepared by MDRA and the description of proposed action and alternatives

**SECTION TWO****PROPERTY DISPOSAL AND REUSE**

in the disposal and reuse EA provide the current, best estimation of the future land use scenarios at the Depot

- The Depot has completed the RI phase and is preceding with the feasibility study (FS), remedial design (RD) and remedial action (RA) phases of the environmental restoration program. An RI for OU-1 through OU-4 was completed in 1990, but did not fully define the nature and extent of impacts from hazardous substances releases. The Depot has completed RI field investigations for the MI and Dunn Field. The Depot completed the MI Remedial Investigation Report in January 2000. The risk assessment portion of the MI RI evaluated impacts on human health and the environment for current and potential on-site and off-site receptors. The Depot completed the MI Feasibility Studies for Soil and Groundwater in July 2000 that evaluated the effectiveness of remedial actions in mitigating risk according to the proposed reuses of the property. The Depot completed the MI Remedial Design Workplan in July 2002 and has started RD fieldwork. The Depot completed the Dunn Field Remedial Investigation Report in July 2002. The Depot distributed the Rev. 0 Dunn Field Feasibility Study for BCT review in August 2002. These documents provide sufficient data for the BCT to make cleanup decisions.
- DLA solicited input from the community on proposed reuse scenarios and redevelopment plan implementation through communication with the DRC and participation in the Restoration Advisory Board (RAB) process (see Section 3.5). Risk assessments considered the most current reuse plans and activities.
- The presence of residual contamination at the Depot after closure will be considered in the development of real estate transfer documentation. Remediation of contaminated groundwater at the Depot will continue well beyond the Depot's closure date of September 30, 1997. DOD will not transfer land until the CERCLA requirements are met. DOD and regulator access to leased or conveyed property for environmental remedial actions and long term monitoring will be ensured through the establishment of easements and conditions or covenants in the real estate documents.
- The strategy and schedule for the Depot presented in this BCP are based upon the document review cycle timeframes provided in the FFA. Because of the need to



**SECTION TWO****PROPERTY DISPOSAL AND REUSE**

differentiate between areas suitable for transfer and those that are not, the Depot BCT has developed maps showing the environmental condition of property using data from the base-wide EBS (see text and figures in Section 3.4) and subsequent sampling results. The BCT will continue to update and refine the maps showing the environmental condition of property and property suitable for transfer for the Depot as data becomes available and as site restorations are completed

The requirement for complying with CERCLA Section 120(h) and the possibility of residual contamination are two factors considered during the Depot property transfer and reuse. The Depot considers a parcel available for transfer on the date when the associated FOST has been signed by AMC. In order for a FOST to receive EPA and AMC approval, restoration activities must be complete and operating properly as determined by the EPA Administrator

Currently, AMC plans to transfer property to the DRC through the economic development conveyance. Because this method of transfer is not from one federal agency to another, the transfer will be governed by CERCLA. Section 120(h)(3)(B)(i) of CERCLA requires deeds for federal transfer of previously contaminated property to contain a covenant stating that all remedial actions necessary to protect human health and the environment have been taken. This deed requirement applies only to property on which a hazardous substance was stored for one year or more or when hazardous substances were disposed or released on the property. Thus, any required remedial actions and/or removal response actions must be selected and implemented for such contaminated properties before transfer to a non-federal agency can occur.

### **2.3 PROPERTY TRANSFER METHODS**

This section contains a brief description of planned or final transfer decisions in the EA for disposal and reuse as well as the Memphis Depot Redevelopment Plan accepted by the DA in September 1997. The various transfer methods being used or considered in the transfer process at the Depot are described in the sections below. These transfer methods were identified from U.S. Army BRAC disposal protocols established by Public Law 100-526, the Federal Property and Administration Services Act, the Surplus Property Act, the Federal Property Management Regulations and the 1994 Defense Authorization Act. The status of each of the transfer methods is identified. Transfer methods that are not currently being considered but that could be used in future disposal-planning actions at the Depot are also identified.

**SECTION TWO****PROPERTY DISPOSAL AND REUSE****2.3.1 Federal Transfer of Property**

Screening of the Depot BRAC parcel for use by other federal agencies was completed in March 1996. No other federal agencies identified a need for the Depot property.

**2.3.2 No-Cost Public Benefit Conveyance**

State or local government entities may obtain property at no cost or less than fair market value when sponsored by a federal agency for uses that would benefit the public (e.g., health and education, parks and recreation, wildlife conservation, or public health).

As of October 1998, DA screened the Depot properties for eligible state and local interests. Formal requests were received from the Department of Education, Department of Justice, Department of Transportation and the Department of Interior/National Park Service.

**2.3.3 Negotiated Sale**

The U.S. Army may sell the property by negotiation to state or local agencies at fair market value. A sale could also be negotiated with private entities. There are no negotiated sales planned for Depot properties.

**2.3.4 Widening of Public Highways**

There are two road-widening projects associated with the Depot. The City of Memphis has a project on Hayes Road (adjacent to Dunn Field) between Dunn Avenue and Person Road. Following the Depot Redevelopment Plan, the DRC will widen "G" Street into a four lane divided roadway from Airways Boulevard to Sixth Street. This project includes the demolition of two large warehouses, some lesser facilities, and building of main utility corridors along the new four lane divided roadway. Completion of this project will enhance traffic safety, improve vehicle access and upgrade utility services.

**2.3.5 Donated Property**

As of October 1998, DA screened excess properties for state and local interests, and no property donations have been initiated on any Depot properties.

**SECTION TWO****PROPERTY DISPOSAL AND REUSE****2.3.6 Interim Leases**

Pre-disposal use of facilities by a non-U.S. Army entity can be accomplished through the execution of leases, licenses or permits. The Military Leasing Act of 1956 (10 United States Code §2667), as amended, permits the U.S. Army to implement interim leasing of excess facilities if it is in the public interest. Prior to any leasing or permitting, the U.S. Army must complete a Finding of Suitability to Lease (FOSL) documenting that the property is safe to use. Leased properties may be transferred by deed to future owners after disposal decisions are made. To facilitate the reuse of surplus property, and in accordance with DA policy and the Memphis Depot Redevelopment Plan goals, the U.S. Army entered into an interim master lease with the DRC in September 1997. By August 1999, AMC had signed FOSLs for all 578 acres of the ML.

**2.3.7 Competitive Public Sale**

Sale to the public would occur through either an invitation for bids or an auction. As of May 2002, no competitive public sale of facilities or property has been initiated at the Depot.

**2.3.8 Economic Development Conveyance**

The 1994 Defense Authorization Act provides for the conveyance of property to an LRA at or below fair market value using flexible payment terms. The economic development conveyance is intended to promote economic development and job creation in the local community. To qualify for this conveyance, an LRA must submit a request to DA describing its proposed economic development and job creation program. The DOD has recognized the DRC as the LRA for the Depot. The DRC submitted an EDC application to DA in March 1998. DA accepted this application in September 1998. Acceptance of a memorandum of agreement (MOA) for implementation of the terms of the EDC was completed on January 3, 2001. The DA plans to transfer approximately 530 acres of Depot property to the DRC through an EDC.

**2.3.9 Caretaker of Property until Disposal**

Utility systems not required for continued Depot operations or interim lessees will be privatized or placed in an inactive caretaker status until the property is transferred to new owners. Army Regulation 210-17, "Inactivation of Installations," requires that "Inactive facilities and areas will be maintained to the extent necessary to ensure, as applicable, weather-tightness, structural soundness, protection against fire and erosion, conservation of natural resources, and the prevention of major deterioration..." with "... the minimum required staffing to maintain an

**SECTION TWO****PROPERTY DISPOSAL AND REUSE**

installation in a state of repair that maintains safety, security and health standards. Upon closure, a caretaker cadre of 56 personnel remained at the Depot to meet the requirements of AR 210-17 and PL 500-126 pending transfer of the properties. The caretaker cadre was eliminated effective June 30, 2001.

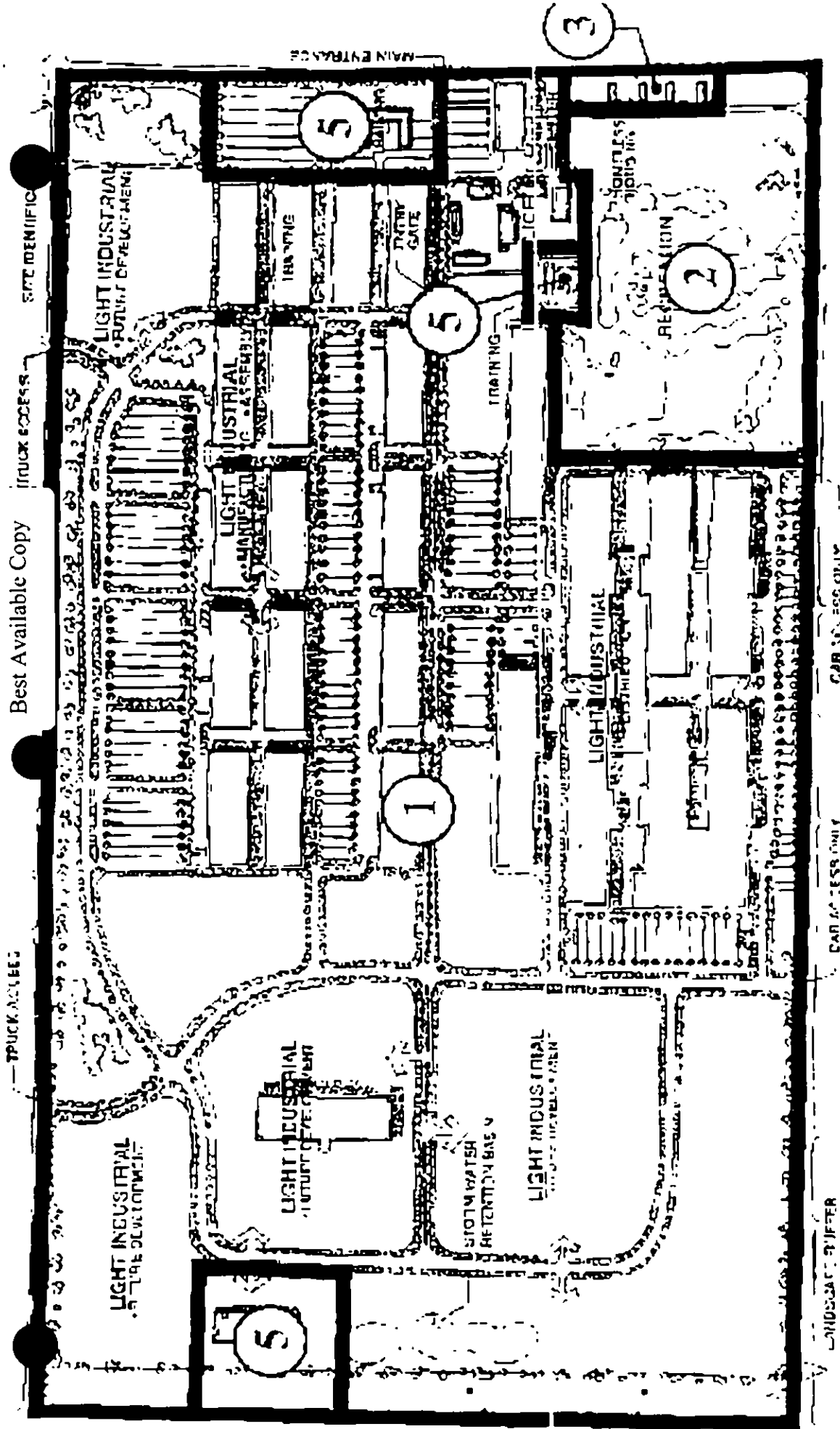


Figure 2-1  
Memphis Depot Redevelopment Plan  
BRAC Cleanup Plan Version 6  
Page 1 of 2

FEDERAL HIGHWAY ADMIN. TRUCK WEIGHT CONVEYANCE

HAYS STREET

LABRADOR PARK COMMUNITY CENTER

FUTURE PUBLIC  
OPEN SPACE

2

4

FUTURE INDUSTRIAL

1

- 1 Ecotone Development Conveyance
- 2 Facts & Rec. Public Benefit Transfer
- 3 Homeless Assistance Conveyance
- 4 Public Competitive Sale
- 5 Education Public Benefit Conveyance

Figure 2-1

Memphis Depot Redevelopment Plan  
BRAC Cleanup Plan Version 6  
Page 2 of 2

### **3.0 INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

This section summarizes the current status of environmental restoration projects and ongoing compliance activities at the Depot. It also summarizes the status of the cultural and natural resources program, community involvement to date, and the environmental condition and suitability for transfer of the Depot facility.

#### **3.1 ENVIRONMENTAL PROGRAM STATUS**

The BRAC Environmental Coordinator (BEC) is responsible for establishing and maintaining all environmental programs, compliance programs and remediation efforts at the Depot. DDC (Memphis) executes these programs. Three principal U.S. Army components assist the Depot's effort: CEHNC provides support in areas including remedial investigation/feasibility study (RI/FS), remedial design (RD), remedial action and compliance programs, CESAM provides support to BRAC activities at the installation as well as for construction of remedial actions, CEHNC, with assistance from the U.S. Army Program Manager for Chemical Demilitarization and the U.S. Army Technical Escort Unit, provides support to the Depot's chemical warfare materiel removal action. The Depot is a National Priorities List site. TDEC and EPA provide regulatory guidance and management for the environmental restoration program. This BCP, and specifically the schedules and site descriptions, fulfills the Site Management Plan requirements of the Federal Facilities Agreement signed by the Depot, EPA and TDEC.

The Depot conducts the environmental restoration programs in compliance with DLA, DA, DOD, local, state and federal statutes and regulations and in accordance with a Federal Facilities Agreement. The Depot conducts environmental compliance programs in compliance with applicable DA and DOD regulations and local, state and federal regulatory programs, including those administered under the Clean Air Act, Clean Water Act, Safe Drinking Water Act, RCRA, Toxic Substances Control Act, CERCLA and SARA.

An environmental restoration program has been in place at the Depot since 1981. An overview of some of the major milestones in the program and associated compliance programs for the Depot is provided below.

- Several environmental assessments were conducted at the Depot, beginning with an initial Installation Assessment completed in 1981.

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 51

- The Depot is listed on the National Priorities List. The Depot, EPA and TDEC signed a Federal Facilities Agreement.
- A RCRA Facility Assessment (RFA) completed in 1990 identified 49 solid waste management units and eight areas of concern.
- Multiple investigations have been completed or are ongoing at the Depot. Four CERCLA OUs have been designated installation-wide.
- Several early actions and interim actions have been completed at the Depot. They include metals-, dieldrin-, pentachlorophenol- and petroleum-contaminated soil removals, underground and above ground storage tank removals and construction of the groundwater pump and discharge system at Dunn Field.
- The Depot instituted programs to ensure compliance with other environmental programs applicable to the current status of the Depot. Since closure in 1997, the Depot requested and received closure of its air permits, UST permits, hazardous waste container storage permit, and stormwater discharge permit.
- In 1995, the Generic Remedial Investigation/Feasibility Study Work Plan was prepared to indicate how the remedial investigation (RI) and feasibility study (FS) would be accomplished. RI/FS field sampling plans were approved by EPA and TDEC for each OU (CH2M Hill 1995c, 1995d, 1995e, 1995f) and screening sites (CH2M Hill 1995h).
- In 1996, EPA approved a Record of Decision (ROD) for an Interim Remedial Action (IRA) for Groundwater at Dunn Field (CH2M Hill 1995g).
- In 1997, sampling of RI, screening and BRAC sites occurred on the Main Installation (MI). The BCT began reviewing this sampling data and changing the environmental condition of property categories for subparcels.
- In 1998, the Depot completed construction of the first phase of the IRA pump and discharge system and the system became operational. Addendums to the 1995 field sampling plans were completed for OUs 2, 3 and 4 as well as for groundwater at the MI. Soil and groundwater sampling for chemical warfare materiel (CWM) at Dunn



Field was completed. The Depot also completed a removal action of dieldrin soil at subparcel 2.7 (former military family housing area).

- In 1999, action memorandums were prepared and signed for removal actions at the old paint shop and maintenance area as well as for CWM disposal locations at Dunn Field. Additional monitoring wells were installed west of Dunn Field to provide more information on the hydrogeology of the area. Additional recovery wells for the IRA pump and discharge system were approved by the BCT and installed by the end of 1999. The Depot also completed RI fieldwork at the MI and started fieldwork for Dunn Field.
- In 2000, the Depot completed the removal action at the old paint shop and maintenance area and began the removal action for CWM disposal locations at Dunn Field. The Depot also completed and provided to the public the MI RI Report, FSs for Soil and Groundwater, and MI Proposed Plan. The BCT approved a sampling plan addendum for groundwater at Dunn Field that called for additional monitoring wells and soil borings to provide more information on the hydrogeology of the area and the extent of the contaminant plume.
- In 2001, the Depot completed the CWM removal action and RI field work at Dunn Field. The Depot also completed the additional groundwater sampling at Dunn Field. The BCT began its review of the Dunn Field RI Report to be finalized in 2002. The Depot prepared and received DLA, EPA and TDEC signature on the MI ROD. The Depot completed a removal action at the south end of Building 949, subsequent to completion of the MI ROD. The Depot began preparing the MI remedial design for groundwater.
- In 2002, the BCT completed its review of the Dunn Field RI Report. The Depot began the enhanced bioremediation treatability study at the MI for use in the MI RD for groundwater. And the BCT began reviewing the Dunn Field FS.

### **3.1.1 Restoration Sites**

Past operations at the Depot have included the storage of various hazardous substances as well as the generation of various types of wastes from maintenance operations and their disposal and/or release across the installation. Efforts related to these sites under the environmental restoration program are described in this section.

The Depot was placed on the National Priorities List and must fulfill requirements under CERCLA, as amended by SARA, and the NCP. The remedial process under CERCLA and the NCP requires the preparation of an RI/FS to determine the nature and extent of contamination, to evaluate public health risks, and to screen potential remedial actions. The Depot manages the RI/FS process with oversight from the BCT. The Depot and CEHNC implement decisions regarding the RI/FS process. To assist further investigations, representatives of the Depot, CEHNC, EPA, and TDEC divided the facility into four potential OUs, as shown on Figure 1-2 and listed below.

- OU-1: Dunn Field
- OU-2: Southwest Quadrant, Main Installation
- OU-3: Southeastern Watershed and Golf Course, Main Installation
- OU-4: North-Central Area, Main Installation

The following general criteria were used to define the OUs

- Geographic proximity of sites
- Similar contaminants of concern previously identified
- Similar investigation methods
- Scope and complexity of investigation
- Results of previous site studies
- Potential for off-site migration and exposure
- Relative threat to the Memphis drinking water supply
- Suspected mobility of contaminants

In addition to the four OUs, the MI was grouped into areas of similar past use called Functional Units (Figure 1-2a). Each FU represents an area where human health exposure is generally uniform due to consistent past use. Dunn Field was divided into three areas of similar past use and anticipated future reuse (Figure 1-2b). Specific sites of potential contamination at the Depot were

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

further grouped into RI sites, early removal (ER) sites, screening sites, and chemical warfare materiel (CWM) sites.

The Depot and CEHNC developed detailed field sampling plans for RI and screening sites for each OU. The BCT reviewed and approved the field sampling plans and subsequent addendums. The CERCLA process at the Depot incorporates information from the RI Sampling Letter Reports (CH2M Hill 1998b), Screening Sites Sampling Letter Reports (CH2M Hill 1998a), Revised BRAC Sampling Letter Reports (CH2M Hill 1998c), MI RI Report (CH2M Hill 2000a) and Dunn Field RI Report (CH2M Hill 2002a) into reports that result in recommendations for removal and remedial actions by the BCT members to their respective agencies.

The goal of the ER program at the Depot is to remove contamination at sites that appear to present unacceptable risk for the proposed reuse based on preliminary sampling and risk evaluation results and that the DRC identify as high priority for reuse. This concept uses an observational approach that includes a flexible design, in-process monitoring and as-needed adjustments throughout the restoration process. Certain elements of information are needed to reasonably scope, specify and identify contingencies for monitoring and controlling the work, no matter how flexible the design is. This essential design information must at least identify, to a reasonable degree, the location and size of the site, the scope of the work, the presence of obstructions, and special design and safety concerns for which the contractor must plan and bid. Several sites have been removed prior to completion of the RI process as a result of the ER program.

The MI ROD includes institutional controls to be applied across the MI (except at Parcels 1 and 2 within FU6) to restrict residential or daycare development and drinking water well installation. Since institutional controls are considered a remedial action per the NCP, all sites (except within Parcels 1 and 2 of FU6) on the MI were included in the MI ROD for remedial action.

There were four locations within Dunn Field where chemical warfare materiel (CWM) was suspected to have been disposed. After the field investigation and document review, CEHNC determined that two of the sites did not contain CWM. The Depot and CEHNC completed the CWM removal action for the following sites in May 2001:

- Mustard bomb decommissioning site (Sites 24A and 24B)
- Chemical Agent Identification Sets (CAISs) burial site (Site 1)

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 55

Upon a review of historical aerial photographs provided by the U S. Army Topographic Engineering Center, four areas on the MI were identified as potential sources of contamination and included in the MI RI Report (CH2M Hill, 2000a). The four additional sites are listed below:

- Site 90 - Old Pond Area. Evident in photographs from 1945 until 1952, this area consisted of a pond approximately 200 feet long by 100 feet wide with its long axis in the northwest/southeast direction. The pond was located southeast of the current K Street and northwest of the current location of Building 689.
- Site 91 - Former Container Storage Strip. Evident in photographs from 1945 through 1946, this area consisted of containers approximately 10 feet wide by less than 20 feet long oriented east to west between the current locations for Buildings 670 and 560. The contents and purpose of these containers is unknown.
- Site 92 - Former Magazines. Evident in photographs from 1945 until 1963, this area consisted of two small buildings labeled SF2 and SF2-1 on a 1959 facilities map located east of the Lake Danielson drainage ditch on the east side of 2nd Street. The contents, purpose and demolition date of these buildings is unknown, but former employees indicated the buildings were used to store lawn maintenance equipment, fertilizer and insecticide during the last years before the buildings were demolished.
- Site 93 - Mallory Avenue Ground Scar. Evident in photographs from 1949 until 1953, this area consisted of disturbed ground in the grassy area between the Depot fence line and Perry Road directly east of Mallory Street. The nature of the soil disturbance has not been determined.

The following sections describe the potential contamination at the Depot by OU. For purposes of this report, references to site numbers correspond to the 1995 Generic RI/FS Work Plan site numbers with the exception of the TEC sites that were identified after completion of the 1995 work plan.

#### ***OU-1: Dunn Field***

Dunn Field, OU-1, is an open, unpaved area located north of and across Dunn Road from the MI. Dunn Field is the only known and documented burial area on the Depot. Most of the potential contamination sites are associated with burial sites that may require similar investigation techniques. Operable Unit 1 includes the potential contamination sites shown on Table 3-1 and Figure 3-1.

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 56

Installation records indicate that various types and quantities of wastes were buried at numerous sites in the northwest quadrant of Dunn Field. Twenty-five sites have been identified where the Depot has documented the burial of wastes, documented in other environmental studies or discovered during the 1990 RI (Law Environmental 1990b). Groundwater monitoring wells were installed in the uppermost (fluvial) aquifer and the deeper Memphis Sand aquifer at the MI and Dunn Field by the U.S. Army Environmental Hygiene Agency in 1982 and by Law Environmental during RI fieldwork conducted from 1989 through 1990. The 1990 Law RI did not fully define the nature and extent of contamination resulting in the 1995 field sampling plans and subsequent RI reports.

In 1993, an engineering design report was prepared for the Depot. The intent of the report was to meet all requirements of the engineering evaluation/cost analysis (EE/CA) under CERCLA and the NCP for a non-time critical removal. The report evaluated a variety of technologies previously presented in the 1990 Law Environmental RI/FS (Law Environmental 1990a, 1990b) that would treat contaminated groundwater in the fluvial aquifer to prevent human exposure.

Between 1993 and 1996, the Depot collected additional geological and groundwater data to support an Interim ROD for groundwater at Dunn Field. EPA concurred with the Interim ROD in May 1996.

The major components of the selected interim remedial action for groundwater at OU-1 include the following:

- Evaluation of aquifer characteristics that may include installation of a pump test well (A pump test was performed in 1992);
- Installation of additional monitoring wells to locate the western edge of the groundwater plume (Since 1996, the Depot has installed more than 50 monitoring wells on and off the Depot to define the extent of the groundwater plume and to better define the hydrogeology of the area.);
- Installation of recovery wells along the leading edge of the plume (The recovery wells were installed along the western fence line of Dunn Field to create a hydraulic barrier to prevent further migration and to remove contaminated groundwater. During 1997 and 1998, the BCT reviewed the IRA designs. Construction was completed in September 1998 and the system was fully operational in October 1998. Four additional recovery wells were installed in 1999 to enhance the systems performance and became operational in 2001);

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

- Obtaining a discharge permit for disposal of recovered groundwater to the T.E. Maxon Wastewater Treatment Plant publicly-owned treatment works or municipal sewer system (Permit obtained and pump system discharge connection to sanitary sewer completed in 1998 );
- Operation of the system of recovery wells until the risk associated with the contaminants is reduced to acceptable levels or until the final remedy is in place.
- Chemical analyses to monitor the quality of the discharge in accordance with the city discharge permit requirements (The permit includes parameters to be monitored and frequency of monitoring. The Depot provides the city with monthly chemical analysis reports per the permit. After the first year of pumping, the reporting frequency will be quarterly. In 2001, the city modified the sampling requirements of the discharge permit;
- Pretreatment of groundwater, if the water fails to meet discharge limitations established in the discharge permit

Follow-up activities include characterizing and monitoring the groundwater plume migration. As the plume continues to be characterized, subsequent action may be taken to provide long-term definitive protection, including remediation of source areas

In 1999, the Depot completed RI fieldwork at Dunn Field and drafted the report, but the BCT determined further investigation was necessary due to additional groundwater concerns from a newly installed well to the immediate west of Dunn Field. The Depot prepared an addendum to the Dunn Field sampling plan because of this new well to further characterize and monitor the groundwater plume and to provide additional information regarding the hydrogeology of the area. This fieldwork was completed in 2001, and the Dunn Field RI Report drafted. The BCT reviewed the Rev 0 Dunn Field RI Report and provided comments. The Depot finalized the Dunn Field RI Report in August 2002. The Depot distributed the Rev 0 Dunn Field FS in August 2002 for BCT review and comment.

For the RI Report, the Depot divided Dunn Field into the following three land areas based on past use and anticipated future use and groundwater onsite and offsite (Figure 1-2b):

Northeast Open Area – approximately 20 acres of wooded land at the northeast corner of Dunn Field where the Depot constructed a pistol range for use by the Depot police force. The Depot evaluated

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

this area for future industrial/commercial reuse as well as recreational reuse. Results of the Dunn Field RI report indicate that lead levels at the former pistol range site require remediation to reduce potential risks to industrial workers and future onsite residents to acceptable levels. The risk assessment evaluated potential exposures to maintenance, industrial, utility workers, offsite residents and future onsite residents (if risks are acceptable for residents, risks are acceptable for recreational reuse). None of the exposure scenarios resulted in risks above acceptable levels, except at the former pistol range. The Depot has initiated the Engineering Evaluation/Cost Analysis process to complete a removal action of lead in soil at the former pistol range.

Stockpile Area – approximately 30 acres of graded and graveled land at the south end and southeast corner of Dunn Field used to store bauxite and fluorspar. The Depot evaluated this area for future industrial/commercial reuse. Results of the Dunn Field RI report indicate concentrations of inorganic chemicals that appear to be either from mineral ore storage or naturally occurring. PAH and dieldrin concentrations are similar to those found across the facility. The risk assessment indicated no unacceptable risks to maintenance workers or industrial/commercial workers. An arsenic level in surface soil at one sample location presented unacceptable risks to future onsite residents, but the level are similar to those detected elsewhere in Shelby County.

Disposal Area – approximately 14 acres at the northwest corner of Dunn Field used as a disposal area for various types of materials, including hazardous materials. The Depot evaluated this area for future industrial/commercial reuse. The Dunn Field RI report indicated that VOCs in subsurface soil beneath the disposal sites are migrating to the fluvial aquifer groundwater. VOCs in soils correlate well with the historical information indicating that the disposal pits and trenches were relatively small and separate. The risk assessment indicated that combined risks from surface soil, sediment, surface water and VOCs in subsurface soil impacting ambient do not present unacceptable risks to maintenance or industrial workers. VOCs in subsurface soil impacting indoor air present risks that slightly exceed acceptable levels for industrial workers in the northwest corner of the Disposal Area. Risks from surface soil and indoor air to future onsite residents were unacceptable. Disposal area sites are not suited for utility workers because of possible disturbance of buried wastes. The Depot conducted a soil vapor extraction (SVE) treatability study to determine the effectiveness of this EPA presumptive remedy to reduce subsurface soil VOC levels in the Disposal Area and used the data in the Dunn Field FS.

Thirty VOCs were detected in the 444 groundwater samples analyzed over the 5-year sampling period. Of these 30 compounds, 9 chlorinated hydrocarbon compounds have been frequently

detected, including 1,1,1,2-PCA, CCl<sub>4</sub>, 1,1,2-ICA; chloroform, PCE, cis- and trans-1,2-DCL, total 1,2-DCF; and TCE. Plumes of these contaminants are found in groundwater underlying the southwest, west central and northern portions of Dunn Field. The plumes have also been detected offsite southwest, west, northwest and north of Dunn Field

Based on comparisons between surface and subsurface soil sample data and VOC plume configuration, there appears to be direct correlation between contaminant levels in soil and groundwater indicating a direct pathway exists for contaminants migrating from ground surface to the fluvial aquifer. The disposal sites may also act as source areas and any future groundwater remediation plans should include treatment of the sites to render them inert.

Groundwater in the fluvial aquifer under the site, and offsite near the property boundary in down gradient locations, contains VOCs at levels exceeding Safe Drinking Water Act maximum contaminant levels (MCLs) and is unfit for potable use (Figure 1-6b). Currently, this groundwater is not used for potable water. Additional monitoring wells will be required to monitor migration and configuration of the plume.

There are no unacceptable risks or hazards to future onsite workers or residents due to exposure of VOCs volatilizing from subsurface groundwater to indoor air. Since contamination has been detected in selected offsite wells, the risk assessment evaluated indoor air exposures to offsite residents and determined risks are within acceptable limits.

Contaminants identified in the northern portion of Dunn Field appear to be migrating onsite from an offsite, up gradient source. The Depot is preparing documentation for use by TDEC to investigate potential offsite, up gradient sources.

#### ***OU-2: Southwestern Quadrant, Main Installation***

Operable Unit 2 is geographically located in the southwestern quadrant of the MI area of the Depot and is characterized primarily as an industrial area where maintenance and repair activities took place. The OU-2 boundaries are based on the geographic proximity of potential contamination sites and the maintenance activities that occurred. OU-2 includes potential contamination sites shown on Table 3-1 and site shown on Figure 3-2 and, for baseline risk assessment purposes, Functional Units 3 and 7 (groundwater under the MI) as shown on Figure 1-2a.

Sampling and analysis was conducted as prescribed by the 1995 OU-specific RI field sampling plans, the 1995 Screening Sites sampling plan and the Sampling and Analysis Recommendations



### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

Report (Woodward-Clyde, 1997) prepared as part of the EBS process. An addendum to the OU-2 Field Sampling Plan was provided to EPA and TDEC in August 1998. Additional soil and groundwater sampling occurred in 1998 to further define the source, nature and extent of groundwater contamination at the MI. In 1999, the Depot completed MI RI fieldwork and distributed the final MI RI Report, which included the risk assessment, in January 2000.

The contaminants of concern in groundwater identified at the MI are tetrachloroethylene (PCE) and trichloroethylene (TCE). Although PCE and TCE occur in groundwater above the Safe Drinking Water Act maximum contaminant levels (MCLs) of 5 ug/L, they do not present significant current health risks because no one is drinking the water and the water table is approximately 80 feet below land surface. Figure 1-6a indicates the areas on the MI where VOC levels in groundwater exceed MCLs. Within the designated area of the MI, especially in the northeast quadrant, there may exist locations where groundwater does not exceed MCLs. The contour in this figure is conservative based on a low density of monitoring wells. The contaminants of concern in soil at the MI are lead, arsenic and dieldrin. Lead, dieldrin and arsenic levels in surface soil in some areas present unacceptable risks for hypothetical future residents. Lead is above the industrial health protective level in one area (adjacent to south end of Building 949).

The Depot distributed final MI FSs for Soil and Groundwater in July 2000. The MI Proposed Plan public comment period ended on October 13, 2000. The selected remedy in the MI ROD calls for institutional controls across the entire MI (except at Parcels 1 and 2 within FU6) to restrict residential land use and day care operations, to restrict the use of fluvial aquifer groundwater for potable water, and to maintain a boundary fence around the golf course and recreational area (Parcel 3). The selected remedy also calls for enhanced bioremediation of the PCE and TCE in the fluvial aquifer and long term groundwater monitoring.

In 2000, the Depot completed a removal action at the old paint shop and maintenance area to bring lead levels in soil to within EPA's acceptable risk-based concentrations.

During development of the ROD, DLA elected to conduct a removal action of lead contaminated soil around the south end of Building 949 prior to finalization of the ROD. The ROD contains an explanation of significant difference regarding the removal action.

DLA, TDEC and EPA signed the MI ROD, and it became effective on September 6, 2001. The Depot completed the MI RD Workplan in July 2002 and began RD fieldwork to determine the best

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

locations to implement the remedial action for groundwater. The Depot anticipates distributing the Rev. 0 MI RD, which will include the enhanced bioremediation treatability study data, in 2003.

Because the facility was divided into subparcels to facilitate property transfer, information regarding OU-2 is organized by subparcel and may be found in Section 3.4, Environmental Condition of Property. OU-2 consists of the following parcels in their entirety: 24, 25, 26, 27, 28 and 35. OU-2 consists of portions of parcels 23 and 29.

#### ***OU-3: Southeastern Watershed and Golf Course, Main Installation***

The boundaries of Operable Unit 3 are based on its geographic location and a desire to encompass the entire southeastern watershed. OU-3 contains the only surface water bodies on the Depot, so it was practical to keep the majority of the sampling and analysis associated with surface water and sediments within the same OU. OU-3 includes the potential contamination sites shown on Table 3-1 and Figure 3-3 and, for baseline risk assessment purposes, FUs 2, 5, 6, most of 1 and 7 (groundwater under the MI) as shown on Figure 1-2a.

Sampling and analysis was conducted as prescribed by the 1995 OU-specific RI field sampling plans, the 1995 Screening Sites sampling plan and the Sampling and Analysis Recommendations report (Woodward-Clyde, 1997) prepared as part of the EBS process. An addendum to the OU-3 Field Sampling Plan was provided to EPA and TDEC in August 1998.

Additional soil and groundwater sampling occurred in 1998 to further define the source, nature and extent of groundwater contamination at the MI. Additional fish tissue sampling also occurred in 1998 using different methods of catching aquatic life to ensure any edible species were sampled. No edible species were captured. The final Baseline Risk Assessment for Golf Course Impoundments (Radian 1999) indicated pesticide levels in fish tissue did not pose an unacceptable risk. A bioremediation pilot study to determine the effectiveness of energizing naturally occurring bacteria to reduce dieldrin levels in soil at the golf course began in 1998 and was completed in 1999. The study indicated that the regular application of a specific plant-based substance as part of a landscape management program energized bacteria and reduced dieldrin levels. The final Streamlined Risk Assessment Parcel 3 Technical Memorandum (CH2M Hill 1999) indicated dieldrin levels did not pose an unacceptable risk to golfers or to children and teenagers playing on the softball field or playground.

The Depot completed two removal actions in 1999. Soil with dieldrin levels above EPA's residential risk-based concentration was removed from the former military family housing area.

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

(Subparcel 2.7). This removal action is documented in the Post Removal Report, Family Housing Area, Volumes I and II (OHM 1999), and the EPA and TDEC have concurred that the action was successfully completed. Soil impacted by PCBs was removed from around Building 274, "J" Street Cafe (Subparcel 5.2). This removal action is documented in the Post Removal Report, Cafeteria Building (OHM 1999), and the EPA and TDEC have concurred that the action was successfully completed. In 1999, the Depot completed RI fieldwork and the risk assessment for the MI and distributed the final MI RI Report in January 2000.

The contaminants of concern in groundwater identified at the MI are tetrachloroethylene (PCE) and trichloroethylene (TCE). Although PCE and TCE occur in groundwater above the Safe Drinking Water Act maximum contaminant levels of 5 ug/L, they do not present significant current health risks because no one is drinking the water and the water table is approximately 80 feet below land surface. Figure 1-6a indicates the areas on the MI where VOC levels in groundwater exceed MCLs. Within the designated area of the MI, especially in the northeast quadrant, there may exist locations where groundwater does not exceed MCLs. The contour in this figure is conservative based on a low density of monitoring wells. The contaminants of concern in soil at the MI are lead, arsenic and dieldrin. Lead, dieldrin and arsenic levels in surface soil in some areas present unacceptable risks for hypothetical future residents. Lead is above the industrial health protective level in selected areas (adjacent to south end of Building 949).

The Depot distributed the final MI FSs for Soil and Groundwater in July 2000. The MI Proposed Plan public comment period ended in October 2000. The selected remedy in the MI ROD calls for institutional controls across the entire MI (except at Parcels 1 and 2 within FU6) to restrict residential land use and day care operations, to restrict the use of fluvial aquifer groundwater for potable water, to maintain a boundary fence around the golf course and recreational area (Parcel 3). The selected remedy also calls for enhanced bioremediation of the PCE and TCE in the fluvial aquifer and long term groundwater monitoring.

During development of the ROD, DLA elected to conduct a removal action of lead contaminated soil around the south end of Building 949 prior to finalization of the ROD. The ROD contains an explanation of significant difference regarding the removal action.

DLA, TDEC and EPA signed the MI ROD, and it became effective on September 6, 2001. The Depot completed the MI RD Workplan in July 2002 and began RD fieldwork to determine the best locations to implement the remedial action for groundwater. The Depot anticipates distributing the Rev. 0 MI RD, which will include the enhanced bioremediation treatability study data, in 2003.

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

Because the facility was divided into subparcels to facilitate property transfer, information regarding OU-3 is organized by subparcel and may be found in Section 3.4. Environmental Condition of Property. OU-3 consists of the following parcels in their entirety: 1, 2, 3, 4, 5, 6, 7, 8, 9, 16, 17, 18, 19, 20, 21, 22 and 34. OU-3 consists of portions of parcels 10, 11 and 23.

#### ***OU-4: North-Central Area, Main Installation***

Operable Unit 4 is located in the northern and central sections of the MI. The boundaries of OU-4 are based on the material storage activities that occurred and the central location of the area. In addition to the potential contamination site investigations that have been conducted at OU-4, the Depot has investigated the groundwater at the MI and the potential communication at OU-4 between the fluvial aquifer and the Memphis Sand aquifer. OU-4 includes the potential contamination sites shown on Table 3-1 and Figure 3-4 and FUs 4 and 7 (groundwater at the MI) as well as a small portion of 1 as shown on Figure 1-2a.

The most prominent feature of OU-4 is the former hazardous materials warehouse (Building 629), designated as Site 57. OU-4 also contained the former pentachlorophenol dip vat area sites (near Building 737). Remediation conducted during 1985 and 1986 at this site included the removal of the pentachlorophenol dip vat, associated underground storage tank and surrounding soils. This area was then used for storage and mixing of pesticides, herbicides and insecticides (Building 737) as well as storage of transformers (PCB and non-PCB containing) used for facilities maintenance.

Sampling and analysis was conducted as prescribed by the 1995 OU-specific RI field sampling plans, the 1995 Screening Sites sampling plan and the Sampling and Analysis Recommendations report (Woodward-Clyde, 1997) prepared as part of the EBS process. An addendum to the OU-4 Field Sampling Plan was provided to EPA and TDEC in August 1998. Additional soil and groundwater sampling occurred in 1998 to further define the source, nature and extent of groundwater contamination at the MI.

In 1999, the Depot completed RI fieldwork and the risk assessment for the MI and distributed the final MI RI Report in January 2000.

The contaminants of concern in groundwater identified at the MI are tetrachloroethylene (PCE) and trichloroethylene (TCE). Although PCE and TCE occur in groundwater above the Safe Drinking Water Act maximum contaminant levels of 5 ug/L, they do not present significant current health risks because no one is drinking the water and the water table is approximately 80 feet below land surface. Figure 1-6a indicates the areas on the MI where VOC levels in groundwater exceed MCLs.

Within the designated area of the MI, especially in the northeast quadrant, there may exist locations where groundwater does not exceed MCLs. The contour in this figure is conservative based on a low density of monitoring wells. The contaminants of concern in soil at the MI are lead, arsenic and dieldrin. Lead, dieldrin and arsenic levels in surface soil in some areas present unacceptable risks for hypothetical future residents. Lead is above the industrial health protective level in selected areas (south end of Building 949).

The Depot distributed the final MI FSs for Soil and Groundwater in July 2000. The MI Proposed Plan public comment period ended in October 2000. The selected remedy in the MI ROD calls for institutional controls across the entire MI (except at Parcels 1 and 2 within FU6) to restrict residential land use and day care operations, to restrict the use of fluvial aquifer groundwater for potable water, to maintain a boundary fence around the golf course and recreational area (Parcel 3). The selected remedy also calls for enhanced bioremediation of the PCE and TCE in the fluvial aquifer and long term groundwater monitoring.

During development of the ROD, DLA elected to conduct a removal action of lead contaminated soil around the south end of Building 949 prior to finalization of the ROD. The ROD contains an explanation of significant difference regarding the removal action.

DLA, TDEC and EPA signed the MI ROD, and it became effective on September 6, 2001. The Depot completed the MI RD Workplan in July 2002 and began RD fieldwork to determine the best locations to implement the remedial action for groundwater. The Depot anticipates distributing the Rev 0 MI RD, which will include the enhanced bioremediation treatability study data, in 2003.

Because the facility was divided into subparcels to facilitate property transfer, information regarding OU-4 is organized by subparcel and may be found in Section 3.4, Environmental Condition of Property. OU-4 consists of the following parcels in their entirety: 12, 13, 14, 15, 30, 31, 32, and 33. OU-4 consists of portions of parcels 10, 11, and 29.

### **3.1.2 Installation-Wide Source Discovery and Assessment Status**

Several installation-wide assessments have been conducted to identify the presence of contamination and contamination sources at the Depot, as discussed in Section 3.1.1. Spill response sites are potential contamination sites where hazardous substances were spilled during handling or where storage containers leaked. Table 3-2 summarizes the sites that were identified through a review of the Spill Response Checklists provided by Depot personnel and in the database search report.

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

The status of most of these sites is addressed in Section 3.1.1. However, accidental spills or leaks of hazardous substances have occurred since the RFA and the Law Environmental RI were completed in 1990. The most recent assessments, on-site visual inspections and a records review were conducted in 1996 as part of the BRAC EBS process. The additional sources of potential contamination are listed in Table 3-3.

Several other installation-wide surveys related to environmental compliance programs have also been conducted at the Depot. These include asbestos, PCB, radon, and radiological surveys. The results of these surveys and the current status of these environmental programs are described in Section 3.2.

Reviews of sampling results conducted by the BCT as part of the BRAC environmental restoration process revealed the following additional areas of concern: soil at the former military family housing units (removed in 1998), soil at the golf course (risk assessment indicated no unacceptable risk for recreational use) and soil south of Building 873 (risk assessment indicated no unacceptable risk for industrial use). These areas of concern were addressed according to the strategy described in Section 4. As part of the RI, aerial photographs of the Depot taken by the U.S. Army (currently maintained by the U.S. Army Topographic Engineering Center [TEC]) from 1942 until 1996 revealed the following areas of concern: old pond area northwest of Building 689, former container storage strip between current Buildings 670 and 560, former magazines east of 2nd Street at the golf course, and Mallory Avenue ground scar at the grass area between the Depot fence line and Perry Road across from Mallory Avenue. These new areas of concern were addressed according to the strategy described in Section 4.

The MI RI and FSs are complete. The selected remedy in the MI ROD calls for institutional controls across the majority of the MI (except at Parcels 1 and 2 within FU6) to restrict residential land use and day care operations, to restrict the use of fluvial aquifer groundwater for potable water, to maintain a boundary fence around the golf course and recreational area (Parcel 3). The selected remedy also calls for enhanced bioremediation of the PCE and TCE in the fluvial aquifer and long-term groundwater monitoring.

The Depot completed the Dunn Field RI report in August 2002. The Depot completed the soil vapor extraction treatability study at Dunn Field in 2002. In August 2002, the Depot distributed the Rev. 0 Dunn Field FS for BCT review and comment.

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

### **3.2 COMPLIANCE PROGRAM STATUS**

Compliance activities at the Depot are conducted in coordination with the Depot's environmental restoration program. General compliance activities address the management of USTs, hazardous materials, asbestos, PCBs, and air and water discharges. Compliance-related restoration actions at the Depot include removal of USTs and abatement of friable asbestos.

The statutory/regulatory basis for environmental restoration activities at the Depot is CERCLA. Compliance-related management and restoration activities are differentiated from CERCLA because they are regulated primarily under other statutory programs. These include RCRA Subtitles C, D and I, the Clean Water Act, Clean Air Act, Toxic Substances Control Act and NEPA.

Compliance actions at the installation can be divided into two categories. (1) current mission- and operational-related compliance projects and (2) closure-related compliance projects. Mission- and operational-related projects are those that have been or would be conducted for the normal operation of the Depot and are unrelated to activities necessitated by property closure under BRAC. Conversely, closure-related compliance projects are those conducted specifically as a result of environmental compliance and restoration activities related to BRAC closure and property transfer.

Several compliance-related activities at the Depot were completed in order to reduce or eliminate potential contamination at the Depot. These actions involved UST removal/closure, PCB transformer removal and asbestos abatement.

The Depot maintained various permits and registrations with federal, state and local agencies in compliance with environmental regulations. These included UST permits, hazardous waste generator activities permit, an industrial wastewater discharge agreement, a stormwater permit, and air emission permits. The industrial wastewater discharge agreements are still active at the Depot. The last of the Depot's air permits were closed in May 1997. The Depot's hazardous waste container storage permit was closed by TDEC effective October 22, 1998. The remaining two permitted USTs were removed in 1998, and the Depot received closure approval from TDEC in December 1998. The Depot received termination of the stormwater permit in June 2001. The Depot does not plan to transfer permits to future tenants, but will address this issue if desired by future tenants.

A more detailed description of the various environmental compliance programs being implemented for the Depot is provided in the following subsections.

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

### **3.2.1 Storage Tanks**

Both USTs and ASTs at the Depot have historically been used to store petroleum products for heating purposes, vehicle and equipment fueling, and maintenance operations. The Depot no longer maintains USTs or ASTs.

#### **USTs**

The EPA has delegated the management of the RCRA UST program to the State of Tennessee. The TDEC, Division of Underground Storage Tanks, has primary responsibility for implementation of the state UST program. Tank fitness testing was performed on installation USTs in 1993. Based on results of tank tightness and associated piping tightness tests and a review of current and future mission requirements at the Depot, all but two regulated USTs on the Depot were removed or closed in place. All soil contamination discovered during removal/closure of the tanks was removed.

In 1998, the two remaining regulated USTs were removed. TDEC approved the Depot's closure applications in December 1998.

In 2000, a UST documented as closed by filling with sand was removed during the old paint shop and maintenance area removal action. It was found to contain approximately 800 gallons of used oil and hydraulic fluid. The UST was in good condition and no soil staining was observed. Confirmation sample results indicated no release to the surrounding soil. The contents of the tank were removed and disposed while the tank was dismantled, cleaned, and disposed.

A complete inventory of USTs is provided in Table 3-4. The table includes information on the location, size, contents and status of each UST.

#### **ASTs**

The AST compliance programs at the Depot were conducted under federal requirements including 40 Code of Federal Regulations (CFR) Parts 110, 112 and 116, and TDEC oil pollution prevention regulations.

There were five ASTs present on the Depot. An inventory of the ASTs on the facility including tank size, contents and status is provided in Table 3-5. The Depot no longer maintains these ASTs.



### **3.2.2 Hazardous Substance Management**

Use and storage of operations-related hazardous substances decreased due to closure of the Depot. Prior to closure on September 30, 1997, the Depot conducted a closeout survey program established for facilities being vacated. Hazardous substances found abandoned during these closeout surveys were identified, and arrangements were made for the proper disposal of the materials in compliance with regulatory requirements.

Hazardous substances were managed in compliance with federal requirements outlined in the Emergency Planning and Community Right-to-Know Act, Executive Order 12385, the SPCC requirements in 40 CFR Parts 110 and 112, Defense Logistics Agency memo (DLAM) 6050.1, and other applicable federal, state and local regulations.

Prior to closure, hazardous substances as specified in SARA, Title II, Section 302, were stored in sufficient quantities at the Depot to require reporting under SARA Title III, Section 312 (Tier reporting), and SARA Title III, Section 313 (Toxic Chemical Release Form R reporting). Mission-related hazardous substances were transferred from the Depot to other DLA storage depots or were turned into the DRMO for proper disposal. The Depot no longer stores extremely hazardous substances and therefore is no longer required to report under SARA Title III, Sections 312 and 313.

### **3.2.3 Lead-based Paint**

Lead-based paint (LBP) at the Depot was managed in accordance with the DOD memorandum entitled "Asbestos, Lead Paint, and Radon Policies at BRAC Properties," dated October 31, 1994, and with the DA memorandum entitled "Guidance for Lead-Based Paint Hazard Management During Transfer of Army Property," dated August 26, 1998. The DOD policy related to LBP at BRAC properties was developed to comply with Title X (The Residential Lead-Based Paint Hazard Reduction Act of 1992) of Public Law 102-550. Title X applies to BRAC properties to be transferred after January 1, 1995. The DOD policy specifies the following:

- Target housing is defined as "any U.S. Army housing constructed before 1978 in which any child less than 6 years of age resides or is expected to reside."
- Target housing constructed after 1960 and before 1978 must be inspected for LBP and LBP hazards. The results of the inspection must be provided to prospective purchasers or transferees of the BRAC subparcel, identifying the presence of LBP and LBP hazards on a surface-by-surface basis. In addition, prospective transferees

must be provided a lead hazard information pamphlet and the contract for sale or lease must include a lead warning statement

- Target housing constructed on or before 1960 must be inspected for LBP and LBP hazards, and such hazards must be abated. There is no federal LBP hazard abatement requirement for such property. The results of the LBP inspection and a description of the abatement measures taken must be provided to prospective purchasers or transferees of the BRAC subparcel. Prospective transferees must also be provided with the lead hazard information pamphlet, and the contract for transfer must include a lead warning statement.

A comprehensive LBP survey was conducted at the Depot in 1995. Lead-based paint abatement occurred at the former military family housing area in 1997, 1998 and 1999.

### **3.2.4 Hazardous Waste Management**

Hazardous waste compliance programs at the Depot are conducted under the federal requirements found in RCRA Subtitle C, 40 CFR 260 through 269, 40 CFR 117, 49 CFR 171 et seq and TDEC hazardous waste management rules. DLA has delegated responsibility for management and transportation of hazardous waste to the contractors conducting design and removal/remedial actions. The EPA has delegated responsibility for the RCRA Subtitle C program to TDEC. The TDEC Division of Solid Waste Management administers the state program.

The Depot was classified as a large quantity generator of hazardous waste (producer of 1,000 kilograms or more of hazardous waste or more than 1 kilogram of acutely hazardous waste per month). The Depot has been reclassified as a small quantity generator and continues to operate under EPA identification number TN4210020570.

The Depot's waste management practices are conducted in accordance with the waste management portions of sampling, removal or remedial action plans. TDEC closed the Depot's hazardous waste container storage portion of the permit effective October 22, 1998. The Depot decontaminated Building 308 in 2001 and will not renew any part of the RCRA permit.

### **3.2.5 Solid Waste Management**

The Depot no longer manages solid waste

### **3.2.6 Polychlorinated Biphenyls**

The PCB management compliance programs at the Depot were conducted under DLAM 6050 1, the federal requirements found in 40 CFR 761, Department of Transportation regulations and TDEC PCB regulations. The PCB management practices at the Depot also were conducted in accordance with the installation's PCB management plan, last revised in January 1995.

In 1993, a PCB survey was performed to identify all regulated transformers located at the Depot. Appendix E provides a comprehensive inventory of these regulated transformers. Since 1993, the Depot removed all PCB-containing transformers and disposed the equipment through a DRMO waste contract.

### **3.2.7 Asbestos**

The EPA, OSHA and the Memphis/Shelby County Health Department regulate asbestos-containing material (ACM). The Depot managed ACM in compliance with the DA guidance and the DOD memorandum entitled "Asbestos, Lead Paint, and Radon Policies at BRAC Properties," dated October 31, 1994.

An asbestos survey (The Pickering Firm, 1993a through c, 1994a through k) was performed at the Depot. The survey included the results for suspected ACM and recommendations for management based on the condition of the ACM.

The information reported in this survey is summarized in Appendix E, and includes the subparcel where the surveyed building is located; the building number (from either the Asbestos Identification Survey report or the separate facility listing); the facility use (as described in the Asbestos Information Survey report); the year of construction (obtained from a separate facility listing); the results of the survey; and the Asbestos Information Survey report documenting the results.

In Appendix E, buildings with positive test results confirming the presence of ACM were given an "A," indicating ACM is present. Buildings for which test results or visual surveys indicated ACM was not present were given an "N." Buildings not included in the Asbestos Information Survey, but which are on the facility list, are included in the summary in Appendix E. They were designated with an "NA" if they were thought to no longer exist, were demolished since the 1993 survey or were built after the 1993 survey. If the date of construction for any building not surveyed was prior to 1985, an "A(P)" designation was given, indicating that the potential for ACM exists.

### **3.2.8 Radon**

Based on the results of the radon testing conducted in 1995, radon levels in structures at the Depot are below the EPA action level, therefore, no further testing or abatement is planned. The results of the survey are provided in Appendix E.

### **3.2.9 RCRA Facilities**

The RCRA units at the Depot were managed under the installation hazardous waste management program and environmental restoration program in accordance with DOD directives, CERCLA and TDEC hazardous waste regulations. Specific investigation and restoration requirements for solid waste management units at the Depot are included in the CERCLA environmental restoration process.

A complete description of the status of these environmental restoration activities is provided in Section 3.1 of this plan. A description of RCRA hazardous waste management activities at the Depot is provided in Section 3.2.4.

### **3.2.10 Wastewater Discharges**

Point source wastewater discharges generated at the Depot are regulated under the federal Water Pollution Control Act, Clean Water Act, National Pollutant Discharge Elimination System (NPDES) permit program (40 CFR Parts 122, 125, and 136), TDEC wastewater discharge permit regulations, and two city of Memphis industrial wastewater discharge agreements - one for domestic sewage discharge and one for the interim remedial action for groundwater at Dunn Field discharge. Point source wastewater and domestic sewage are discharged via the city's sanitary sewer to the city's treatment facilities.

The Depot requested and received from TDEC termination of the NPDES permit effective June 29, 2001.

### **3.2.11 Oil/Water Separators**

Three oil/water separators operated at the Depot. The oil/water separators were managed under the installation's SPCC program, in accordance with applicable federal regulations including Section 313(a) of the Clean Water Act and 40 CFR Parts 110, 112, and 122; TDEC oil pollution prevention regulations, and DOD directives. The separators were cleaned regularly and the wastewater from the units was pumped and discharged to the city's wastewater lagoon. The discharge from the unit

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 72

was sampled regularly to ensure proper operation and compliance with regulatory requirements. One oil/water separator was removed in 1999 by the DRC during construction of the entrance boulevard. The other two units remain, but are no longer used by the Depot.

### **3.2.12 Pollution Prevention**

Pollution prevention at the Depot was managed through the installation hazardous waste minimization and pollution prevention plan. The plan was developed in January 1992 in accordance with the pollution prevention requirements of Title 40 of RCRA, TDEC hazardous waste management rules and DLAM 6050.1. Plan elements included source reduction through hazardous substance product substitution and conservation, operational changes, and the implementation of good operating practices such as loss prevention, waste stream segregation, and material handling improvements. Wastes collected for off-site recycling included used oil.

### **3.2.13 Medical Waste**

Medical waste generated from storage of medical items was disposed of as special waste in the local sanitary landfill. Prior to 1980, records indicate medical waste generated from storage of medical items was incinerated at either the incinerator in Building 359 or at the Memphis Zoo.

### **3.2.14 Unexploded Ordnance**

The properties to be offered for reuse at the Depot have not been used regularly for the storage, maintenance or demilitarization of explosive ordnance. There are three areas at the Depot that were identified as having potential concerns related to unexploded ordnance (UXO). Two areas were used as pistol ranges. One pistol range was located near the ninth hole of the golf course and MI RI results indicated no unexploded ordnance. The second pistol range was located in the Dunn Field area. The third area, an ordnance burn area, was also located in the Dunn Field area. RI and CWM investigation indicated no unexploded ordnance at these locations.

### **3.2.15 NEPA**

To comply with NEPA, an Environmental Assessment (EA) for Master Interim Lease of the Defense Distribution Depot Memphis, Tennessee was completed in September 1996 by the CESAM. An EA for Disposal and Reuse of the Defense Distribution Depot Memphis, Tennessee was completed in February 1998 by CESAM. A Finding of No Significant Impact resulting from disposal and reuse of the Depot was signed by AMC in March 1998. A more complete description of the disposal and reuse scoping process is provided in Section 2.1.

**3.2.16 Air Emissions**

Immediately prior to closure, the Depot maintained air permits from the Memphis/Shelby County Health Department to operate three air emission sources at the Depot. These sources included two paint spray booths and one sand blast unit. These air emission permits were closed in May 1997.

**3.3 STATUS OF NATURAL AND CULTURAL RESOURCES**

The following is a brief summary of natural and cultural resources at the Depot. For more information, refer to the EA for Disposal and Reuse for the Depot completed in February 1998

**3.3.1 Vegetation**

The Depot is highly developed. Very little native vegetation exists except as associated with Lake Danielson, the golf course pond or with undisturbed areas at Dunn Field. In addition, landscaping programs have concentrated decorative plantings around Lake Danielson, the golf course and the former military family housing area.

**3.3.2 Wildlife**

Because the Depot is in a highly developed area it offers limited habitat. Ducks, geese, frogs, goldfish and Arkansas shiners have been observed at the golf course pond and Lake Danielson. Dunn Field is the only undisturbed open area on the site. Animals that have been observed at Dunn Field include squirrels, red foxes, quail, mourning doves and turtles.

**3.3.3 Wetlands**

A wetland survey of the Depot was completed by the USACE, Memphis District in July 1996. Survey results indicated that there are no regulated wetlands on the Depot.

**3.3.4 Designated Preservation Areas**

There are no designated preservation areas at the Depot.

**3.3.5 Rare, Threatened, and Endangered Species**

No federally listed or proposed threatened or endangered species have been observed on the Depot (Law Environmental 1990b, Harland Bartholomew & Associates, Inc. 1988).

**3.3.6 Cultural and Historical Resources**

***Archaeological Resources***

No archaeological sites are known to be located within the immediate vicinity of the Depot, although the area was occupied by a variety of Native American groups. In May 1997, USACE, Ft. Worth District, conducted an archeological survey of two parcels identified in "A Cultural Resources Inventory and Assessment at the Defense Distribution Depot Memphis, Tennessee" as having the potential for archeological sites. These parcels, the golf course area and Dunn Field, were found to contain no archaeological resources (Prewitt & Associates, Inc. 1997).

***Historical Resources***

There are currently no sites or structures located on the Depot property that are listed on the National Register of Historic Places (Harland Bartholomew & Associates, Inc. 1988). In April 1997, USACE, Ft. Worth District, conducted a cultural resources survey. The final report entitled "A Cultural Resources Inventory and Assessment at the Defense Distribution Depot Memphis, Tennessee," dated June 6, 1997, indicated that the World War II-era warehouses known as the 20 Typicals were eligible for inclusion on the National Register of Historic Places (NRHP). The Tennessee State Historic Preservation Officer (TNSHPO) agreed with the report's assessment on the 20 Typicals and also determined that three World War II-era guard stations were also eligible for inclusion on the NRHP. No nominations to the NRHP have been made.

In June 1998, AMC, TNSHPO and the Advisory Council on Historic Places signed a Memorandum of Agreement regarding these NRHP-eligible buildings and received DRC concurrence.

**3.4 ENVIRONMENTAL CONDITION OF PROPERTY**

During the EBS, the Depot was divided into subparcels to facilitate decision-making regarding the environmental condition of specific areas. As defined in the EBS, a subparcel is an area of BRAC property that can be segregated from its surrounding areas, based on the environmental condition of the property. The subparcels and corresponding categorizations are identified on Figure 3-5, Environmental Condition of Property Map Main Installation and Figure 3-6, Environmental Condition of Property Map Dunn Field. Areas containing or potentially containing non-CERCLA substances are identified and delineated separately with the letter "Q" as qualified subparcels. Qualified subparcels may be precluded from transfer or lease for unrestricted use and overlay all "environmental condition of property" categories (Categories 1 through 7).

The seven standard "environmental condition of property" categories, as defined in the CERFA guidance and the Revised DOD BCP Guidebook (September 1996) are as follows:

**Category 1.** Areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).

**Category 2.** Areas where only release or disposal of petroleum products has occurred.

**Category 3.** Areas where release, disposal and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial action

**Category 4.** Areas where release, disposal and/or migration of hazardous substances has occurred, and all remedial actions necessary to protect human health and the environment have been taken.

**Category 5.** Areas where release, disposal and/or migration of hazardous substances has occurred, and removal or remedial actions are under way, but all required remedial actions have not yet been taken

**Category 6.** Areas where release, disposal and/or migration of hazardous substances has occurred, but required actions have not yet been implemented.

**Category 7.** Areas that are not evaluated or require additional evaluation

Each subparcel was given a number to which appropriate descriptive labels are attached. The numbers consist of a unique subparcel identification number and an environmental condition of property category number. The labels consist of a designation describing the type release or storage, if applicable. The following designations are used to indicate the type of release or storage present in a subparcel

PS = Petroleum storage

PR = Petroleum release or disposal

HS = Hazardous substance storage

HR = Hazardous substance release or disposal

A one-acre grid coordinate system is overlaid to facilitate the following subparcel discussion by geographically locating the various subparcels. Subparcel boundaries were drawn using the best



available information regarding the extent of contamination and do not follow map grid lines. Circular 0 25-acre subparcels centered on the area, as stipulated in DOD guidance, delineated small areas of release or storage, such as USTs. For consistency and to facilitate the summation of acreages, subparcel acreages were calculated to two decimal places using the digitized map and AutoCAD Release 13. This method is not meant to imply an accuracy to one one-hundredth of an acre.

Table 3-6 summarizes the BRAC subparcel descriptions. The BRAC subparcels in this table have been presented in order by CERFA category. A brief summary of subparcels is provided in the following sections. Figure 1-6a indicates the areas on the MI where VOC levels in groundwater exceed MCLs. Within the designated area of the MI, especially in the northeast quadrant, there may exist locations where groundwater does not exceed MCLs. The contour in this figure is conservative based on a low density of monitoring wells. Figure 1-6b indicates areas on Dunn Field where VOC levels in groundwater exceed MCLs.

#### **3.4.1 Areas Where No Release or Disposal Has Occurred**

Woodward-Clyde's survey and subsequent parcelization of the Depot in 1996 identified 38 subparcels, totaling 6.2 acres, as uncontaminated. Category 1 subparcels. Review by the BCT in 1997 and 1998 identified several additional Category 1 subparcels, bringing the total to 56 subparcels and the acreage to 57.43 acres of Category 1 subparcels found on Table 3-7. Although EPA concurred with the CERFA uncontaminated parcels letter reports dated March 1997 and July 1998, additional data collected since then regarding areas of groundwater contamination beneath the MI and ICs required by the MI ROD at parcels within FUs 1 through 6 (excluding Parcels 1 and 2) have resulted in subparcels reverting from Category 1 to either Category 4 (ICs implemented via the Master Lease and the Environmental Protection Provisions contained in subsequent FOSLs) or Category 6 (groundwater beneath the subparcel contains VOC levels exceeding Safe Drinking Water Act maximum contaminant levels [MCLs]). A total of 13 subparcels encompassing approximately .93 acres are designated Category 1. These subparcels are areas where there has been no documented release or disposal, or migration from an adjacent property of hazardous substances or petroleum products. The designated Category 1 subparcels as well as the Category 1 subparcels that have reverted to Category 4 or 6 are described on Table 3-6.

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

### **3.4.2 Areas Where Only Petroleum Release or Disposal Has Occurred**

Category 2 subparcels are areas where only release or disposal of petroleum products has occurred. No subparcels are designated Category 2.

### **3.4.3 Areas Where Release, Disposal and/or Migration Has Occurred, but No Remedial Action is Required**

The Category 3 subparcels listed below are areas where release, disposal and/or migration of hazardous substances has occurred, but at concentrations that do not require removal or remedial action. Information regarding releases was obtained from the Depot's Spill Response Checklists maintained by DDC (Memphis). A total of 6 subparcels encompassing approximately 22.83 acres are designated Category 3.

#### **Subparcel Number and Label 1.8(3)**

#### **CERFA Map Location 33,12**

This subparcel is associated with the parking lots and open land area surrounding Building 144 as well as Buildings 143, 146 and 147. Both the north and south parking lots in this subparcel are the location of former housing units. These housing units were demolished. This subparcel includes grassed areas that were historically sprayed with pesticides and herbicides. A 4-gallon motor oil spill was reported in 1995 for the Gate 1 parking lot. In addition, a diesel spill was reported in 1993 at Gate 1. The Spill Team responded, took the appropriate action and disposed of all residues in accordance with federal, state and local regulations. The MI RI baseline risk assessment concluded that FU 6, which contains Parcels 1, 4 and 5, was suitable for industrial reuse. The residential surrogate site that indicated restricted use was located in Parcel 4. Parcel 1 was used in the past for administrative and employee parking purposes and does not contain any long-term operational areas. The MI RI Report indicated levels that are not inconsistent with unrestricted use. The BCT concurred that a hazardous substance release occurred as a result of pesticide application during routine grounds maintenance, but not at concentrations that require remediation. On January 17, 2001, the BCT concurred that Parcel 1.8 change from Category 7 to Category 3. A FOST for this subparcel was signed in September 2001. The deed to the City of Memphis Police Department for 4.67 acres was signed on February 6, 2002. The deed to the DRC for 13.36 acres was signed on May 6, 2002. This subparcel has been transferred.

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

#### **Subparcel Number and Label 36.12(3)**

##### **CERFA Map Location 23,11**

This subparcel is associated with Site 62 (Bauxite Storage), one above-grade covered bauxite pile. The pile was removed in 1998. The Dunn Field RI Report indicated levels of several constituents that exceeded BCT screening criteria, but that did not present unacceptable risks for residential or industrial reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 3.

#### **Subparcel Number and Label 36.13(3)**

##### **CERFA Map Location 27,11**

This subparcel is associated with Site 62 (Bauxite Storage), two above-grade covered bauxite piles. The piles were removed in 1998. The Dunn Field RI Report indicated levels of several constituents that exceeded BCT screening criteria, but that did not present unacceptable risks for residential or industrial reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 3.

#### **Subparcel Number and Label 36.24(3)**

##### **CERFA Map Location 28,11**

This subparcel is associated with Site 19 (Former Tear Gas Canister Burn Site) where sanitary wastes, construction debris, smoke pots, and tear gas canisters were disposed of from 1955 to 1960. The Dunn Field RI Report indicated levels of several constituents that exceeded BCT screening criteria, but that did not present unacceptable risks for residential or industrial reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 3.

#### **Subparcel Number and Label 36.25(3)**

##### **CERFA Map Location 30,10**

This subparcel is associated with Site 20 (Asphalt Burial Site) where asphalt and roofing gravel were dumped in a surface fill, but were reportedly removed in 1981. The Dunn Field RI Report indicated levels of several constituents that exceeded BCT screening criteria, but that did not present unacceptable risks for residential, recreational or industrial reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 3.

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

### **Subparcel Number and Label 36.26(3)**

#### **CERFA Map Location 31,13**

This subparcel is associated with Site 21 (XXCC-3 Burial Site) that consists of two trenches of unknown depths where an unknown amount of XXCC-3 impregnate (used to make clothing less susceptible to the effects of chemical warfare agents) and clothing treated with XXCC-3 impregnate was buried. The Dunn Field RI Report indicated levels of several constituents that exceeded BCT screening criteria, but that did not present unacceptable risks for residential, recreational or industrial reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 3.

### **3.4.4 Areas Where Release, Disposal and/or Migration Has Occurred and All Remedial Actions Have Been Taken**

The Category 4 subparcels listed below are areas where release, disposal and/or migration of hazardous substances have occurred, and all removal or remedial actions necessary to protect human health and environment have been taken. Information regarding releases was obtained from the Depot's Spill Response Checklists maintained by the DDC (Memphis). A total of 69 subparcels, encompassing approximately 137.45 acres, are designated Category 4. Of these 69 subparcels, 31 subparcels encompassing approximately 35.03 acres reverted from Category 1 to Category 4 (see Table 3-6 for descriptions of these subparcels) due to the ICs called for in the Main Installation ROD and implemented by the Master Lease and subsequent Main Installation FOSLs.

### **Subparcel Number and Label 2.7(4)**

#### **CERFA Map Location 33,6**

This subparcel is associated with the open land area surrounding the former military family housing units and garages in Parcel 2. Four BRAC soil samples were collected and sample results indicated levels of chlorinated hydrocarbon pesticides (dieldrin, DDE, DDT and gamma-chlordane) above BCT screening criteria. In September 1997, the BCT changed this subparcel to a Category 6 due to the presence of dieldrin and the DRC's high priority for reuse of this subparcel. The Depot completed the removal action in 1998. In May 1999, the BCT concurred that the removal action was complete and to change this subparcel from Category 6 to Category 4 based on the successful completion of this removal action. A FOST for this subparcel was signed in February 2001, and the deed was signed in September 2001. This property has been transferred.

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 80

### **Subparcel Number and Label 3.8(4)**

#### **CERFA Map Location 32,5**

This subparcel is associated with the golf course pond that receives surface water runoff from the golf course and southeast portion of the MI. The MI RI Report indicated levels of several constituents that exceeded BCT screening criteria, but that did not present unacceptable risks for recreational or industrial reuse. The MI ROD calls for remedial action in the form of ICs to maintain a boundary fence around Parcel 3 and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 3.9(4)**

#### **CERFA Map Location 30,3**

This subparcel is associated with the golf course pond outlet ditch that receives stormwater flow from surrounding areas and intermittent flow from the pond. The MI RI Report indicated levels of several constituents that exceeded BCT screening criteria, but that did not present unacceptable risks for recreational or industrial reuse. The MI ROD calls for remedial action in the form of ICs to maintain a boundary fence around Parcel 3 and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 3.10(4)**

#### **CERFA Map Location 30,6**

This subparcel is associated with a pistol range directly near the 9<sup>th</sup> hole of the golf course that was identified on a 1947 installation map. The MI RI did not indicate the presence of UXO at this subparcel. The MI RI Report indicated levels of several constituents that exceeded BCT screening criteria, but that did not present unacceptable risks for recreational or industrial reuse. MI ROD calls for ICs to maintain a boundary fence around Parcel 3 and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 4.7(4)**

#### **CERFA Map Location 28,10**

This subparcel is associated with Buildings 256 and 257 and Site 67 (MOGAS – Building 257). The DRC demolished both buildings in 1999 during construction of the entrance boulevard. Building

257 was fumigated in the past. Air sampling conducted during the BRAC sampling effort in the winter of 1997 indicated no human health hazards from fumigation. Several spills were reported for this building, including one 2-gallon gasoline spill reported on April 20, 1990, leaking tank at gasoline station reported on August 11, 1993, and gasoline release from tank pressure tube reported on August 31, 1993. The Spill Team responded, took the appropriate action and disposed of all residues in accordance with federal, state and local regulations. In addition, fuel dispensing and storage have been ongoing at Building 257 since 1942 (two 1,000-gallon ASTs are located at this building and a 2,580-gallon gasoline tank was removed December 1989). Two USTs (18,000 and 20,000 gallons) were removed in 1998 from the open land area south of Bldg 257. In September 1997, the BCT changed this subparcel to a Category 6 due to the scheduled UST removal project. Upon receipt of UST closure approval from TDEC-UST in December 1998, The BCT concurred to change this subparcel from Category 6 to Category 2 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 2 to Category 4 based on implementation of the ICs.

**Subparcel Number and Label 6.1(4)**

**CERFA Map Location 28,11**

This subparcel is associated with the open land area surrounding Buildings 349, 350 and 250. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.

**Subparcel Number and Label 6.2(4)HR**

**CERFA Map Location 29,11**

This subparcel is associated with Building 250 and may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation.

Staining due to acid leaks from batteries in the forklift area was observed during the EBS visual inspection. After the December 1997 BCT decision to change fumigated buildings to Category 1, the BCT conferred and concurred via telephone calls that this subparcel would become a Category 3 based on the cleanup of battery acid. In June 1998, the BCT again concurred to change this subparcel from Category 7 to Category 3 believing no remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.

**Subparcel Number and Label 6.4(4)HR**

**CERFA Map Location 26,11**

This subparcel is associated with Building 350 and may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. Staining due to acid leaks from batteries in the forklift area was observed during the EBS visual inspection. After the December 1997 BCT decision to change fumigated buildings to Category 1, the BCT conferred and concurred via telephone calls that this subparcel would become a Category 3 based on the cleanup of battery acid. In June 1998, the BCT again concurred to change this subparcel from Category 7 to Category 3 believing no remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.

**Subparcel Number and Label 7.1(4)**

**CERFA Map Location 29,13**

This subparcel is associated with the open land area surrounding Building 249. This subparcel contains railroad tracks and gravel areas that historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. The Preliminary Risk Evaluation identified this subparcel as exceeding BCT screening criteria. The BCT identified the subparcel for potential removal action and changed the Category 7 to Category 6. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not

present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. Therefore, no removal action will occur. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 6 to Category 4 based on implementation of the ICs.

**Subparcel Number and Label 7.2(4)HS/HR**

**CERFA Map Location 29,12**

This subparcel is associated with Building 249 that was formerly used as a storage facility for clothing treated with impregnite (XXCC-3), a chemical used as a preventive to the effects of chemical warfare agents on skin. A battery acid spill was reported on April 15, 1993, at Building 249, north dock. The Spill Team responded, applied sodium bicarbonate and disposed of all residues in accordance with federal, state and local regulations. This building may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. After the December 1997 BCT decision to change fumigated buildings to Category 1, the BCT conferred and concurred via telephone calls that this subparcel would become a Category 4 based on the cleanup of the battery acid. In June 1998, the BCT again concurred to change this subparcel from Category 7 to Category 4 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 4 based on implementation of the ICs.

**Subparcel Number and Label 10.3(4)**

**CERFA Map Location 17,10**

A battery acid and hydraulic fluid spill were reported on March 18, 1993 between Buildings 550 and 650. The Spill Team responded, applied sodium bicarbonate and absorbent and disposed of all residues in accordance with federal, state and local regulations. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.



**Subparcel Number and Label 10.5(4)**

**CERFA Map Location 19,11**

This subparcel is associated with Building 550 and may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. Staining due to acid leaks from batteries in the forklift area was observed during the EBS visual inspection. After the December 1997 BCT decision to change fumigated buildings to Category 1, the BCT concurred to change this subparcel to Category 3 based on the cleanup of battery acid. In June 1998, the BCT again concurred to change this subparcel from Category 7 to Category 3 believing no remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.

**Subparcel Number and Label 13.5(4)**

**CERFA Map Location 33,16**

This subparcel is associated with Building 211 and its associated emergency generator, Gates 23, 24 and 25, and the surrounding open land area extending to Airways Boulevard. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.

**Subparcel Number and Label 14.2(4)**

**CERFA Map Location 33,17**

This subparcel is associated with Building 209 (demolished in 1998) and the surrounding open land area extending north to Dunn Road and east to Airways Boulevard. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. In addition,

this subparcel is associated with a 12,000-gallon heating oil tank that was located outside of Building 209 but was removed in July of 1994. There has been no documented release associated with this tank, and no evidence was found of disposal or of migration from an adjacent property of hazardous substances or petroleum products. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.

**Subparcel Number and Label 15.2(4)**

**CERFA Map Location 26,18**

This subparcel is associated with 308 and Site 35 (Building 308 - Hazardous Waste Storage). Samples were collected from around the building. Air samples from inside the building to assess the impact from storage of hazardous materials indicated no human health hazards. In June 1998, The BCT concurred to change this subparcel from Category 7 to a Category 3 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.

**Subparcel Number and Label 15.4(4)**

**CERFA Map Location 14,18**

This subparcel is associated with Building 702, demolished in 1998. In February 1999, The BCT concurred to change this subparcel from Category 7 to Category 3 because the building was demolished and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

### **Subparcel Number and Label 18.1(4)HS/HR**

#### **CERFA Map Location 17,8**

This subparcel is associated with Building 560. Two spills (5 gallons and 15 gallons) of aqueous film forming foam were reported on October 17, 1995 and November 14, 1995 inside Building 560. Section 3. The Spill Team responded, applied absorbent and disposed of all residues in accordance with federal, state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 4 and the BCT concurred. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 18.2(4)**

#### **CERFA Map Location 19,8**

This subparcel is associated with the open land area surrounding Building 560. This subparcel contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. In September 1997, The BCT concurred to change this subparcel from Category 7 to Category 3 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 20.2(4)HS/HR**

#### **CERFA Map Location 17,6**

This subparcel is associated with Building 670. Significant corrosion was observed during the EBS visual inspection due to acid leaks at the battery charging station. Sodium bicarbonate was applied and disposed in accordance with federal, state and local regulations. A 1-gallon spill of hydraulic fluid was reported on August 30, 1995, inside Building 670, Section 1. The Spill Team responded, applied absorbent and disposed of all residues in accordance with federal, state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 4 and the BCT concurred. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 4 based on implementation of the ICs.

#### **Subparcel Number and Label 20.6(4)**

##### **CERFA Map Location 20,4**

This subparcel is associated with the location of a sulfuric acid spill that was reported on June 10, 1993, on the south dock of Bay 5, Building 489 (DDMI 1993). The Spill Team responded, took appropriate action and disposed of all residues in accordance with local, state and federal regulations. This subparcel also contains gravel areas that were historically sprayed with waste oil containing PCP. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.

#### **Subparcel Number and Label 21.4(4)HS/HR**

##### **CERFA Map Location 15,4**

This subparcel is associated with Building 685. Corrosion was observed during the EBS visual inspection due to acid spills at the battery charging station. Sodium bicarbonate was applied and disposed in accordance with federal, state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 4 and the BCT concurred. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.

#### **Subparcel Number and Label 22.1(4)**

##### **CERFA Map Location 18,4**

This subparcel is associated with the open land area between east ends of Buildings 689 and 690. This subparcel contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 88

unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or day care operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 22.2(4)**

#### **CERFA Map Location 17,4**

This subparcel is associated with Screening Site 77 (Unknown Wastes Near Buildings 689 and 690). Battery acid spilled during MHE battery charging procedures was washed out a nearby door onto the gravel area immediately east of Building 685. This subparcel contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 23.7(4)**

#### **CERFA Map Location 11,5**

This subparcel is associated with Building 783, which previously stored flammable items and ordnance material and is Site 82. The DRC demolished Building 783 in 2002. In March 1999, The BCT concurred to change this subparcel from ECP Category 7 to a Category 3 based on a BCT visual inspection of the building's interior that determined no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 23.8(4)**

#### **CERFA Map Location 11,3**

This subparcel is associated with Building 793, which previously stored flammable items and ordnance material and is Site 82. In March 1999, The BCT concurred to change this subparcel from Category 7 to Category 3 based on a BCT visual inspection of the building's interior that determined no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 23.10(4)**

#### **CERFA Map Location 8,2**

This subparcel is associated with the open gravel storage area south of Buildings 873 and 875 in area X01, which was reportedly a small lake when the Depot opened in 1942. This subparcel consists of a gravel area that was historically sprayed with waste oil containing PCP, pesticides and herbicides. Records also indicate transformers possibly containing PCBs may have been stored at this area. There is no documentation of releases from the transformers. In October 1997, the BCT concurred to change this subparcel from Category 7 to Category 3 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 24.1(4)HR**

#### **CERFA Map Location 10,3**

This subparcel is associated with the southern end of open storage area X02, the gravel area east of Site 27 (Former Recoupment Area - Building 873). The southern end of X02 was used as a hazardous materials recoupment area (remove hazardous materials from damaged containers then repackage the materials) until the current Recoup Building was constructed in 1987/1988. The Depot completed a removal action in 1985 of soil contamination from previous spills (DDT, DDE, and aldrin). The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 5 and the BCT concurred based on the removal action, but further category changes would require RI results. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 5 to Category 4 based on implementation of the ICs.

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

### **Subparcel Number and Label 23.9(4)**

#### **CERFA Map Location 4,2**

This subparcel is associated with a gasoline spill reported on September 13, 1993, adjacent and to the northwest of Building 995. The Spill Team responded, applied absorbent, removed stained soil and disposed of it in accordance with federal, state and local regulations. Soil samples indicated that petroleum hydrocarbons were detected at 3.2 mg/kg, well below the Tennessee clean-up level of 100 mg/kg. In October 1997, The BCT concurred to change this subparcel to Category 3. In December 1998, The BCT concurred to change this subparcel from Category 3 to Category 2 based on the new ECP definitions regarding petroleum releases and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 2 to Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 23.11(4)**

#### **CERFA Map Location 6,2**

This subparcel is associated with the open land area surrounding Building 995. This subparcel contains grassed areas that were historically sprayed with pesticides and herbicides and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 29.2(4)**

#### **CERFA Map Location 4,18**

This subparcel is associated with open storage areas X27 and X30, Buildings 801 and 802, and the surrounding open land area extending north to Dunn Road and west to Perry Road. This subparcel contains railroad tracks, open storage areas and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. The railroad tracks and ballasts were removed in 1999/2000. In addition, this subparcel is associated with a 1.25-gallon hydraulic fluid spill that was reported on

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 91

September 12, 1995 in the street. The spill reportedly spread north, through Gate 15, and across Dunn Avenue (DDMT 1995). The Spill Team responded, applied absorbent, removed any stained soil and disposed of all residues in accordance with federal, state and local regulations. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 29.3(4)**

#### **CERFA Map Location 2,11**

This subparcel is associated with Site 56 (Western Drainage Ditch), a stormwater drainage canal that collects the stormwater runoff from the western portion of the MI. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 30.1(4)**

#### **CERFA Map Location 4,14**

This subparcel is associated with Building 925. This building served as the Bulk Flammable Materials warehouse and stored 55-gallon drums of flammable materials such as xylene, toluene, acetone, methyl ethyl ketone, methanol and ethanol. Prior to construction of Building 915, this area was a bermed open storage location (X25) for petroleum products and flammable materials. A fabric tension structure was erected over this bermed area and warehoused flammable materials. On January 19, 1988, the fabric tension structure collapsed during a storm resulting in about 325 gallons of flammable materials being released in the bermed area and mixing with about 30,000 gallons of rainwater. The Spill Team and the Memphis Fire Department responded. The material was contained and removed to an appropriate disposal facility. The containment and clean up of this spill has been documented by the Depot and the Memphis Fire Department. The current Building 925 was constructed after this incident over a portion of the original fabric tension structure area. In September 1997, the BCT concurred to change this subparcel from Category 7 to Category 4 because the spill did not occur in the current building and any spilled material had volatilized over the



## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

past nine years. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 30.2(4)**

#### **CERFA Map Location 4,13**

This subparcel is associated with the former X25 open storage area, a 1988 spill and Site 53. In the past, flammable materials were stored in 55-gallon drums within an earthen bermed area, which was later converted to a concrete bermed area. A fabric tension structure was erected over the concrete berm area. In 1988, the structure collapsed during heavy winds releasing approximately 327 gallons of flammable material (xylene, toluene, and methyl ethyl ketone) that mixed with approximately 30,000 gallons of water. The Memphis Fire Department Hazmat Team joined the Depot's Spill Team in cleaning up the spill. The material/water waste was pumped out of the bermed area and disposed of according to federal, state and local regulations. Building 925 was constructed over a portion of the area in 1994. In February 1999, the BCT concurred to change this subparcel from Category 7 to Category 4 based on cleanup of the spill and sample results. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 30.3(4)**

#### **CERFA Map Location 4,15**

This subparcel is associated with the open land area surrounding Buildings 925 and 949, excluding the area in Subparcels 30.2 and 30.5. This subparcel also contains a portion of open storage area X23 and was formerly open storage area X25. Both X23 and X25 were used to store 55-gallon drums of POLs and flammable materials. Buildings 925 and 949 were constructed on former open storage area X25. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. The MI RI Report indicated levels of several metals that exceeded BCT screening criteria and presented unacceptable risks for industrial reuse. The MI FS and Proposed Plan indicated the need for lead-impacted soil to be removed from this subparcel. During

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

development of the MI ROD. DLA elected to conduct a removal action. The ROD contains an explanation of significant differences regarding the removal action decision. The Depot completed the removal action in 2001. The MI RI Report also indicated levels of several constituents that presented unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 6 to Category 4 based on completion of the removal action and on implementation of the ICs.

#### **Subparcel Number and Label 30.5(4)**

##### **CERFA Map Location 4,10**

This subparcel is associated with Site 83 (Dried Paint Disposal Area). According to interviews with Depot personnel, spray painting and sand blasting occurred at this location until the early 1980s. The MI RI Report indicated levels of several metals that exceeded BCT screening criteria and presented unacceptable risks for industrial reuse. The MI FS and Proposed Plan indicated the need for lead-impacted soil to be removed from this subparcel. During development of the MI ROD, DLA elected to conduct a removal action. The ROD contains an explanation of significant differences regarding the removal action decision. The Depot completed the removal action in 2001. The MI RI Report also indicated levels of several constituents that presented unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 6 to Category 4 based on completion of the removal action and on implementation of the ICs.

#### **Subparcel Number and Label 33.7(4)**

##### **CERFA Map Location 13,7**

This subparcel is associated with Site 81 (Fuel Oil Building 765), a 12,000-gallon diesel fuel aboveground storage tank removed in 1994. This subparcel also contains a gravel area that was historically sprayed with pesticides, herbicides and waste oil containing PCP. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 94

### **Subparcel Number and Label 33.11(4)**

#### **CERFA Map Location 14,9**

This subparcel is associated with the 1,000-gallon diesel above ground storage tank outside Building 756. The original 1,000-gallon underground storage tank supplying the emergency generator in Building 756 was removed in June 1994. The 1996 Final Environmental Baseline Survey determined this subparcel to be Category 2 and the BCT concurred believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or day care operations reuse. In 2002, the BCT concurred to change this subparcel from Category 2 to Category 4 based on implementation of the ICs.

### **Subparcel Number and Label 35.1(4)**

#### **CERFA Map Location 3,3**

This subparcel is associated with Building 1090 that was used to store paint thinner, lubricating oil, P-19 preservation oil, and corrosion preservation compound. In February 1999, the BCT concurred that this building be cleaned during the removal action for the surrounding area and to change the subparcel from Category 7 to Category 6. The Depot completed the removal action in August 2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or day care operations reuse. In 2002, the BCT concurred to change this subparcel from Category 6 to Category 4 based on implementation of the ICs.

### **3.4.5 Areas Where Release, Disposal and/or Migration Has Occurred and Action is Under Way but Not Final**

Category 5 subparcels are areas where release, disposal or migration of hazardous substances has occurred, and removal or remedial actions are under way, but all required actions have not yet been implemented. No subparcels are designated Category 5.

### **3.4.6 Areas Where Release, Disposal and/or Migration Has Occurred, but Required Response Actions Have Not Been Taken**

The Category 6 subparcels listed below are areas where release, disposal and/or migration of hazardous substances have occurred, but the required removal or remedial actions have not yet been

taken Information regarding releases was obtained from the Depot's Spill Response Checklists maintained by DDC (Memphis) A total of 101 subparcels encompassing approximately 481.46 acres are designated Category 6. Of these 101 subparcels, 12 subparcels encompassing approximately 21.47 acres reverted from Category 1 to Category 6 (see Table 3-6 for descriptions of these subparcels) due to groundwater beneath these subparcels containing VOC levels exceeding MCLs

**Subparcel Number and Label 3.5(6)**

**CERFA Map Location 29,4**

This subparcel is associated with Buildings 188, 189, 192, 194, 197 and 398, open land area surrounding these buildings, the golf course, the baseball field and the playground area This subparcel contains grassed areas that were historically sprayed with pesticides and herbicides The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for recreational or industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to maintain a boundary fence around Parcel 3, to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

**Subparcel Number and Label 3.6(6)**

**CERFA Map Location 26,6**

This subparcel is associated with Lake Danielson, which is located in the northwest corner of the Golf Course and receives stormwater runoff from the central portion of the MI. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for recreational or industrial reuse, but did present unacceptable risks for residential reuse The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to maintain a boundary fence around Parcel 3, to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD

**Subparcel Number and Label 3.7(6)**

**CERFA Map Location 26,4**

This subparcel is associated with the Lake Danielson outlet ditch that receives stormwater flow from surrounding areas and intermittent flow from the lake. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for recreational or industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to maintain a boundary fence around Parcel 3, to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

**Subparcel Number and Label 3.11(6)**

**CERFA Map Location 30,6**

This subparcel is associated with an area on the golf course that was used to test flame-thrower fuels. Firefighting techniques were also practiced at this site after ignition of the fuel. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for recreational or industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to maintain a boundary fence around Parcel 3, to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

**Subparcel Number and Label 4.4(6)PS/PR/HS/HR**

**CERFA Map Location 30,9**

This subparcel is associated with Building 260, Site 41 (Satellite Drum Accumulation Area) and Site 30 (Safety Kleen Units). The Safety Kleen unit was removed prior to closure. Absorbent was applied to released Safety Kleen solvent and disposed in accordance with federal, state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 3 and the BCT concurred believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 97

report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 4.5(6)**

##### **CERFA Map Location 30,8**

This subparcel is associated with Building 261 and the open land area surrounding buildings in Parcel 4. This subparcel contains grassed areas that were historically sprayed with herbicides and pesticides. A 5,000-gallon heating oil tank was removed in July 1994 outside of Building 253. Two 12,000-gallon and one 20,000-gallon gasoline USTs were removed in 1986 south of Building 257. One 18,000-gallon and one 20,000-gallon gasoline USTs that were actually in Subparcel 4.6 replaced these tanks. These tanks were removed in June 1998. Soil sampling conducted in accordance with TN UST removal procedures indicated no release of gasoline or diesel. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 4.6(6)**

##### **CERFA Map Location 29,9**

This subparcel is associated with Building 254 and a portion of the open land area/underground storage tank (UST) field west of the building. The DRC demolished this building in 1999. The EBS visual inspection noted that petroleum products, oils, lubricants and antifreeze were stored in this building as well as leaking drums and ground staining. In addition, a 5-gallon diesel spill was reported on March 20, 1995, from a tank outside the southwest corner of Building 254. The Spill Team responded, applied absorbent and disposed of all residues in accordance with federal, state and local regulations. A 1,110-gallon gasoline tank was removed in December 1989 from the UST field. Two USTs were removed in 1998 from the UST field behind Building 254. In September 1997, the BCT changed this subparcel to Category 6 due to the scheduled UST removal project. Upon receipt

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 98

of UST closure approval by TDEC-UST in December 1998. The BCT concurred to change this subparcel from Category 6 to Category 2 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 2 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 4.8(6)**

##### **CERFA Map Location 30,9**

This subparcel is associated with Building 263, which has been used as attendants' room for the dispensing of petroleum, oil and lubricant to vehicles and as a vehicle grease rack since the 1940s, and to Site 68 (POL.-Building 263). Records do not indicate any release, disposal or migration. In addition, this building was fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. After the December 1997 BCT decision to change fumigated buildings to Category 1, the BCT concurred to change this subparcel to Category 3 based on the potential release and cleanup of petroleum products and antifreeze. In June 1998, the BCT again concurred to change this subparcel from Category 7 to Category 3 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 4.9(6)**

##### **CERFA Map Location 29,8**

This subparcel is associated with Pad 267, the site of the former pesticide shop (Building T267). Pad 267 was a concrete slab that has been covered with asphalt and is currently used as a parking lot. Building T267 was used for storing and mixing of pesticides/herbicides. Rinse water from

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

pesticide/herbicide spraying operations was reportedly dumped on the ground near the facility. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 4.10(6)**

##### **CERFA Map Location 31,7**

This subparcel is associated with Building 273 that was used for mixing golf course pesticides and herbicides and the former putting green. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 4.12(6)HS/HR**

##### **CERFA Map Location 31,10**

This subparcel is associated with Building 251, demolished in 1999 during construction of the boulevard construction. Building 251 had a floor drain connected to the sanitary sewer. One surface soil sample was taken from the sump beneath the floor drain. Results indicate elevated concentrations of many metals and PAHs. The Preliminary Risk Evaluation indicated these concentrations had a risk ratio above acceptable levels for residential and industrial worker scenarios. In December 1997, the BCT recommended that the sump be cleaned and, if appropriate, grouted closed and that upon completion of this action, the subparcel should change to a Category 4. The Depot completed the action in January 1998, and The BCT concurred to change this subparcel from Category 7 to Category 4 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding



### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 4.13(6)HS/HR**

##### **CERFA Map Location 31,8**

This subparcel is associated with Building 265 that has a floor drain that is connected to the sanitary sewer. One surface soil sample was taken from the sump beneath the floor drain. Results indicate elevated concentrations of many metals and PAHs. The Preliminary Risk Evaluation indicated these concentrations had a risk ratio above acceptable levels for residential and industrial worker scenarios. In May 1998, the BCT recommended that the sump be cleaned and, if appropriate, grouted closed and that upon completion of this action, the subparcel should change to a Category 4. The Depot completed the action in June 1998 and the BCT concurred to that this subparcel change from Category 7 to Category 4 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 5.1(6)**

##### **CERFA Map Location 29,7**

This subparcel is associated with Building 272 and the surrounding open land area. This subparcel contains grassed areas that were historically sprayed with herbicides and pesticides. In September 1997, The BCT concurred to change this subparcel from Category 7 to Category 3 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 101

change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.

### **Subparcel Number and Label 5.2(6)**

#### **CERFA Map Location 29,7**

This subparcel is associated with Building 274, "J" Street Café, and the open land area surrounding the building. This subparcel is also associated with Site 48 (Former PCB Transformer Area). Building 274 was constructed after transformer storage ceased. In 1997, surface soil samples were collected from the grassy areas directly outside of Building 274. Sample results indicated levels of PCBs and dieldrin that exceeded BCT screening criteria. The DRC identified this subparcel as a high priority for reuse. In 1997, The BCT concurred to conduct a removal action at this subparcel and to change this subparcel to a Category 6. The Depot completed the removal action in 1998. In May 1999, the BCT concurred that the removal action was complete and to change this subparcel from Category 6 to Category 4 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.

### **Subparcel Number and Label 8.1(6)**

#### **CERFA Map Location 28,14**

This subparcel is associated with the open land area surrounding Buildings 229, 230, 329 and 330. This subparcel contains railroad tracks that were historically sprayed with pesticides, herbicides, and waste oil containing PCP and grassed areas that were historically sprayed with herbicides and pesticides. The railroad tracks and ballasts were removed in 1999/2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 9.1(6)**

##### **CERFA Map Location 23,13**

This subparcel is associated with the open land area surrounding Buildings 429, 430, 449 and 450. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 9.3(6)HR**

##### **CERFA Map Location 23,13**

This subparcel is associated with Building 430 and may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. Staining due to acid leaks from batteries in the forklift area was observed during the EBS visual inspection. After the December 1997 BCT decision to change fumigated buildings to Category 1, the BCT concurred to change this subparcel to Category 3 based on the cleanup of battery acid. In June 1998, the BCT again concurred to change this subparcel from Category 7 to Category 3 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.

**Subparcel Number and Label 10.1(6)HR**

**CERFA Map Location 16,12**

This subparcel is associated with Building 649. A 1-gallon hydraulic fluid spill was reported on August 11, 1995, inside Building 649, Section 5. The Spill Team responded, applied absorbent and disposed of all residues in accordance with federal, state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be Category 3 and the BCT concurred based on the cleanup of the spills and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.

**Subparcel Number and Label 10.2(6)**

**CERFA Map Location 18,11**

This subparcel is associated with the open land area surrounding Buildings 549, 649, 550 and 650 and contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

**Subparcel Number and Label 11.1(6)**

**CERFA Map Location 18,14**

This subparcel is associated with the open land area surrounding Buildings 529, 530 and 630. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in

1999/2000 This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

**Subparcel Number and Label 11.2(6)**

**CERFA Map Location 19,15**

This subparcel is associated with Building 529 and may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. Antifreeze, firefighting foam and photographic chemicals were stored in the west end of the building. Records indicate several spills of firefighting foam. The Spill Team responded, applied absorbent and disposed of all residues in accordance with federal, state and local regulations. Staining due to acid leaks from batteries in the forklift area was observed during the EBS visual inspection. After the December 1997 BCT decision to change fumigated buildings to Category 1, the BCT concurred to change this subparcel to Category 3 based on the cleanup of battery acid and firefighting foam. In June 1998, the BCT again concurred to change this subparcel from Category 7 to Category 3 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.

**Subparcel Number and Label 12.1(6)**

**CERFA Map Location 17,15**

This subparcel is associated with the open land area surrounding Building 629. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This

subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

**Subparcel Number and Label 12.2(6)HS/HR**

**CERFA Map Location 16,15**

This subparcel is associated with Building 629, formerly a hazardous materials storage building (DDT, herbicides, solvents, oxidizers, and toxic/corrosive materials). A 6-gallon nitric acid spill was reported on April 23, 1990, inside Building 629, Section 1. The Spill Team responded, applied sodium bicarbonate and disposed of all residues in accordance with federal, state and local regulations. This building may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. After the December 1997 BCT decision to change fumigated buildings to Category 1, the BCT concurred to change this subparcel to Category 4 based on the cleanup of the nitric acid spill. In January 1998, the BCT again concurred to change subparcel from Category 7 to Category 4 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.

**Subparcel Number and Label 15.3(6)**

**CERFA Map Location 26,16**

This subparcel is associated with Building 319, a storage facility for various hazardous substances including flammables and toxics (cyanide). Low-level radioactive materials were also stored in the western bay of Building 319. Beginning in 1994, the eastern end of Building 319 was used for hazardous waste storage by DRMO. In addition, a xylene spill was reported on November 18, 1991.

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

inside Building 319, Section 4. In 1996 an inspection of the western bay was conducted as required for closure of the Defense Distribution Center's Nuclear Regulatory Commission permit for storage of low-level radioactive materials at the Depot. The inspection determined that approximately 8 feet of wall space within the western bay required remediation for low-level radioactive impacts. The Depot completed remediation in 1997. Soil samples collected in 1997 indicated chromium and lead at levels well below the 1 in a million risk ratio for both residential and industrial scenarios. The NRC approved the building remediation/permit closure documentation and deleted the Memphis Depot from the DDC's permit. Building 319 was released for use with no NRC restrictions. In June 1999, the BCT received the NRC permit closure approval documentation and concurred to change this subparcel from Category 7 to Category 4 based on the cleanup of both the xylene spill and the low-level radioactivity and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 15.5(6)**

##### **CERFA Map Location 23,18**

This subparcel is associated with a portion of the open gravel storage area Y50 that is west of Buildings 308 and 309. This subparcel is associated with Site 36 (DRMO Hazardous Waste Concrete Storage Pad), Site 37 (DRMO Hazardous Waste Gravel Storage Pad), Site 38 (DRMO Damaged/Empty Hazardous Materials Drum Storage Area), and Site 39 (DRMO Damaged/Empty Lubricant Container Area). This subparcel consists of gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The PRE identified this subparcel for removal action, and the BCT concurred to change this subparcel from Category 7 to Category 6. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse; therefore, no removal action occurred. The report indicated that constituents did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 107

reuse In 2002, the BCT concurred that this subparcel remains Category 6 based on the remedial actions that will be addressed by the MI RD

#### **Subparcel Number and Label 15.6(6)**

##### **CERFA Map Location 18,17**

This subparcel is associated with open storage areas Y10, Y11, Y50, and Y60; Buildings 301, 304, 305, 306, 307, 309, T416, T417, 701 and 717, Site 54 (DRMO East Stormwater Runoff Canal), Site 55 (DRMO North Stormwater Runoff Canal), Site 72 (Property Disposal Office Yard), and Site 79 (Fuels, Miscellaneous Liquids, Wood and Paper – Vicinity 702); and a 4,000-gallon heating oil tank located outside of Building 319 removed in July 1994 The DRC demolished Buildings T416 and T417 in 2002 There has been no documented release associated with this tank. This subparcel is also associated with a 30-gallon solvent spill south of Building 309 in 1991. The Spill Team responded, took appropriate action and disposed of all residues in accordance with federal, state and local regulations In addition, this subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 16.1(6)**

##### **CERFA Map Location 21,9**

This subparcel is associated with the open land area surrounding Building 559. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP The railroad tracks and ballasts were removed in 1999/2000 This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential



## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD

### **Subparcel Number and Label 17.2(6)**

#### **CERFA Map Location 22,9**

This subparcel is associated with the open land area surrounding Building 359. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. In addition, this subparcel is associated with the following tanks: a 12,000-gallon and a 500-gallon fuel oil tank closed in place in July 1994 and September 1995, respectively; a 1,000-gallon fuel oil tank and a 500-gallon diesel tank removed in 1993; a 12,000-gallon and a 500-gallon fuel oil tank removed in 1993. There have been no documented releases associated with these tanks. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

### **Subparcel Number and Label 17.3(6)HS/HR**

#### **CERFA Map Location 25,9**

This subparcel is associated with Building 359 and Site 49 (Medical Waste Storage Area). The DRC demolished this building in 1999 during construction of the entrance boulevard. This building was used for storage of medical supplies, medical supply waste (expired shelf life medical supplies), sodium chloride, petroleum products and low level radiological items (watch dials, lantern mantels and compasses). The 1997 Radiological Survey concluded this building was available for unrestricted use as no evidence of radiological contamination was found. A sulfuric acid spill was reported on August 27, 1993 inside Building 359, Section 2. The Spill Team responded, applied sodium bicarbonate and disposed of all residues in accordance with federal, state and local regulations. An out of service incinerator was also located in this building. This building was fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. After the December 1997 BCT decision to change fumigated buildings to

Category 1, the BCT concurred to change this subparcel to Category 4 based on the cleanup of the sulfuric acid. In June 1998, the BCT again concurred to change this subparcel from Category 7 to Category 4 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.

**Subparcel Number and Label 19.1(6)**

**CERFA Map Location 21,8**

This subparcel is associated with Building 467 (a fabric tension structure that was removed in 1996), Building 468 and the open land area surrounding Buildings 465, 468 and 469. Facility maintenance equipment was stored in Building 468. This subparcel contains railroad tracks that were historically sprayed with pesticides, herbicides, and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains a small grass area and a small gravel area that were historically sprayed with herbicides and pesticides. In February 1998 the BCT conducted a walk-through of the buildings. A 1,000-gallon oil/water separator is located in Subparcel 19.1 and is connected to the vehicle wash at Building 465. The separator is connected to the sanitary sewer and was routinely cleaned out. In March 1999, the BCT concurred to change this subparcel from Category 7 to Category 3 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 110

### **Subparcel Number and Label 19.2(6)**

#### **CERFA Map Location 22,7**

This subparcel is associated with Building 465, a vehicle wash rack. Chemical engine cleaners/degreasers may have been used or released in this building. This building contains a floor drain/sump connected to an oil/water separator, which is physically located in Subparcel 19.1. No sampling has been conducted at this subparcel. In February 1999, the BCT conducted a walk through of Building 465, determined that the sump had been cleaned upon facility closure and used since then only to wash grounds keeping equipment. In May 1999, the BCT concurred to change this subparcel from Category 7 to Category 3 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.

### **Subparcel Number and Label 19.3(6)**

#### **CERFA Map Location 22,8**

This subparcel is associated with Building 469, which was the battery repair/charge shop. Acids, parts cleaning fluids and petroleum products were stored and used in Building 469. This subparcel is associated with Sites 40 (Safety Kleen Units) and 41 (Satellite Drum Accumulation Areas). A self-contained Safety Kleen unit was used in Building 469. Building 469 was also a satellite drum accumulation area for waste petroleum products and sulfuric acid. There is no evidence of releases from the units or accumulation area. On December 16, 1993, a transformer oil spill was reported at Building 469. Approximately 6 ounces of material was spilled on the south wall and floor near the entrance. The sheet rock wall and concrete floor absorbed some of the oil. The Spill Team responded, applied absorbent and disposed of the residue in accordance with federal, state and local regulations. Samples were collected from the absorbent and concrete and results indicated PCB-1242. According to the Spill Team Leader on the scene at the time of the spill and during sampling, the effected area was removed during sampling operations. In February 1999, the BCT conducted a walk through and was unable to locate the spill area. In May 1999, the BCT concurred that no further evidence of the spill remained, that a remedial action occurred, and to change this subparcel Category 7 to Category 4 based on the cleanup of the spill and believing no further action was

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 20.1(6)PR**

##### **CERFA Map Location 21,5**

This subparcel is associated with a 1-gallon oil spill reported on November 3, 1995, at the north dock of Building 489, Section 4. The Spill Team responded, applied absorbent and disposed of all residues in accordance with federal, state and local regulations. This subparcel became a Category 2 due to the ECP Category definition change that occurred after the 1996 Environmental Baseline Survey categorized this subparcel as a Category 3. In December 1998, the BCT concurred to change this subparcel to Category 2 based on the new ECP definitions and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 2 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 20.3(6)HS/HR**

##### **CERFA Map Location 20,7**

This subparcel is associated with Building 470. Corrosion was observed during the EBS visual inspection due to acid spills at the battery charging station. Sodium bicarbonate was applied and disposed in accordance with federal, state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be Category 4 and the BCT concurred believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 20.4(6)HS/HR**

##### **CERFA Map Location 21,5**

This subparcel is associated with Building 489. Corrosion was observed during the EBS visual inspection due to acid spills at the battery charging station. Sodium bicarbonate was applied and disposed in accordance with federal, state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 4 and the BCT concurred believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 20.5(6)**

##### **CERFA Map Location 19,6**

This subparcel is associated with the open land area surrounding Buildings 470, 489 and 670. This subparcel contains railroad track and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 113

### **Subparcel Number and Label 21.2(6)PS/HS/HR**

#### **CERFA Map Location 23,3**

This subparcel is associated with Building 490 and Site 40 (Safety Kleen Units). The Safety Kleen unit was removed prior to closure. Corrosion was observed during the EBS visual inspection due to acid spills at the battery charging station. Sodium bicarbonate was applied and disposed in accordance with federal, state and local regulations. A 1-gallon spill of sulfuric acid/battery acid was reported on December 15, 1995, inside Building 490, Section 5. The Spill Team responded, applied sodium bicarbonate and disposed of all residues in accordance with federal, state and local regulations. Petroleum products and microfiche developing chemicals were stored and used in Building 490. The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 4 and the BCT concurred believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.

### **Subparcel Number and Label 21.3(6)HS/HR**

#### **CERFA Map Location 15,5**

This subparcel is associated with Building 689, Site 78 (Alcohol, Acetone, Toluene, Naphtha, Hydrofluoric Acid Spills) and Site 40 (Safety Kleen Units). Building 689 historically staged alcohol, acetone, toluene, and hydrofluoric acid before transport. The Safety Kleen unit was removed prior to closure. Eleven spills are documented from May 8, 1990 through November 16, 1995 and included nitric acid, corrosion removing compound, hydraulic fluid, oil and sulfuric acid. The Spill Team responded, took the appropriate action and disposed of all residues in accordance with federal, state and local regulations. Samples were collected from the concrete parking lot immediately adjacent to and outside of Building 689. The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 4 and the BCT concurred believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 21.5(6)**

##### **CERFA Map Location 19.3**

This subparcel is associated with the open land area surrounding Buildings 490, 689 and 690. This subparcel contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. This subparcel is also associated with Screening Site 76 (Unknown Wastes Near Building 690). The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 23.6(6)**

##### **CERFA Map Location 12.2**

This subparcel is associated with open land areas south of Buildings 690 and 490 including parking lots and grassy areas, the open land area surrounding Buildings 783, 787 and 793 as well as Sentry Stations at Gates 8 and 7. This subparcel is also associated with Site 82 (Flammables - Building 783 and 793). The DRC demolished Buildings 783 and 787 in 2002. This subparcel contains grassed areas that were historically sprayed with herbicides and pesticides. In October 1997, the BCT concurred to change this subparcel from Category 7 to Category 3 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 115

### **Subparcel Number and Label 24.2(6)**

#### **CERFA Map Location 11,6**

This subparcel is associated with open storage areas X02 and X03, which were used for storage of POLs and flammable materials in 55-gallon drums until 1988. The areas then became steel storage. This subparcel contains railroad tracks, open storage areas and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

### **Subparcel Number and Label 24.3(6)**

#### **CERFA Map Location 11,7**

This subparcel is associated with Site 34 (Building 770 Underground Oil Storage Tanks), Site 30 (Paint Spray Booth), Site 40 (Safety Kleen Units) and Site 41 (Satellite Drum Accumulation Area) at Buildings 770 and T771. The EBS visual inspection noted that hazardous materials (antifreeze, paint, solvents, Safety Kleen) and petroleum products were stored in Building 770. Three spills are documented from July 1990 through August 1993. The Spill Team responded, took appropriate action and disposed of all residues in accordance with federal, state and local regulations. Several tanks have been removed, including, a 11,155-gallon diesel tank removed in July 1994; a 11,155-gallon fuel oil tank removed in July 1994; a 10,000-gallon fuel oil tank removed in July 1994; a 440-gallon gasoline tank removed in December 1989, and two 1,000-gallon used motor oil tanks removed in December 1989. Building 770 has an oil/water separator that was pumped out quarterly and a floor drain. The EBS visual inspection noted oil staining on the floor of Building T771. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential



or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

**Subparcel Number and Label 25.1(6)HS/HR**

**CERFA Map Location 9,4**

This subparcel is associated with Building 873 and Site 27 (Former Recoupment Area - Building 873) Building 873 stored hazardous materials such as chlorinated solvents, corrosives, petroleum, oils and lubricants. The DRC demolished Building 873 in 2002. The southern end of the building and the gravel area east of the building were used as the hazardous materials recoupment area (remove hazardous materials from damaged containers then repackage the materials) until the current Recoup Building was constructed in 1987/1988. Thirteen spills are documented from March 10, 1990 through November 29, 1993 and included tetrachloroethylene, sulfuric acid, hydraulic fluid and descaling compound. The Spill Team responded, took the appropriate action and disposed of all residues in accordance with federal, state and local regulations. Samples associated with Site 27 were taken outside of the building in Subparcel 25.2 and were evaluated in the RI. In September 1997, The BCT concurred to change this subparcel from Category 7 to Category 4 based on the cleanup of the spills and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.

**Subparcel Number and Label 25.2(6)**

**CERFA Map Location 8,7**

This subparcel is associated with Building 875, the open land area surrounding Buildings 873 and 875, and RI Site 27 (Former Recoupment Area/Building S873). The DRC demolished Building 875 in 2002. This subparcel also contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. A 1,000-gallon heating oil tank was closed in place in July 1994 outside Building 875. The PRE identified this subparcel for potential removal action. In September 1997, the BCT concurred to change this subparcel from Category 7 to Category 6. The MI RI Report

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, therefore, no removal action occurred. The report indicated the constituents did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 26.1(6)**

##### **CERFA Map Location 6,9**

This subparcel is associated with the open land area surrounding Building 970. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 26.2(6)**

##### **CERFA Map Location 6,4**

This subparcel is associated with Building 970. An oil-fired generator that had leaked oil onto the concrete pad was observed at Building 970, Section 6, during the EBS visual inspection. This release consisted of only petroleum products. Absorbent was applied and the residue disposed in accordance with federal, state and local regulations. In October 1997, the BCT concurred to change this subparcel from Category 7 to Category 2 based on the cleanup of a petroleum product and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 2 to Category 6 based on the remedial actions that will be addressed by the MI RD

#### **Subparcel Number and Label 27.1(6)**

##### **CERFA Map Location 4,9**

This subparcel is associated with the open land area surrounding Building 972. This subparcel contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD

#### **Subparcel Number and Label 27.2(6)**

##### **CERFA Map Location 4,4**

This subparcel is associated with Building 972 and Site 84 (Flammables, Solvents, Waste Oil - Building 972). The building once stored flammable materials, solvents and waste oil as an open shed building. Building 972 was converted to a closed building and stored and constructed wooden packing materials involving the use of petroleum products (oils and lubricants), paints and spray adhesives. Small operational spills occurred and were cleaned when they occurred. In addition, oil stained areas were observed in the building during the EBS visual inspection. The building recently had the floor cleaned and resealed, which removed the stains. In October 1997, the BCT concurred to change this subparcel from Category 7 to Category 4 based on the cleanup of operational spills and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

### **Subparcel Number and Label 28.1(6)**

#### **CERFA Map Location 2,7**

This subparcel contains the open storage area X04 north of Building 1089. This subparcel contains railroad tracks that were historically sprayed with pesticides, herbicides, and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. According to Depot personnel, this area was used for the storage of feed stock material and not hazardous materials. In October 1997, the BCT concurred to change this subparcel from a Category 7 to a Category 3 believing no further remedial action was required. The MI RJ Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.

### **Subparcel Number and Label 28.2(6)**

#### **CERFA Map Location 3,5**

This subparcel is associated with Building 1089, the open land area surrounding Building 1089 and Screening Site (SS) 89 (Acids - Building 1089). Building 1089 was used to store acids, paints and cleaning solvents. Surface soil sample results indicated lead, arsenic and chromium levels that exceeded BCT screening criteria. In October 1997, the BCT concurred to conduct a removal action at this subparcel and to change it from Category 7 to Category 6. The Depot completed the removal action in August 2000. The MI RJ Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 6 based on the remedial actions that will be addressed by the MI RD.

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

#### **Subparcel Number and Label 31.1(6)**

##### **CERFA Map Location 6,13**

This subparcel is associated with open storage areas X17, X19 and X21, and a portion of X23 and X15. These areas were used to store a variety of materials including POLs and hazardous materials. Records indicate that during the 1970s hazardous materials were recouped under a lean-to at the corner of 21st Street and E Street in the X21 area. This subparcel contains railroad tracks and open storage areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 32.1(6)**

##### **CERFA Map Location 9,14**

This subparcel is associated with open storage areas X13 and X15 to the west and north of Building 835. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. In October 1997, the BCT concurred to change this subparcel from Category 7 to Category 3 believing no remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

### **Subparcel Number and Label 32.2(6)**

#### **CERFA Map Location 9,13**

This subparcel is associated with Building 835. Thirteen spills were reported from March 9, 1991 to May 26, 1995 for Building 835. Materials spilled include battery acid, hydrochloric acid, sulfuric acid, herbicide, muratic acid, and transmission fluid. The Spill Team responded, took the appropriate action and disposed of all residues in accordance with federal, state and local regulations. Also, air sampling conducted in this building to assess the impact from storage of hazardous materials indicated no human health hazards. In September 1997, the BCT concurred to change this subparcel from Category 7 to Category 4 based on cleanup of these spills and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.

### **Subparcel Number and Label 32.3(6)**

#### **CERFA Map Location 9,10**

This subparcel is associated with Site 28 (Building 865, the Recoup Area Building) and the surrounding open land area. Building 865 is a handling area used to transfer hazardous substances/wastes or petroleum products/wastes from damaged or leaking containers into undamaged containers. A small fenced-in area is located on the southwest side of Building 865. The EBS visual inspection noted that this area contained various drums (5-, 10-, 15-, and 55-gallon) of old chemicals (oil, methyl ethyl ketone, and isopropanol), some with protruding rusting tops. This subparcel also includes gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 33.6(6)HR**

##### **CERFA Map Location 13,13**

This subparcel is associated with the open land area outside Building 737 and Site 44 (Former Wastewater Treatment Unit). A 50-gallon mineral oil (<1 ppm PCB) spill was reported in 1995 outside of Building 737. The Spill Team responded, excavated contaminated material and disposed of it in accordance with federal, state and local regulations. Site 44 (Former Waste Water Treatment Unit) was a temporary unit used to treat rainwater mixed with PCP-contaminated oil and rinse waters from decontamination during the soil removal of the PCP dip vat system in 1985. Sample results of the treated wastewater in the portable pool were acceptable for discharge into the Memphis sanitary sewer. No evidence of release was identified during the 1990 RCRA Facilities Assessment. The November 1996 Environmental Baseline Survey categorized this subparcel as a Category 4. In 1997 the ECP category definitions changed so that Category 4 was no longer appropriate for petroleum product releases. In December 1998, the BCT concurred Category 4 was not appropriate, as the release involved a petroleum product, and agreed to change the subparcel from Category 4 to Category 2 believing no remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 2 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 33.8(6)**

##### **CERFA Map Location 10,10**

This subparcel is associated with Building 863. The building contained a battery charging station. Material handling equipment (forklifts) was also stored in the building. The EBS visual inspection observed considerable oil stains on the concrete floor of Building 863. The BCT requested samples be taken from a nearby drainage point to determine if any releases occurred from the building. Samples results indicated no levels that exceeded the BCT screening criteria. In February 1999, the BCT concurred to change this subparcel from Category 7 to Category 3 believing no remedial action

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 33.9(6)**

##### **CERFA Map Location 12,14**

This subparcel is associated with open storage areas X05, X06, X07, X08, X09, X10 and X11; Buildings 720 and 737, and the open land area surrounding Buildings 720, 737, 753, 755, 756, 860 and 863. This subparcel is associated with Site 42 (Former Pentachlorophenol (PCP) Dip Vat Area), Site 43 (Former Underground PCP Tank Area), Site 46 (Pallet Drying Area) and Site 80 (Fuel and Cleaner Dispensing at Building 720). In 1985, the PCP dip vat, underground storage tank, associated piping and impacted soil were removed. According to interviews with Depot personnel, cleaners were not dispensed from Building 720, parts cleaning solutions were used in the building. No evidence was found of a 1,000-gallon waste oil tank inside Building 720. This subparcel contains railroad tracks, open storage areas and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. The railroad tracks and ballasts were removed in 1999/2000. The DRC demolished Buildings 860 and 863 in 2002. This subparcel also contained a 12,000-gallon diesel aboveground storage tank west of Building 720 that was removed in 1997 and a 200-gallon gasoline underground storage tank adjacent to Building 754 that was removed in 1986. Hazardous substances and petroleum products were historically stored in open storage areas X05, X06, X07, X08, X10, X11 and X12. Transformers containing mineral oil (non-PCB and PCB containing) were also stored in open storage area X07. Leaking 55-gallon drums of ethyl acetate/naphtha aromatic were reported to the Spill team, which responded, took the appropriate actions and disposed of all residues in accordance with federal, state and local regulations. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In



## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 124

2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD

### **Subparcel Number and Label 34.2(6)**

#### **CERFA Map Location 24,7**

This subparcel is associated with the open land area surrounding Building 360. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. In October 1997, the BCT concurred to change this subparcel from Category 7 to Category 3 believing no remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.

### **Subparcel Number and Label 35.2(6)**

#### **CERFA Map Location 3,5**

This subparcel is associated with Site 88, an old concrete grease rack and storage area for POLs at Building 1085 (removed), Site 29, a UST associated with the grease rack (removed 1988), Site 87 (Building 1084), in the past used for storage of DDT and other pesticides, and the open land area surrounding these buildings. This subparcel contains gravel areas that were sprayed with herbicides, pesticides and waste oil containing PCP. Samples were collected from the gravel areas and results indicated levels of metals and PAHs at levels that exceeded BCT screening criteria. In February 1999, the BCT concurred to change this subparcel from Category 7 to Category 6 and proceed through the removal action process. The Depot completed the removal action that included demolishing Building 1084 in August 2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 125

2002, the BCT concurred that this subparcel remains Category 6 based on the remedial actions that will be addressed by the MI RD.

### **Subparcel Number and Label 35.3(6)**

#### **CERFA Map Location 3,5**

This subparcel is associated with Building 1086 that contains a spray paint booth and stored hazardous materials from 1959 through 1983/1984. This building also contains a sump. This subparcel is associated with Site 30 (Paint Spray Booths). Samples were collected from the sump, and results indicated levels of metals and naphthalene. The BCT determined that the sump should be cleaned during removal actions at the surrounding parcels. In February 1999, the BCT concurred to change this subparcel from Category 7 to Category 6 and proceed through the removal action process. The Depot completed the removal action in August 2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 6 based on the remedial actions that will be addressed by the MI RD.

### **Subparcel Number and Label 35.4(6)**

#### **CERFA Map Location 3,3**

This subparcel is associated with Screening Site 31 (Former Spray Paint Booth in Building 1087) which was used for major stock primer and enamel spray painting operations, and Screening Site 33 (Sandblasting Waste Drum Storage) which consists of an open-sided, metal roof shed with a gravel floor south of Building 1088 and was historically used to store 55-gallon drums containing spent sandblasting material. This subparcel also includes gravel areas that were historically sprayed with herbicides and pesticides. Surface soil samples results indicated levels of PAHs, pesticides and metals that exceeded BCT screening criteria. At the February 1999 meeting, the BCT concurred that this subparcel should change from Category 7 to Category 6 and proceed through the removal action process. The Depot completed the removal action in August 2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 35.5(6)**

##### **CERFA Map Location 2,2**

This subparcel is associated with Site 32 (Sandblasting Waste Accumulation Area). Buildings 1088 and 1091 as well as the open land area surrounding these buildings but not included in existing subparcels. Sample results associated with Site 32 indicated levels of chromium, lead, arsenic, and PAHs that exceeded BCT screening criteria. In October 1997, the BCT concurred to change this subparcel from Category 7 to Category 6 and proceed through the removal action process. The Depot completed the removal action in August 2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 6 based on the remedial actions that will be addressed by the MI RD.

#### **Subparcel Number and Label 36.1(6)**

##### **CERFA Map Location 30,9**

This subparcel is associated with Site 2 (Ammonia Hydroxide and Acetic Acid Burial Site) where a seven-pound jug of ammonia hydroxide and a one-gallon bottle of acetic acid were buried. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

#### **Subparcel Number and Label 36.2(6)**

##### **CERFA Map Location 30,9**

This subparcel is associated with Site 3 (Mixed Chemical Burial Site) where 3,000 quarts of unknown chemicals and five cubic feet of orthotoluidine dihydrochloride were buried here. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

#### **Subparcel Number and Label 36.3(6)**

##### **CERFA Map Location 30,9**

This subparcel is associated with Sites 4 and 4.1 (Petroleum, Oil and Lubricant Burial Site) where forty-five 55-gallon drums of discarded oil, grease, paints, and thinner were buried in two adjacent trenches. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

#### **Subparcel Number and Label 36.4(6)**

##### **CERFA Map Location 30,9**

This subparcel is associated with Site 5 (Methyl Bromide Burial Site) where three cubic feet of methyl bromide were buried. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 128

disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions

#### **Subparcel Number and Label 36.5(6)**

##### **CERFA Map Location 30,8**

This subparcel is associated with Site 7 (Nitric Acid Burial Site) where 1,700 quart bottles of nitric acid were buried. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions

#### **Subparcel Number and Label 36.6(6)**

##### **CERFA Map Location 30,8**

This subparcel is associated with Site 8 (Methyl Bromide Burial Site) where 3,768 one-gallon cans of methyl bromide were buried to a depth of 7 feet. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

#### **Subparcel Number and Label 36.7(6)**

##### **CERFA Map Location 31,9**

This subparcel is associated with Site 11 (Trichloroacetic Acid Burial Site) where 1,433 one-ounce bottles of trichloroacetic acid were buried at a depth of 6 feet. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable

risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

**Subparcel Number and Label 36.8(6)**

**CERFA Map Location 27,8**

This subparcel is associated with Sites 12 and 12.1 (Sulfuric and Hydrochloric Acid Burial) where 30 pallets of discarded acid containers were buried at a depth of 8 feet. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

**Subparcel Number and Label 36.9(6)**

**CERFA Map Location 28,8**

This subparcel is associated with Site 13 (Mixed Chemical Burial) where 32 cubic yards of mixed chemicals and acids and 8,100 pounds of unnamed solids were buried at a depth of 8 feet. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

**Subparcel Number and Label 36.10(6)**

**CERFA Map Location 28,8**

This subparcel is associated with Sites 16 and 16.1 (Unknown Acid Burial Sites) where unknown amounts of unnamed acid were buried. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

**Subparcel Number and Label 36.11(6)**

**CERFA Map Location 28,8**

This subparcel is associated with Site 17 (Mixed Chemical Burial Site C) where an unknown amount of chemicals and medical supplies were buried. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

**Subparcel Number and Label 36.14(6)**

**CERFA Map Location 31,11**

This subparcel is associated with Site 60 (Pistol Range Impact Area and Bullet Stop) and Site 85 (Pistol Range Building and Temporary Pesticide Storage Building 1184). The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria that did not present unacceptable risks for residential, recreational and industrial reuse. However, lead levels at the pistol range impact area did present unacceptable risks for residential reuse. In February 2002, the Depot elected to conduct a removal action to reduce lead levels allowing unrestricted reuse of this subparcel and anticipated completing the removal action in 2002. The BCT concurred with the removal action decision and concurred to change this subparcel from Category 7 to Category 6.

## **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

### **Subparcel Number and Label 36.15(6)**

#### **CERFA Map Location 29,10**

This subparcel is associated with the open land area surrounding the disposal pits, excluding existing subparcels. The boundaries for this subparcel are on the north by the fence line, on the east by the paved road, on the south by the southern edge of the asphalt pad (intersecting by excluding Subparcel 36.29), and on the west by the fence line. This area contains grassy areas that were historically sprayed with pesticides and herbicides. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that VOCs in subsurface soil impacting indoor air did present unacceptable risks for industrial (along the northern fence line only) and residential reuse, that groundwater beneath this subparcel contains VOCs levels exceeding MCLs, and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

### **Subparcel Number and Label 36.16(6)**

#### **CERFA Map Location 29,9**

This subparcel is associated with Site 1 (Mustard and Lewsite Training Sets Burial Site) where nine sets of Chemical Agent Identification Sets were reportedly buried in 1955. In 1998, sampling of surface soil, subsurface soil and groundwater around this site indicated no migration of chemical warfare materiel. In order to reduce potential risk from chemical warfare materiel, the Army determined the CWM must be removed. In June 1999, the BCT concurred to conduct a removal action and to change this subparcel from Category 7 to Category 6. The Depot completed the removal action in May 2001. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil that impact indoor air and in groundwater at levels exceeding MCLs) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The Dunn Field FS will address VOCs in subsurface soil and in groundwater. In 2002, the BCT concurred that this subparcel remains Category 6 based on the anticipated need for further remedial actions.



**Subparcel Number and Label 36.17(6)**

**CERFA Map Location 30,9**

This subparcel is associated with Site 9 (Ashes and Metal Burial Site) where debris from Site 24 (Former Burn Site) was buried. The CWM field investigation determined this area does not contain CWM. See Appendix E for the documentation regarding this determination. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

**Subparcel Number and Label 36.18(6)**

**CERFA Map Location 28,9**

This subparcel is associated with food items with expired shelf life that were buried here. Reportedly, CAIS sets were also buried here. This subparcel is associated with Site 86. The CEHNC ordnance division and the CWM field investigation contractor have determined this area does not contain CWM. See Appendix C for documentation regarding this determination. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

**Subparcel Number and Label 36.19(6)**

**CERFA Map Location 28,9**

This subparcel is associated with food items with expired shelf life that were buried here. Reportedly, CAIS sets were also buried here. This subparcel is associated with Site 86. The CEHNC ordnance division and the CWM field investigation contractor have determined this area does not

contain CWM. See Appendix C for documentation regarding this determination. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

**Subparcel Number and Label 36.20(6)**

**CERFA Map Location 31,9**

This subparcel is associated with 40,037 units of eye ointment that were buried here in 1955. This subparcel is associated with Site 6. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

**Subparcel Number and Label 36.21(7)**

**CERFA Map Location 30,8**

This site was discovered during the installation of monitoring well 10. Charred debris was encountered. This subparcel is associated with Site 10. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that VOCs in subsurface soil impacting indoor air did present unacceptable risks for industrial and residential reuse, that groundwater beneath this subparcel contains VOCs levels exceeding MCLs, and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

**Subparcel Number and Label 36.22(7)**

**CERFA Map Location 28,8**

This municipal waste burial site reportedly contains paper, food, and other unnamed materials. This subparcel is associated with Site 14. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

**Subparcel Number and Label 36.23(7)**

**CERFA Map Location 28,8**

Records indicate that one pallet each of sodium and sodium phosphate containers, and an unknown quantity of sodium, sodium phosphate, acid, chlorinated lime, and medical supplies were buried here in 1970. This subparcel is associated with Sites 15.1 and 15.2. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

**Subparcel Number and Label 36.27(6)**

**CERFA Map Location 31,12**

This subparcel is associated with Site 50 (Dunn Field Northeast Quadrant Drainage Ditch), a concrete-lined drainage ditch collects stormwater runoff from surrounding areas. The Dunn Field RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for residential, recreational and industrial reuse. The report also indicated that groundwater beneath the northern fence line of this subparcel contains VOCs exceeding MCLs that appear to be migrating onsite from an up gradient, offsite source. The Dunn Field FS will address

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 135

VOCs in groundwater. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions

#### **Subparcel Number and Label 36.28(7)**

##### **CERFA Map Location 30,9**

This subparcel is associated with a stormwater drain that was installed in the mid-1950s and is used for stormwater conveyance. This subparcel is associated with Site 61 The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs The Dunn Field FS will address VOCs in subsurface soil and in groundwater. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

#### **Subparcel Number and Label 36.29(6)**

##### **CERFA Map Location 23,9**

This subparcel is associated with Site 24 (Former Burn Site/Bomb Casing Burial Site) Site 23 (Construction Debris and Food Burial Site) and Site 63 (Fluorspar Storage - Southeastern quadrant). In 1946, railcars carrying captured German bomb casings containing sulfur mustard in route to Pine Bluff Arsenal, AR from Mobile, AL began leaking mustard Upon examination of the cars, 29 bomb casings were identified as leaking. These casings were taken to one pit at Dunn Field and drained into and neutralized by a chlorinated lime (supertropical bleach) slurry. The drained casings were placed in the pit and destroyed by dynamite in case a burster remained intact In 1998, sampling of surface soil, subsurface soil and groundwater around this site indicated no migration of chemical warfare materiel. In order to reduce potential risk from chemical warfare materiel, the Army determined the CWM must be removed. In June 1999, the BCT concurred to conduct a removal action at Site 24 and concurred to change this subparcel from Category 7 to Category 6 The Depot completed the removal action in May 2001. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. The Dunn Field FS will address VOCs in

### **SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

710 136

subsurface soil and in groundwater as well as burial sites. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

#### **Subparcel Number and Label 36.30(6)**

##### **CERFA Map Location 28,12**

This subparcel is associated with the open land area of Dunn Field excluding existing subparcels. This subparcel contains railroad tracks that were historically sprayed with pesticides, herbicides, and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial or residential reuse. The report also indicated that one surface soil sample collected within this subparcel contained an arsenic level that did present an unacceptable risk to residential reuse, but was similar to levels identified in Shelby County and will not require remedial action. The report also indicated that groundwater beneath this subparcel contains VOC levels that exceed MCLs in two locations – along the northern fence line where groundwater appears to be migrating onsite from an up gradient, offsite source, and along the western fence line south of the recovery well system constructed as part of the Interim Remedial Action for groundwater. The Dunn Field FS will address VOCs in groundwater. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

#### **Subparcel Number and Label 36.31(6)**

##### **CERFA Map Location 28,13**

This subparcel is associated with an open land area of Dunn Field along Hays Street from Person Avenue to Dunn Avenue excluding Subparcel 36.26. The DRC requested this subparcel due to a Memphis road works project to expand Hays Street. This subparcel contains grassy areas that were historically sprayed with pesticides and herbicides. The Dunn Field RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for residential or industrial reuse. The report also indicated that groundwater beneath the northern fence line of this subparcel contains VOC levels exceeding MCLs that appear to be migrating onsite from an up gradient, offsite source. The Dunn Field FS will address VOCs in groundwater. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

**Subparcel Number and Label 36.32(6)**

**CERFA Map Location 31,11**

This subparcel is associated with the open land area in the northeast corner of Dunn Field, excluding Subparcels 36.14, 36.25, 36.26, 36.27 and 36.31. This subparcel is bounded on the north by the fence line, on the east by Subparcel 36.31, on the west by the dirt/gravel road along the top of the ridgeline, and on the south by the gravel road. The Depot created this subparcel due to interest in the area as a future recreation/park area. This subparcel contains grassy areas that were historically sprayed with pesticides and herbicides. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria that did not present unacceptable risks for residential, recreational and industrial reuse. The report also indicated that groundwater beneath the northern fence line of this subparcel contains VOC levels exceeding MCLs that appear to be migrating onsite from an up gradient, offsite source. The Dunn Field FS will address VOCs in groundwater. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.

**3.4.7 Unevaluated Areas or Areas Requiring Additional Evaluation**

Category 7 subparcels are areas that have not been evaluated or require additional evaluation. Information regarding releases was obtained from the Depot's Spill Response Checklists maintained by DDC (Memphis). No subparcels are designated Category 7.

**3.4.8 Qualified Parcels**

In determining the qualified subparcels, the Depot observed the following guidelines:

- If a building was not included in the 1993 asbestos survey, but was constructed prior to 1985 it was assumed to contain ACM. An "A(P)" for the possible presence of asbestos was used to qualify the subparcel.
- Since a LBP survey for non-residential reuse buildings has not been conducted, then buildings constructed prior to 1978 were assumed to contain LBP. An "L(P)" for the possible presence of LBP was used to qualify the subparcel.
- Parcels were qualified for ACM, LBP, PCBs, radon and radiological sources based on information gathered through records reviews, interviews and visual inspections.

- Areas used as firing ranges and impact areas have the potential to contain UXO and ammunition components (e.g., metal casings from small arms). An "X(P)" for the possible presence of UXO and ammunition components was used to qualify these areas

There are 85 subparcels, totaling approximately 110.38 acres, identified as qualified subparcels as described in Table 3-8. Buildings or areas within 12 subparcels totaling approximately 20.95 acres have either been demolished or found not to contain UXO since first identified as qualified subparcels in 1996 and have been removed from Table 3-8. When a qualified subparcel is associated with a building/facility, the acreage presented corresponds to the footprint of the building/facility. The qualified subparcels are labeled as follows on Table 3-8:

Subparcel - Building Number or Area Q - Qualifier

For example, 1.1-1Q-A/L(P) represents Subparcel 1.1, Building 1, and asbestos and possible LBP qualifiers.

### **3.4.9 Suitability of Installation Property for Transfer by Deed**

Superfund Amendments and Reauthorization Act Title 1, Section 120 to CERCLA addresses the transfer of federal property on which any hazardous substance was stored during any one-year period or was released or disposed of. Section 120 also requires any deed for the transfer of such federal property to contain, to the extent such information is available from a complete search of agency files, the following information:

- A notice of the type and quantity of any hazardous substance storage, release or disposal.
- Notice of the time at which such storage, release or disposal took place.
- A description of what, if any, remedial action has occurred; and
- A covenant warranting that appropriate remedial action will be taken.

Under SARA Title 1, Section 120 to CERCLA, those subparcels that are Category 1, 2, 3, 4 or 5 (if the remedy in place has been approved by the Administrator) meet the CERCLA criterion of being suitable for transfer to a non-federal entity. Category 6 and 7 properties, which may have unknown environmental impacts or may involve releases of hazardous substances as defined by CERCLA,

cannot be transferred to a non-federal entity under CERCLA until environmental restoration is initiated. The categorization process also provides valuable information regarding which property is available for unrestricted reuse because it has no environmental restrictions or the restrictions have been implemented (Category 1 through 4), and which property is undergoing remedial action and may therefore have property reuse restrictions (Category 5)

The Depot has subparcels totaling approximately 161.21 acres classified as CERFA Category 1 through 4. These subparcels, described in Sections 3.4.1 through 3.4.4 or on Table 3-6, are suitable for immediate transfer to a non-federal entity according to CERCLA. In 2001, EPA approved the transfer of Parcel 2 consisting of 6.51 acres. In 2002, EPA approved the transfer of Parcel 1 consisting of 18.03 acres. The Depot has subparcels totaling approximately 481.46 acres classified as CERFA Category 5 through 7 and discussed in Sections 3.4.5 through 3.4.7 or on Table 3-6. Category 6 and 7 subparcels cannot be transferred to a non-federal entity under CERCLA until environmental restoration is initiated. Category 5 subparcels may be transferred but not until the remedy is in place.

Although not regulated by SARA Title 1, Section 120, non-CERCLA substances delineating qualified subparcels also affect the suitability of BRAC property for transfer. The DOD has prepared guidance for dealing with the transfer of qualified subparcels, stating that issues relating to the presence of non-CERCLA substances, such as asbestos, LBP and UXO, will be fully addressed prior to transfer of the property.

### **3.5 STATUS OF COMMUNITY INVOLVEMENT**

Community involvement activities occurring at the Depot include activities relating to BRAC, the environmental restoration program, and the environmental compliance program. These activities include:

- **Information Repositories.** Information repositories are places where documents and information pertaining to the facility are stored and made available for public inspection. The Depot has established information repositories at the DDC (Memphis) Community Outreach Room, the Memphis/Shelby County Public Library Cherokee Branch, and the Memphis/Shelby County Health Department Pollution Control Division. The repositories contain information about environmental activities at the Depot.



- **Administrative Record.** An Administrative Record has been established for the Depot in accordance with CERCLA requirements. Depot personnel maintain the Administrative Record. Documents included in the Administrative Record have also been scanned, the images placed on compact diskettes and are available at all the IRs.
- **Technical Review Committee.** A technical review committee (TRC) was formed in February 1994 to review and comment on the Depot's actions related to releases or threatened releases of hazardous substances at the installation. The TRC meetings served as working sessions of the involved Depot, CEHNC, EPA and TDEC remedial project managers to discuss progress and scheduling of investigations and cleanup actions with city and county officials, local health department officials, and Memphis Light, Gas and Water officials. The TRC evolved into the RAB.
- **Restoration Advisory Board.** On July 21, 1994, the Depot hosted the first RAB meeting. The Depot created the RAB to promote increased public involvement and enable continued flow of information, concerns, and needs between the community and the Depot. At the Depot, the RAB includes representatives of the Memphis City Council, Shelby County Commission; the Memphis/Shelby County Health Department; Memphis Light, Gas and Water; EPA, TDEC; a local environmental group; concerned citizens; and the Depot. The RAB holds meetings to discuss environmental restoration and reuse issues. The public is encouraged to attend these meetings.
- **Community Relations Plan.** A final Community Relations Plan (Frontline, June 1999) was prepared for the Depot. The Community Relations Plan identifies issues of community concern and proposes site-specific activities to address these concerns.
- **Availability Sessions.** The Depot has conducted several availability sessions since August 1993. In 2000, the BCT hosted an Availability Session in conjunction with the MI Proposed Plan public comment meeting. These sessions provide an opportunity for the public to communicate one-in-one with representatives of the Depot, EPA, TDEC, Memphis/Shelby County Health Department, Corps of Engineers, contractors, Agency for Toxic Substances and Disease Registry, Memphis Light, Gas and Water, and other agencies involved with specific aspects of the Depot's environmental restoration program.

**TABLE 3-1**  
**POTENTIAL CONTAMINATION SITES ASSOCIATED WITH OPERABLE UNITS**

INSTALLATION RESTORATION NUMBER	DSERTS SITE NUMBER <sup>(a)</sup>	MDRA PARCEL NUMBER	DESCRIPTION	CURRENT DISPOSITION OF SITE
<b>Operable Unit 1: Dunn Field</b>				
1	1	36 16	Mustard and Lewsite Training Sets (9 sets) Burial Site (1955)	ER complete/ FS
2	2	36 1	Ammonia Hydroxide (7 pounds) and Acetic Acid (1 gallon) Burial (1955)	FS
3	3	36 2	Mixed Chemical Burial Site (orthotoluidine dihydrochloride) (1955)	FS
4	4	36 3	POL Burial Site (thirteen 55-gallon drums of oil grease and paint)	FS
4 1	90	36 3	POL Burial Site (thirty-two 55-gallon drums of oil grease and thinner) (1955)	FS
5	5	36 4	Methyl Bromide Burial Site A (3 cubic feet) (1955)	FS
6	6	36 20	40,037 units ointment (eye) Burial Site (1955)	FS
7	7	36 5	Nitric Acid Burial Site (1,700 quart bottles) (1954)	FS
8	8	36 6	Methyl Bromide Burial Site B (3,768 1-gallon cans) (1954)	FS
9	9	36 17	Ashes and Meta' Burial Site (burning pit refuse) (1955)	FS
10	10	36 21	Solid Waste Burial Site (near MW-10) (metal, glass, trash etc)	FS
11	11	36 7	Trichloroacetic Acid Burial (1,433 1-ounce bottles) (1965)	FS
12 & 12 1	12	36 8	Sulfuric and Hydrochloric Acid Burial (1967)	FS
13	13	36 9	Mixed Chemical Burial (Acid, 900 pounds unnamed solids 8,100 pounds)	FS
14	14	36 22	Municipal Waste Burial Site B (near MW-12) (food, paper products)	FS
15	15	36 23	Sodium Burial Sites (1968)	FS
15 1	91	36 23	Sodium Phosphate Burial (1968)	FS
15 2	92	36 23	14 Burial Pits Na <sub>2</sub> PO <sub>4</sub> sodium acid medical supplies, and chlorinated lime	FS
16	16	36 10	Unknown Acid Burial Site (1969)	FS
16 1	93	36 10	Acid, date unknown	FS
17	17	36 11	Mixed Chemical Burial Site C (1969)	FS
18	18	36 30	Plane Crash Residue (Dunn Field)	FS
19	19	36 24	Former Tear Gas Canister Burn Site (Dunn Field)	FS
20	20	36 25	Probable Asphalt Burial Site (Dunn Field)	FS
21	21	36 26	XXCC-3 Burial Site (Dunn Field)	FS
22	22	36 30	Hardware Burial Site (nuts and bolts) (Dunn Field)	FS
23	23	36 30	Construction Debris and Food Burial Site (Dunn Field)	FS
24	24	36 29	Former Burn Site (1946)	ER complete /FS
50	50	36 27	Dunn Field Northeastern Quadrant Drainage Ditch	FS
60	60	36 14	Pistol Range Impact Area/Bullet Stop	ER
61	61	36 28	Buried Drain Pipe (Northwestern Quadrant of Dunn Field)	FS
62	62	36 12/36 13	Bauxite Storage (Northeastern Quadrant of Dunn Field)	FS
63	63	36 30	Fluorspar Storage (Southeastern Quadrant of Dunn Field)	FS
64	64	36 29	Bauxite Storage (Southwestern Quadrant of Dunn Field) (1942 to 1972)	FS
85	85	36 14	Old Pistol Range Building 1184/Temporary Pesticide Storage	ER
86	86	36 18/36 19	Food Supplies (Dunn Field)	FS
<b>Operable Unit 2: Southwestern Quadrant, Main Installation</b>				
27	27	24 1	Former Recoupment Area (Building 873)	RD
29	29	35 2	Former Underground Waste Oil Storage Tank	ER complete/ RD
30	30	24 3	Paint Spray Booths (2 of 3 total Buildings 770 and 1086)	RD

**TABLE 3-1**  
**POTENTIAL CONTAMINATION SITES ASSOCIATED WITH OPERABLE UNITS**

710 142

INSTALLATION RESTORATION NUMBER	DSERTS SITE NUMBER <sup>(a)</sup>	MDRA PARCEL NUMBER	DESCRIPTION	CURRENT DISPOSITION OF SITE
31	31	35 4	Former Paint Spray Booth (Building 1087)	ER complete/ RD
32	32	35 4	Sandblasting Waste Accumulation Area	ER complete/ RD
33	33	35 4	Sandblasting Waste Drum Storage Area (metal shed south of Building 1088)	ER complete/ RD
34	34	24 3	Building 770 Underground Oil Storage Tanks	RD
40	40	24 3	Safety Kleen Units - 5 of 9 total (all located in Building 770)	RD
41	41	24 3	Satellite Drum Accumulation Areas - 1 of 4 total (vicinity Building 770)	RD
47	47	33 6	Former Contaminated Soil Drum Storage Area (300 feet west of Building 689, removed 1988)	RD
71	71	Multiple	Herbicide (All railroad tracks) (used to clear tracks)	RD
82	82	23 7/23 8	Flammables (Buildings 783 and 793)	RD
84	84	27 2	Flammables, Solvents, Waste Oil etc (Building 972)	RD
87	87	35 2	DDT, banned pesticides (Building 108)	ER complete/ RD
88	88	35 2	POL (Building 1085)	ER complete/ RD
89	89	28 2	Acids (Building 1089)	ER complete/ RD
<b>Operable Unit 3: Southeastern Watershed And Golf Course, Main Installation</b>				RD
25	25	3 8	Golf Course Pond	RD
26	26	3 6	Lake Danielson	RD
30	30	4 4	Paint Spray Booths (1 of 3 total - Building 260)	RD
40	40	4, 19 and 21	Safety Kleen Units - 4 of 9 total units (Buildings 253, 469, 490 and 689)	RD
41	41	4 and 19	Satellite Drum Accumulation Areas - 2 of 4 total areas (Buildings 260 and 469)	RD
48	48	5 2	Former PCB Transformer Storage Area	ER complete/ RD
49	49	17 3	Medical Waste Storage Area	RD
51	51	3 7	Lake Danielson Outlet Ditch	RD
52	52	3 9	Golf Course Pond Outlet Ditch	RD
58	58	4 9	Pesticides Herbicides (Pad 267)	RD
59	59	4 10	Pesticides Cleaners (Building 273)	RD
65	65	7 2	XXCC-3 (Building 249)	RD
66	66	4 11	POL (Building 253)	RD
67	67	4 7	MOGAS (Building 257)	RD
68	68	4 8	POL (Building 263) (20 by 40 feet)	RD
69	69	3 11	2,4-D, M2A1, and M4 Flamethrower Liquid Fuels (surface application)	RD
73	73	Multiple	2,4-Dichlorophenoxyacetic Acid (all grassed areas)	RD
75	75	21 5	Unknown Wastes near Building 689	RD
76	76	21 5	Unknown Wastes near Building 690	RD
77	77	22 2	Unknown Wastes near Buildings 689 and 690	RD
78	78	21 3	Alcohol Acetone Toluene Naphtha, Hydrofluoric Acid Spill	RD
<b>Operable Unit 4: North-Central Area, Main Installation</b>				RD
28	28	32 3	Recoupment Area (Building 865)	RD
35	35	15 2	DRMO Building S308 - Hazardous Waste Storage	RD
36	36	15 5	DRMO Hazardous Waste Concrete Storage Pad	RD
37	37	15 5	DRMO Hazardous Waste Gravel Storage Pad	RD
38	38	15 5	DRMO Damaged/Empty Hazardous Materials Drum Storage Area	RD

**TABLE 3-1**  
**POTENTIAL CONTAMINATION SITES ASSOCIATED WITH OPERABLE UNITS**

710 143

INSTALLATION RESTORATION NUMBER	DSERTS SITE NUMBER <sup>(a)</sup>	MDRA PARCEL NUMBER	DESCRIPTION	CURRENT DISPOSITION OF SITE
39	39	15 5	DRMO Damaged/Empty Lubricant Container Area	RD
41	41	13 4	Satellite Drum Accumulation Area (1 of 4 total - Building 210)	RD
42	42	33 9	Former pentachlorophenol Dip Vat Area	RD
43	43	33 9	Former Underground pentachlorophenol Tank Area	RD
44	44	33 6	Former Wastewater Treatment Unit Area	RD
45	45	33 9	Former Contaminated Soil Staging Area	RD
46	46	33 9	Former pentachlorophenol Pallet Drying Area	RD
53	53	30 2	X-25 Flammable Solvents Storage Area (near Building 925)	RD
54	54	15 6	Main Installation - DRMO East Stormwater Runoff Canal	RD
55	55	15 6	Main Installation - DRMO North Stormwater Runoff Canal	RD
56	56	29 3	Main Installation - West Stormwater Drainage Canal	RD
57	57	12 1	Building 629 Spill Area	RD
70	70	Multiple	POL Various Chemical Leaks (railroad tracks 1 2 3 4, 5, and 6)	RD
71	71	Multiple	Herbicide (all railroad tracks) (used to clear tracks)	RD
72	72	15 6	Waste Oil (DRMO yard) (surface application for dust control)	RD
73	73	Multiple	2,4-Dichlorophenoxyacetic Acid (all grassed areas)	RD
74	74	15 3	Flammables Toxics (West End - Building 319)	RD
79	79	15 4	Fuels, Miscellaneous Liquids Wood, and Paper (Vicinity S702)	RD
80	80	33 9	Fuel and Cleaners Dispensing (Building 720)	RD
81	81	33 7	Fuel Oil AST (Building 765 - removed in 1994)	RD
83	83	30 5	Disposal of Dried Paint Residues - South of Building 949	ER complete/ RD

**Notes:**

2,4-D 2,4-Dichlorophenoxyacetic acid  
 CWM Chemical Warfare material  
 CWMP Chemical Warfare Management Plan  
 DDI 4,4'-Dichlorodiphenyltrichloroethane  
 DRMO Defense and Reutilization Marketing Office  
 ER Early removal  
 IC Institutional Controls  
 MDRA Memphis Depot Redevelopment Agency  
 MOGAS Motor gasoline  
 Na Sodium  
 NFA No further action  
 PCB Polychlorinated biphenyl  
 PO<sub>4</sub> Phosphate  
 POL Petroleum oil, and lubricants  
 PP Proposed Plan  
 RD ROD complete/Remedial design  
 RFA RCRA facility assessment  
 RI/FS Remedial investigation/feasibility study  
 RI Remedial investigation

<sup>a</sup> Defense Site Environmental Restoration Tracking System (DoD Database)

**TABLE 3-2  
SPILL RESPONSE SUMMARY**

BUILDING	DATE	SPILLED MATERIAL	QUANTITY	INSIDE/ OUTSIDE	LOCATION/COMMENTS	ACTION TAKEN
239	4/14/94	Motor oil	1 quart	Inside	Replenish	Absorbent applied. Product taken to DRMO for disposal.
251	1/20/95	Oil	0.5 gallon	Outside	West end	Absorbent applied. Product taken to DRMO for disposal.
254	3/20/95	Diesel	5 gallons	Outside	Southwest corner (tank)	Absorbent applied. Product taken to DRMO for disposal.
257	4/2/94	Gasoline	1-2 gallons	Outside	Gas station. Product overflowed from tank vent while being filled.	Soil was excavated and taken to Lorton fired to incinerator.
257	8/11/93	Gasoline	4 gallons	Outside	Gas station. USF overflowed through vent pipe while being filled.	Absorbent applied. Soil contained and taken to DRMO for disposal.
257	8/21/93	Gasoline	4 gallons	Outside	Main tank sprayed gas out of pressure valve.	Absorbent applied. Product taken to DRMO for disposal.
309	10/1/91	Dielectric fluid (non-PCB)	<1 gallon	Outside	Leaking transformer West of Building 309 in DRMO yard	Absorbed by soil-in pads. Products to DRMO for disposal.
309	12/2/91	Leaking compressed solvent	30 gallons	Outside	On R Street. Southwest of Building 299	Absorbent applied. Contaminated material excavated, contained and taken to DRMO for disposal.
343	2/5/93	Hydraulic fluid	6 gallons	Outside	Section 3 - North deck	Absorbent applied. Product taken to DRMO for disposal.
359	8/27/93	Sulfuric acid	1 pint	Inside	Section 2 - Charging station, battery banked over.	Product neutralized, contained and taken to DRMO for disposal.
449	7/27/93	Lube oil	<55 gallons	Outside	North deck	Absorbent applied. Product taken to DRMO for disposal.
449	4/7/95	Hydraulic fluid	1 gallon	Outside	Section 3 - West side deck	Absorbent applied. Product taken to DRMO for disposal.
469	12/1/93	Transformer oil containing PCBs	5 pints	Inside	South side door on wall down to floor. Some product was absorbed by concrete on wall and floor.	Absorbent applied. Product taken to DRMO for disposal.
489	6/10/93	Sulfuric acid	2 gallons	Outside	Section 5 - outside between Buildings 489 and 490. Truck selected for removal over on paved drive.	Product neutralized, contained and taken to DRMO for disposal.
489	11/5/95	80W/90 oil	1 gallon	Outside	Section 4 - North deck	Absorbent applied. Product taken to DRMO for disposal.
490	6/1/94	Sulfuric acid	1 quart	Inside	Section 5	Product neutralized, contained and taken to DRMO for disposal.
490	9/27/95	Cleaner/degreaser	1 gallon	Inside	South deck - Leaking containers inside truck	Absorbent applied. Product taken to DRMO for disposal.

**TABLE 3-2**  
**SPILL RESPONSE SUMMARY**

BUILDING	DATE	SPILLED MATERIAL	QUANTITY	INSIDE/ OUTSIDE	LOCATION/COMMENTS	ACTION TAKEN
490	12/15/95	Sulfuric acid	1 gallon	Inside	Section 5 - Southwest side	Product neutralized, containerized and taken to DRMO for disposal
520	8/1/99	Hydraulic fluid	1 gallon	Inside	Snatch dock, Section 2, Door 2 - fork lift here	Absorbent applied. Product taken to DRMO for disposal.
529	8/1/99	Hydraulic fluid	2 quarts	Outside	North dock - Loose hose on forklift	Absorbent applied. Product taken to DRMO for disposal.
549	2/25/94	Hydraulic fluid	1 gallon	Outside	Snatch side at Door 9 on road	Absorbent applied. Product taken to DRMO for disposal.
549	4/7/94	Hydraulic fluid	5 gallons	Outside	Section 3 - Loading dock	Absorbent applied. Product taken to DRMO for disposal.
560	12/10/91	Sulfuric acid	<1 gallon	Inside	Section 3 - Battery cell charger	Product neutralized, containerized and taken to DRMO for disposal.
560	10/17/95	Aqueous film forming foam	5 gallon	Inside	Section 3 - West side wall	Absorbent applied. Product taken to DRMO for disposal.
560	11/14/95	Aqueous film forming foam	15 gallons	Inside	Section 3 - Cargo Door 10	Absorbent applied. Product taken to DRMO for disposal.
629	4/23/90	Nitric acid	6 gallons	Inside	Section 1	Product neutralized, containerized and taken to DRMO for disposal.
629	6/24/94	Formaldehyde	2 pails	Outside	North side on C Street	Absorbent applied. Product taken to DRMO for disposal.
649	5/16/90	Paint, blue oil, insecticide, oiler oil	3 pails	Outside	Loading containers near the east end dumpster	Absorbent applied. Product to comply for disposal.
649	8/7/95	Hydraulic fluid	1 gallon	Inside	Section 5 - Southwest and Northwest corner	Absorbent applied. Product taken to DRMO for disposal.
650	3/18/93	Battery acid, hydraulic fluid	<1 gallon	Outside	South corner in street	Product neutralized, containerized and taken to DRMO for disposal.
670	5/14/90	Battery electrolyte	10 gallons	Outside	6th Street and Building 670	Product neutralized, containerized and taken to DRMO for disposal.
670	8/7/95	Hydraulic fluid	1 gallon	Inside	Section 1 - North side aisle	Absorbent applied. Product taken to DRMO for disposal.
685	4/16/92	Sulfuric acid and water	3 gallons	Inside	Battery charging station	Product neutralized, containerized and taken to DRMO for disposal.
689	5/6/90	Nitric acid	1 pail	Inside	Section 5 - Heat Exchanger	Product neutralized, containerized and taken to DRMO for disposal.
689	1/6/91	Corrosion removing compound	2 gallons	Outside	Section 5 - door 8	Absorbent applied. Product taken to DRMO for disposal.

**TABLE 3-2  
SPILL RESPONSE SUMMARY**

BUILDING	DATE	SPILLED MATERIAL	QUANTITY	INSIDE/ OUTSIDE	LOCATION/COMMENTS	ACTION TAKEN
689	7/17/92	Hydraulic fluid	2 gallons	Inside	Section 4 - North dock	Absorbent applied. Product taken to DIRM for disposal.
689	1/7/93	Carbon removing compound	1 gallon	Inside	Section 5 - Loading drum inside trailer	Absorbent applied. Product taken to DIRM for disposal.
689	9/30/93	Chlorosulfonate wing compound	<55 gallons	Inside	Bay 6 - Loading containers	Absorbent applied. Product taken to DIRM for disposal.
689	6/12/94	Truck tire	40 gallons	Outside	Section 4, Northwest end, Door 3 - inverted	Absorbent applied. Product taken to DIRM for disposal.
689	1/17/95	Oil	2.5 gallons	Outside	Section 3 - Back door	Absorbent applied. Product taken to DIRM for disposal.
689	8/15/95	Hydraulic fluid	2 gallons	Outside	Section 5 - Door 8	Absorbent applied. Product taken to DIRM for disposal.
689	10/12/95	Sulfuric acid	1 gallon	Inside	Section 5 - Southwest side at Door 34	Product neutralized, containerized and taken to DIRM for disposal.
689	11/6/95	Hydraulic fluid	2 gallons	Outside	Section 5 - West dock, Door 8	Absorbent applied. Product taken to DIRM for disposal.
689	11/15/95	Hydraulic fluid	1.25 gallons	Inside	Section 3 - Southwest corner	Absorbent applied. Product taken to DIRM for disposal.
689	11/16/95	Hydraulic fluid	0.3 gallon	Inside	Northeast corner	Absorbent applied. Product taken to DIRM for disposal.
689	2/12/94	Turbo engine oil	10 gallons	Outside	West side loading dock	Absorbent applied. Product taken to DIRM for disposal.
689	3/21/94	Sulfuric acid	5 quart	Outside	West side loading dock	Product neutralized, containerized and taken to DIRM for disposal.
737	11/5/93	Mineral oil <1 ppm PCB	50 gallons	Outside	West side	Absorbent applied. Soil excavated, containerized and all products taken to DIRM for disposal.
770	7/29/90	Mineral oil containing PCBs (>50 ppm, <500 ppm)	50 gallons	Outside	West side, 14.5 cubic yards of contaminated soil excavated. Contaminated samples taken	Absorbent applied. Soil excavated, containerized and all products taken to DIRM for disposal.
770	11/8/91	Permethrin	<55 gallons	Outside	55-gallon drum ruptured on the West side	Absorbent applied. Soil excavated, containerized and all products taken to DIRM for disposal.
835	3/29/93	Battery acid	9 gallons	Inside	Section 3	Product neutralized, containerized and taken to DIRM for disposal.

**TABLE 3-2**  
**SPILL RESPONSE SUMMARY**

BUILDING	DATE	SPILLED MATERIAL	QUANTITY	INSIDE/ OUTSIDE	LOCATION/COMMENTS	ACTION TAKEN
835	5/25/91	Hydrofluoric acid	5 gallons	Inside	Section 4 - R&D stock area	Product neutralized, contained and taken to DRMO for disposal.
835	7/1/91	Anomously toxic	6 gallons	Inside	Section 2	Neutralized spill with special acidic soil. Absorbent applied. Product contained and taken to DRMO for disposal.
835	10/2/91	Sulfuric acid	15 gallons	Inside	Section 3 - Corrosive section	Product neutralized, contained and taken to DRMO for disposal.
835	11/19/91	Butyric acid	6 gallons	Inside	Section 3	Product neutralized, contained and taken to DRMO for disposal.
835	11/19/91	Sulfuric acid	5 gallons	Inside	Section 4	Product neutralized, contained and taken to DRMO for disposal.
835	3/1/92	Malonic acid	1.5 gallon	Inside	Section 3	Product neutralized, contained and taken to DRMO for disposal.
835	1/15/93	Hydraulic fluid	5 gallon	Inside	R&D location - Line on stock selective bottle	Absorbent applied. Product taken to DRMO for disposal.
835	2/22/93	Orthochloric resin	1 pint	Inside	Section 3 - Packing area. Glass bottle fell and broke.	Absorbent applied. Product taken to DRMO for disposal.
835	6/28/93	Calcium Hypochlorite	5 pounds	Inside	Section 2 - Oxidizer section	Product swept, contained and taken to DRMO for disposal.
835	7/22/93	Hydrochloric acid, granular	Several pounds	Inside	Section 5 - 25 each dot aged 40 lbs bags	Product swept, contained and taken to DRMO for disposal.
835	8/11/93	Cleaning compound solvent	2.5 gallons	Inside	Section 1	Product neutralized, contained and taken to DRMO for disposal.
835	10/1/93	Hydrofluoric acid	1 gallon	Inside	Section 1 - Corrosive section	Product neutralized, contained and taken to DRMO for disposal.
835	11/12/93	Xylene	1 gallon	Inside	Section 5	Absorbent applied. Product taken to DRMO for disposal.
835	1/1/94	Sulfuric acid	10 gallons	Inside	Section 3 - Corrosive section	Product neutralized, contained and taken to DRMO for disposal.
835	4/5/94	Sterilizer solution	5 gallon	Inside	Section 1 - Caps impaled on 4 1-liter bottles.	Product neutralized, contained and taken to DRMO for disposal.
835	4/5/94	Ethanol	.5 gallon	Inside	Section 1	Absorbent applied. Product taken to DRMO for disposal.
835	4/15/94	Ethanol	2 gallons	Inside	4 each 1-gallons jugs spilled about 1/2 gallons each	Absorbent applied. Product taken to DRMO for disposal.



TABLE 3-2  
SPILL RESPONSE SUMMARY

BUILDING	DATE	SPILLED MATERIAL	QUANTITY	INSIDE/ OUTSIDE	LOCATION/COMMENTS	ACTION TAKEN
835	6/9/94	Microkryle	1 quart	Inside	Section 3	Absorbent applied. Product taken to DRMO for disposal
835	8/16/94	Cleaning compound solvent	2.5 gallons	Outside	West loading dock	Product neutralized, contained and taken to DRMO for disposal
835	11/2/94	Phosphoric acid	2 quarts	Inside	Section 5	Product neutralized, contained and taken to DRMO for disposal
835	7/5/95	Sulfuric acid	2.5 gallons	Inside	Section 3	Product neutralized, contained and taken to DRMO for disposal
875	5/26/95	Transmission fluid	10 gallons	Outside	Section 4 - West side	Absorbent applied. Product taken to DRMO for disposal
875	4/17/97	White oil	Several quarts	Inside	North side	Absorbent applied. Product taken to DRMO for disposal
875	11/3/94	Lube oil	3 gallons	Inside	North side	Absorbent applied. Product taken to DRMO for disposal
875	2/11/99	Tetrahydrofuran	60 gallons	Inside/Outside	Section 2 and outside - West end gravel	Absorbent applied. Soil excavated, contained and all products taken to DRMO for disposal
875	12/7/90	Cleaning compound solvent	55 gallons	Inside	Section 1 - East side	Absorbent applied. Product taken to DRMO for disposal
875	3/9/91	Lube oil	25 gallons	Inside	Section 2	Absorbent applied. Product taken to DRMO for disposal
875	8/16/91	Hydraulic fluid	2 gallons	Outside	Section 1	Absorbent applied. Product taken to DRMO for disposal
875	11/18/91	Cleaning compound solvent	10 gallons	Inside	Section 1	Absorbent applied. Product taken to DRMO for disposal
875	11/18/91	Cleaning compound solvent	20 gallons	Inside	Section 1	Absorbent applied. Product taken to DRMO for disposal
875	11/26/91	Lug oil	55 gallons	Outside	Section 7 - West side	Absorbent applied. Soil excavated, contained and all products taken to DRMO for disposal
875	11/26/91	Cleaning compound solvent	18 gallons	Outside	Section 3	Absorbent applied. Soil excavated, contained and all products taken to DRMO for disposal
875	2/23/92	Descaling compound	10 gallons	Inside	Section 6 - loading dock	Absorbent applied. Product taken to DRMO for disposal

TABLE 3-2  
SPILL RESPONSE SUMMARY

BUILDING	DATE	SPILLED MATERIAL	QUANTITY	INSIDE/ OUTSIDE	LOCATION/COMMENTS	ACTION TAKEN
873	7/2/92	Lube oil	55 gallons	Outside	Sealant at corner	Absorbent applied. Soil excavated, containerized and all products taken to DRMO for disposal
873	7/12/93	Lube oil	25 gallons	Outside	G Street at 1501 Street, Northwest of Building 873	Absorbent applied. Product taken to DRMO for disposal
873	7/21/93	Corrosion removing compound	1.5 gallon	Inside	Section 6 - drains covered	Product neutralized, containerized and taken to DRMO for disposal
873	8/16/93	Corrosion removing compound	75 gallon	Inside	Section 5 - Leaking drain	Product neutralized, containerized and taken to DRMO for disposal
873	10/25/93	Sulfuric acid	2 gallons	Inside	Section 2 - West side	Product neutralized, containerized and taken to DRMO for disposal
873	11/29/93	Hydrochloric acid	3 gallons	Inside	Section 6 - Leaking bottles	Product neutralized, containerized and taken to DRMO for disposal
873	4/7/94	Hydrochloric acid	.5 gallon	Inside	Section 5	Product neutralized, containerized and taken to DRMO for disposal
873	6/26/94	Tinoline benzoin	3 pints	Inside	Section 2	Absorbent applied. Product taken to DRMO for disposal
873	7/11/94	Ethylene glycol	55 gallons	Outside	Northwest end	Absorbent applied. Soil excavated, containerized and all products taken to DRMO for disposal
873	8/11/94	Mechanical	3 pints	Inside	Section 2 - Must of spill evaporated	Absorbent applied. Product taken to DRMO for disposal
873	8/20/94	Transmission fluid	5 gallons	Inside/Outside	Forbidden line broke in Building 873 Section 3 Forklift driven through Section 2 across X03 to Building 770.	Absorbent applied. Product taken to DRMO for disposal
875	3/6/93	Paraffin	2 gallons	Outside/Inside	Inside Roadway gutter 2 drums full and leaked	Absorbent applied. Product taken to DRMO for disposal
875	12/6/95	Oil/Absorbent	2 quarts	Outside	East side on 1501 Street	Absorbent applied. Product taken to DRMO for disposal
972	10/5/93	Hydraulic fluid	34 gallons	Outside	On the road to Building 770	Absorbent applied. Product taken to DRMO for disposal
972	3/14/95	Diesel	3 gallons	Outside	West side	Absorbent applied. Product taken to DRMO for disposal
995	9/13/93	Gasoline	10 gallons	Outside	Northwest of Building 995 on road. Truck tank full.	Absorbent applied. Product taken to DRMO for disposal

**TABLE 3-2  
SPILL RESPONSE SUMMARY**

BUILDING	DATE	SPILLED MATERIAL	QUANTITY	INSIDE/ OUTSIDE	LOCATION/COMMENTS	ACTION TAKEN
B Street	5/2/94	Sulfuric Acid	10 gallons	Outside	South of Gate 20 - West of 200/308	Product neutralized. Soil excavated, containerized and all products taken to DIRM for disposal.
Gate 1	10/28/94	Diesel fuel	2 gallons	Outside	Gate 1 on street	Absorbent applied. Product taken to DIRM for disposal.
Gate 1	1/14/94	Diesel fuel	5 gallons	Outside	Gate 1 on street	Absorbent applied. Product taken to DIRM for disposal.
Gate 1	1/22/95	Mach oil	4 gallons	Outside	Gate 1 parking lot	Absorbent applied. Product taken to DIRM for disposal.
Gate 15	9/12/95	Hydraulic fluid	1.25 gallons	Outside	A Street and 11th Street - Noods through Gate 15 to Dixon Field	All content applied. Product taken to DIRM for disposal.
X02	6/3/94	Mineral oil < 1 ppm PCB	10 gallons	Outside	Between 771 and 877 - transformer fell off truck	Absorbent applied. Product taken to DIRM for disposal.
X10	7/6/93	Dipyl acetate/Naphtha amide	< 1 gallon of each	Outside	Damaged, leaking 55-gallon drums	Absorbent applied. Soil excavated, containerized and all products taken to DIRM for disposal.
X20	5/7/90	Cleaning compound solvent	Unknown - Small amount of product leaked from each of 12 drums	Outside	Leaking 55-gallon drums	Absorbent applied. Soil excavated, containerized and all products taken to DIRM for disposal.
X27	5/17/94	Hydraulic fluid	25 gallons	Outside	On 27th Street from 925 to 972	Absorbent applied. Soil excavated, containerized and all products taken to DIRM for disposal.
X30	4/19/94	Hydraulic fluid	5 gallons	Outside	On Street from 1089 to Gate 15	Absorbent applied. Product taken to DIRM for disposal.

**TABLE 3-3  
SOURCES OF POTENTIAL CONTAMINATION**

710 151

FACILITY/PROPERTY	SUBPARCEL NUMBER	INSTALLATION RESTORATION SITE	FACILITY USE	SOURCE OF POTENTIAL CONTAMINATION <sup>(a)</sup>
Building 737, Pest Control Shop	33 9(4)	42/43/45/46	Pest control	Storage and mixing of pesticides and herbicides in the building storage of aluminum phosphide waste outside of the building
Building 770, Facility Equipment Maintenance Shop	24 3(4)	30/34/40/41	Light and heavy industrial	POL drum storage area fork lift waste station and residue from sandblasting and painting

**Notes:**

PCB Polychlorinated biphenyl  
POL Petroleum, oil, and lubricants

(a) These Sources of Potential Contamination are in addition to those listed as Installation Restoration Sites in Table 3.1

**LE 3-4  
UNDERGROUND STORAGE TANK SUMMARY**

SUBPARCEL NO.	LOCATION	YEAR INSTALLED	SIZE (gals)	SUBSTANCE STORED	STATUS	FUTURE ACTIONS
4 11	Building 253, north side	1952	5,000	Heating oil	Removed July 1996	NA
4 6	Building 254, northwest side	NA	1,100	Gasoline	Removed December 1989	NA
4 7	Building 257	1942	12,000	Gasoline	Removed 1986	NA
4 7	Building 257	1942	12,000	Gasoline	Removed 1986	NA
4 7	Building 257	1951	20,000	Gasoline	Removed 1986	NA
4 6	Building 257, south side	1984	18,000	Gasoline	Removed 1998	NA
4 6	Building 257, south side	1984	20,000	Gasoline	Removed 1998	NA
4 7	Building 257, west side	1951	2,580	Gasoline	Removed December 1989	NA
14 2	Building 209, north side	1942	12,000	Heating oil	Removed July 1994	NA
14 2	Building 209, north side	1942	500	Heating oil	Removed July 1995	NA
14 2	Building 209, north side	1942	500	Blower blow-down water	Removed July 1995	NA
15 6	Building 319, north side	1988	4,000	Heating oil	Removed July 1994	NA
17 2	Building 359, north side	1942	12,000	Heating oil	Closed in place July 1994	NA
17 2	Building 359, north side	1942	500	Heating oil	Closed in place September 1995	NA
17 2	Building 359, north side	1942	500	Blower blow-down water	Closed in place July 1994	NA
17 2	Building 359/4	1979	1,000	Heating oil	Removed 1993	NA
17 2	Building 359/4	1942	500	Diesel Fuel	Removed 1993	NA
24 3	Building 770, east side	1951	10,000	Heating oil	Removed July 1994	NA
24 3	Building 770, west side	NA	440	Gasoline	Removed December 1989	NA
24 3	Building 770, west side	1951	1,000	Used motor oil	Removed December 1989	NA

1 of 2

**Defense Distribution Center (Memphis)**

Rev 1 BRAC Cleanup Plan Version 6

September 2002

# TABLE 3-4 UNDERGROUND STORAGE TANK SUMMARY

SUBPARCEL NO.	LOCATION	YEAR INSTALLED	SIZE (gals)	SUBSTANCE STORED	STATUS	FUTURE ACTIONS
24 3	Building 770, west side	1951	1,000	Used motor oil	Removed December 1989	NA
25 2	Building 875, east side	1950	1,000	Heating oil	Closed in place July 1994	NA
33 9	Building 737, south side	1942	12,000	Pentachlorophenol and dioxin	Removed September 1985	NA
33 9	Building 737, west side	1986	1,000	Rodenticide pesticide/herbicide insecticide rinsate	Closed in place September 1995	NA
33 9	Building 754	1956	200	Gasoline	Removed January 1986	NA
33 11	Building 756, west side	1987	1,000	Diesel fuel	Removed July 1994	NA
35 2	Building 1085, east side	1942	1,000	Waste oil	Removed December 1989 (found and removed during 2000 Removal Action)	NA
35 2	Building 1085	1950	100	Hydraulic fluid	Closed in place July 1995	NA

## Notes:

EBS Environmental baseline survey  
 NA Not applicable  
 UST Underground storage tank

Defense Distribution Center (Memphis)

Rev 1 BRAC Cleanup Plan Version 6

September 2002

**TABLE 3-5  
ABOVEGROUND STORAGE TANK SUMMARY**

STUDY AREA NO.	LOCATION	YEAR INSTALLED	SIZE (gals)/ TYPE	SUBSTANCE STORED	STATUS	FUTURE ACTIONS
4	Building 257	1992	1,000/NA	Gasoline	Building demolished 1999	NA
4	Building 257	1992	1 000/NA	Diesel fuel	Building demolished 1999	NA
24	Building 770	1951	11,155/NA	Diesel fuel	Removed July 1994	NA
24	Building 770	1951	11,155/NA	Fuel oil	Removed July 1994	NA
33	Building 720	1942	12 000/NA	Diesel	Removed 1997	NA
33	Building 756	1994	1,000/NA	Diesel fuel	Active	Removal proposed 1998

**Notes:**

NA Not applicable  
TBD To be determined

# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x, y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDATION/ MITIGATION
<b>Environmental Condition Category 1</b>					
1 1(1)	32 10	0 01	Sentry Station/Gate 1	This subparcel is associated with the Sentry Station at Gate 1. There has been no documented release or disposal of hazardous substances or petroleum products nor has there been migration from an adjacent property of hazardous substances or petroleum products. The EPA concurred via letter dated March 13, 1997 with the CERFA letter report Category 1 designation for this subparcel.	No remediation necessary. FOST signed September 2001. Deed signed May 2002. Property transferred.
1 2(1)	32 13	0 01	Sentry Station/Gate 2	This subparcel is associated with Sentry Station at Gate 2. There has been no documented release or disposal of hazardous substances or petroleum products nor has there been migration from an adjacent property of hazardous substances or petroleum products. The EPA concurred via letter dated March 13, 1997 with the CERFA letter report Category 1 designation for this subparcel.	No remediation necessary. FOST signed September 2001. Deed signed May 2002. Property transferred.
1 3(1)	32 16	<0 01	Waiting Shelter/ Building 129	This subparcel is associated with Building 129. There has been no documented release or disposal of hazardous substances or petroleum products nor has there been migration from an adjacent property of hazardous substances or petroleum products. The EPA concurred via letter dated March 13, 1997 with the CERFA letter report Category 1 designation for this subparcel.	No remediation necessary. FOST signed September 2001. Deed signed May 2002. Property transferred.
1 4(1)	31 13	<0 01	Waiting Shelter/ Building 139	This subparcel is associated with Building 139. There has been no documented release or disposal of hazardous substances or petroleum products nor has there been migration from an adjacent property of hazardous substances or petroleum products. The EPA concurred via letter dated March 13, 1997 with the CERFA letter report Category 1 designation for this subparcel.	No remediation necessary. FOST signed September 2001. Deed signed May 2002. Property transferred.
1 5(1)	34 12	0 31	Building 144	This subparcel is associated with Building 144. There has been no documented release or disposal of hazardous substances or petroleum products nor has there been migration from an adjacent property of hazardous substances or petroleum products. The EPA concurred via letter dated March 13, 1997 with the CERFA letter report Category 1 designation for this subparcel.	No remediation necessary. FOST signed September 2001. Deed signed May 2002. Property transferred.
1 6(1)	32 13	0 02	Building 145	This subparcel is associated with Building 145. There has been no documented release or disposal of hazardous substances or petroleum products nor has there been migration from an adjacent property of hazardous substances or petroleum products. The EPA concurred via letter dated March 13, 1997 with the CERFA letter report Category 1 designation for this subparcel.	No remediation necessary. FOST signed September 2001. Deed signed May 2002. Property transferred.



## SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDATION/ MITIGATION
1 7(1) Demolished 1999	31 10	<0.01	Waiting Shelter/ Building 155	This subparcel is associated with Building 155. There has been no documented release or disposal of hazardous substances or petroleum products nor has there been migration from an adjacent property of hazardous substances or petroleum products. The EPA concurred via letter dated March 13, 1997 with the CERFA letter report Category 1 designation for this subparcel.	No remediation necessary. FOST signed September 2001. Deed signed February 2002. Property transferred.
2 1(1)	34 6	0.11	Building 176	This subparcel is associated with Building 176. There has been no documented release or disposal of hazardous substances or petroleum products nor has there been migration from an adjacent property of hazardous substances or petroleum products. The EPA concurred via letter dated March 13, 1997 with the CERFA letter report Category 1 designation for this subparcel.	No remediation necessary. FOST signed February 2001. Deed signed September 2001. Property transferred.
2 2(1)	34 6	0.03	Building 178	This subparcel is associated with Building 178. There has been no documented release or disposal of hazardous substances or petroleum products nor has there been migration from an adjacent property of hazardous substances or petroleum products. The EPA concurred via letter dated March 13, 1997 with the CERFA letter report Category 1 designation for this subparcel.	No remediation necessary. FOST signed February 2001. Deed signed September 2001. Property transferred.
2 3(1)	34 5	0.11	Building 179	This subparcel is associated with Building 179. There has been no documented release or disposal of hazardous substances or petroleum products nor has there been migration from an adjacent property of hazardous substances or petroleum products. The EPA concurred via letter dated March 13, 1997 with the CERFA letter report Category 1 designation for this subparcel.	No remediation necessary. FOST signed February 2001. Deed signed September 2001. Property transferred.
2 4(1)	34 5	0.11	Building 181	This subparcel is associated with Building 181. There has been no documented release or disposal of hazardous substances or petroleum products nor has there been migration from an adjacent property of hazardous substances or petroleum products. The EPA concurred via letter dated March 13, 1997 with the CERFA letter report Category 1 designation for this subparcel.	No remediation necessary. FOST signed February 2001. Deed signed September 2001. Property transferred.
2 5(1)	34 4	0.11	Building 183	This subparcel is associated with Building 183. There has been no documented release or disposal of hazardous substances or petroleum products nor has there been migration from an adjacent property of hazardous substances or petroleum products. The EPA concurred via letter dated March 13, 1997 with the CERFA letter report Category 1 designation for this subparcel.	No remediation necessary. FOST signed February 2001. Deed signed September 2001. Property transferred.
2 6(1)	34 4	0.11	Building 184	This subparcel is associated with Building 184. There has been no documented release or disposal of hazardous substances or petroleum products nor has there been migration from an adjacent property of hazardous substances or petroleum products. The EPA concurred via letter dated March 13, 1997 with the CERFA letter report Category 1 designation for this subparcel.	No remediation necessary. FOST signed February 2001. Deed signed September 2001. Property transferred.

2 of 73

# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDIALTION/ MITIGATION
Please see Category 4 descriptions for the following subparcels that reverted from Category 1 to Category 4 based on ICs 3 1 3 2 3 3 4 1 4 3 6 3 8 2 8 3 8 5 9 4 10 4 13 1 13 2 13 3 13 4 14 1 15 1 16 2 21 1 23 1 23 2 23 3 23 4 23 5 29 1 30 4 33 1 33 2 33 4 and 33 10					
Please see Category 6 descriptions for the following subparcels that reverted from Category 1 to Category 6 based on groundwater contamination beneath the subparcel 4 2 4 11 8 4 9 2 9 5 10 6 11 3 11 4 17 1 33 3 33 5 and 34 1					
<b>Environmental Condition Category 2: No subparcels designated Category 2</b>					
<b>Environmental Condition Category 3</b>					
18(3)	33 12	17 68	Buildings 143 146 and 147 north and south parking lots and surrounding open land area	This subparcel is associated with the parking lots and open land area surrounding Building 144 as well as Buildings 143 146 and 147. Both the north and south parking lots in this subparcel are the location of former housing units. These housing units were demolished. This subparcel includes grassed areas that were historically sprayed with pesticides and herbicides. A 4 gallon motor oil spill was reported in 1995 for the Gate 1 parking lot. In addition, a diesel spill was reported in 1993 at Gate 1. The Spill Team responded took the appropriate action and disposed of all residues in accordance with federal, state and local regulations. The MI RI baseline risk assessment concluded that FU 6 which contains Parcels 1 4 and 5 was suitable for industrial reuse. The residential surrogate site that indicated restricted use was located in Parcel 4. Parcel 1 was used in the past for administrative and employee parking purposes and does not contain any long-term operational areas. The MI RI Report indicated levels that are not inconsistent with unrestricted use. The BCT concurred that a hazardous substance release occurred as a result of pesticide application during routine grounds maintenance, but not at concentrations that require remediation. On January 17, 2001 the BCT concurred that Parcel 1 8 change from Category 7 to Category 3. A FOST for this subparcel was signed in September 2001. The deed to the City of Memphis Police Department for 4 67 acres was signed on February 6 2002. The deed to the DRC for 13 36 acres was signed on May 6 2002.	No further remediation necessary. FOST signed September 2001. Deeds signed February and May 2002. Property transferred.
36 12(3)	23 11	0 92	Dunn Field	This subparcel is associated with Site 62 (Bauxite Storage) one above-grade covered bauxite pile. The pile was removed in 1998. The Dunn Field RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for residential or industrial reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 3.	No remediation necessary.
36 13(3)	27 11	3 3	Dunn Field	This subparcel is associated with Site 62 (Bauxite Storage) two above-grade covered bauxite piles. The piles were removed in 1998. The Dunn Field RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for residential or industrial reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 3.	No remediation necessary.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL	LOCATION (x y coordinates)	APPROXIMATE SIZE (acres)	FACILITY	BASIS	REMEDIATION/ MITIGATION
36 24(3)	28 11	0 08	Dunn Field	This subparcel is associated with Site 19 (Former Tear Gas Canister Burn Site) where sanitary wastes construction debris smoke pots and tear gas canisters were disposed of from 1955 to 1960. The Dunn Field RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for residential or industrial reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 3.	No remediation necessary
36 25(3)	30 10	0 34	Dunn Field	This subparcel is associated with Site 20 (Asphalt Burial Site) where asphalt and roofing gravel were dumped in a surface fill but were reportedly removed in 1981. The Dunn Field RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for residential recreational or industrial reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 3.	No remediation necessary
36 26(3)	31 13	0 51	Dunn Field	This subparcel is associated with Site 21 (XXCC-3 Burial Site) that consists of two trenches of unknown depths where an unknown amount of XXCC-3 impregnate (used to make clothing less susceptible to the effects of chemical warfare agents) and clothing treated with XXCC-3 impregnate was buried. The Dunn Field RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for residential recreational or industrial reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 3.	No remediation necessary
<b>Environmental Condition Category 4</b>					
2 7(4)	33 6	5 93	Open land area surrounding the military family housing units and garages	This subparcel is associated with the open land area surrounding the former military family housing units and garages in Parcel 2. Four BRAC soil samples were collected and sample results indicated levels of chlorinated hydrocarbon pesticides (dieldrin DDE DDT and gamma-chlordane) above BCT screening criteria. The Depot elected to conduct a removal action at this subparcel to allow for unrestricted reuse. In September 1997 the BCT changed this subparcel to a Category 6 due to the presence of dieldrin and the DRC's high priority for reuse of this subparcel. The Depot completed the removal action in 1998. In May 1999 the BCT concurred that the removal action was complete and to change this subparcel from Category 6 to Category 4 based on the successful completion of this removal action.	Removal action completed in 1998. No further remediation necessary. FOST signed February 2001. Deed signed September 2001. Property transferred.
3 1(4)	32 2	0 01	Building 193	This subparcel is associated with Building 193. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for recreational or industrial reuse but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to maintain a boundary fence around Parcel 3 and to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13 1997 with the CERFA letter report that designated this subparcel Category 1 the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDIAL/ MITIGATION
3 2(4)	31 2	0 10	Building 195	This subparcel is associated with Building 195. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for recreational or industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to maintain a boundary fence around Parcel 3 and to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
3 3(4)	31 2	0 02	Building 196	This subparcel is associated with Building 196. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for recreational or industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to maintain a boundary fence around Parcel 3 and to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
3 4(4)	31 2	0 01	Building 198	This subparcel is associated with Building 198. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for recreational or industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to maintain a boundary fence around Parcel 3 and to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
3 8(4)	32 5	0 23	Golf Course Pond	This subparcel is associated with the golf course pond that receives surface water runoff from the golf course and southeast portion of the MI. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for recreational or industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD calls for remedial action in the form of ICs to maintain a boundary fence around Parcel 3 and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDATION/ MITIGATION
3 9(4)	30 3	0 19	Golf Course Pond Outlet Ditch	Golf Course Pond outlet ditch receives stormwater flow from surrounding areas and intermittent flow from the pond. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for recreational or industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD calls for remedial action in the form of ICs to maintain a boundary fence around Parcel 3 and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
3 10(4)	30 6	0 25	Former pistol range near Hole 9	A 1947 installation map shows a pistol range directly behind where Building 271 now stands near the 9th hole of the golf course. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for recreational or industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD calls for remedial action in the form of ICs to maintain a boundary fence around Parcel 3 and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
4 1(4) Demolished 1999	30 10	0 19	Building 252	This subparcel is associated with Building 252. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
4 3(4)	31 7	0 03	Building 271	This subparcel is associated with Building 271. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIACTION/ MITIGATION
4 7(4) Demolished 1999	28 10	0 25	Buildings 256 and 257	This subparcel is associated with Buildings 256 and 257 and Site 67 (MOGAS - Building 257). The DRC demolished both buildings in 1999 during construction of the entrance boulevard. Building 257 was fumigated in the past. Air sampling conducted during the BRAC sampling effort in the winter of 1997 indicated no human health hazards from fumigation. Several spills were reported for this building including one 2-gallon gasoline spill reported on April 20 1990 leaking tank at gasoline station reported on August 11 1993 and gasoline release from tank pressure tube reported on August 31 1993. The Spill Team responded took the appropriate action and disposed of all residues in accordance with federal state and local regulations. In addition, fuel dispensing and storage have been ongoing at Building 257 since 1942 (two 1 000 gallon ASTs are located at this building and a 2 580-gallon gasoline tank was removed December 1989). Two USTs (18 000 and 20 000 gallons) were removed in 1998 from the open land area south of Bldg 257. In September 1997, the BCT changed this subparcel to a Category 6 due to the scheduled UST removal project. Upon receipt of UST closure approval from TDEC-UST in December 1998 The BCT concurred to change this subparcel from Category 6 to Category 2 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 2 to Category 4 based on implementation of the ICs.	UST closure approval from TDEC-UST received in December 1998 ICs implemented via Master Lease and subsequent FOSLs No further remediation necessary
6 1(4)	28 11	4 4	Open land area surrounding Buildings 250, 349 and 350	This subparcel is associated with the open land area surrounding Buildings 349 350 and 250. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs No further remediation necessary

# **TABLE 3-6** **SUBPARCEL DESCRIPTIONS**

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDATION/ MITIGATION
6 2(4)	29 11	2 8	Building 250	This subparcel is associated with Building 250 and may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. Staining due to acid leaks from batteries in the forklift area was observed during the EBS visual inspection. After the December 1997 BCT decision to change fumigated buildings to Category 1, the BCT conferred and concurred via telephone calls that this subparcel would become a Category 3 based on the cleanup of battery acid. In June 1998, the BCT again concurred to change this subparcel from Category 7 to Category 3, believing no remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
6 3(4)	27 12	2 8	Building 349	This subparcel is associated with Building 349, which may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. In December 1997, the BCT concurred to change this subparcel to Category 1. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
6 4(4)	26 11	2 8	Building 350	This subparcel is associated with Building 350 and may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. Staining due to acid leaks from batteries in the forklift area was observed during the EBS visual inspection. After the December 1997 BCT decision to change fumigated buildings to Category 1, the BCT conferred and concurred via telephone calls that this subparcel would become a Category 3 based on the cleanup of battery acid. In June 1998, the BCT again concurred to change this subparcel from Category 7 to Category 3, believing no remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDATION/ MITIGATION
7 1(4)	29 13	1 5	Open land area surrounding Building 249	This subparcel is associated with the open land area surrounding Building 249. This subparcel contains railroad tracks and gravel areas that historically sprayed with pesticides herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. The Preliminary Risk Evaluation identified this subparcel as exceeding BCT screening criteria. The BCT identified the subparcel for potential removal action and changed the Category 7 to Category 6. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. Therefore no removal action occurred. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 6 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
7 2(4)	29 12	2 8	Building 249	This subparcel is associated with Building 249 that was formerly used as a storage facility for clothing treated with impregnate (XXCC-3), a chemical used as a preventive to the effects of chemical warfare agents on skin. A battery acid spill was reported on April 15 1993 at Building 249 north dock. The Spill Team responded applied sodium bicarbonate and disposed of all residues in accordance with federal state and local regulations. This building may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. After the December 1997 BCT decision to change fumigated buildings to Category 1 the BCT concurred and concurred that this subparcel would become a Category 4 based on the cleanup of the battery acid. In June 1998 the BCT again concurred to change this subparcel from Category 7 to Category 4 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002 the BCT concurred that this subparcel remains Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
8 2(4)	29 15	2 8	Building 229	This subparcel is associated with Building 229 which may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. In December 1997 the BCT concurred to change this subparcel to Category 1. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated October 20 1998 with the CERFA letter report that designated this subparcel Category 1 the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.



# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDATION/ MITIGATION
8 3(4)	29 14	2 8	Building 230	This subparcel is associated with Building 230, which may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. In December 1997, the BCT concurred to change this subparcel to Category 1. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated October 20, 1998, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.
8 5(4)	26 13	2 8	Building 330	This subparcel is associated with Building 330, which may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. In December 1997, the BCT concurred to change this subparcel to Category 1. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated October 20, 1998, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.
9 4(4)	23 12	2 8	Building 449	This subparcel is associated with Building 449, which may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. In December 1997, the BCT concurred to change this subparcel to Category 1. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated October 20, 1998, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.

## SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x, y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL ACTION/ MITIGATION
10 3(4)	17 10	0 25	Spill location between the southern corners of Buildings 550 and 650	This subparcel is associated with a spill location between the southern corners of Buildings 550 and 650. A battery acid and hydraulic fluid spill was reported on March 18, 1993. The Spill Team responded, applied sodium bicarbonate and absorbent and disposed of all residues in accordance with federal, state and local regulations. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
10 4(4)	20 12	2 8	Building 549	This subparcel is associated with Building 549, which may have been fumigated. Also, the west side of the building contains a fumigation chamber. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. In December 1997, the BCT concurred to change this subparcel to Category 1. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated October 20, 1998, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
10 5(4)	19 11	2 8	Building 550	This subparcel is associated with Building 550 and may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. Staining due to acid leaks from batteries in the forklift area was observed during the EBS visual inspection. After the December 1997 BCT decision to change fumigated buildings to Category 1, the BCT concurred to change this subparcel to Category 3 based on the cleanup of battery acid. In June 1998, the BCT again concurred to change this subparcel from Category 7 to Category 3, believing no remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.

# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDATION/ MITIGATION
13 1(4)	33 16	<0.01	Sentry Station/Gate 23	This subparcel is associated with the Sentry Station at Gate 23. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997 with the CERFA letter report that designated this subparcel Category 1 the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
13 2(4)	33 16	<0.01	Sentry Station/Gate 24	This subparcel is associated with the Sentry Station at Gate 24. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997 with the CERFA letter report that designated this subparcel Category 1 the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
13 3(4)	32 16	<0.01	Sentry Station/Gate 25	This subparcel is associated with the Sentry Station at Gate 25. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997 with the CERFA letter report that designated this subparcel Category 1 the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL ACTION/ MITIGATION
13 4 (4)	31 17	5 5	Building 210	This subparcel is associated with Building 210 and Site 41 (Satellite Drum Accumulation Area). The building also contained the base photographer's photo developing lab in Bay 7. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated October 20, 1998, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.
13 5 (4)	33 16	3 9	Building 211 and open land area surrounding Buildings 210 and 211, and Sentry Stations 23 and 25	This subparcel is associated with Building 211 and its associated emergency generator. Gates 23, 24, and 25, and the surrounding open land area extending to Airways Boulevard. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides, and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.
14 1 (4)	27 19	<0 01	Sentry Station/Gate 22	This subparcel is associated with the Sentry Station at Gate 22. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.

# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDATION/ MITIGATION
14 2(4) Demolished 1998	33 17	10.5	Building 209 and open land area surrounding Building 209 and Sentry Station 22	This subparcel is associated with Building 209 (demolished in 1998) and the surrounding open land area extending north to Dunn Road and east to Airways Boulevard. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. In addition, this subparcel is associated with a 12,000-gallon heating oil tank that was located outside of Building 209 but was removed in July of 1994. There has been no documented release associated with this tank, and no evidence was found of disposal or of migration from an adjacent property of hazardous substances or petroleum products. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
15 1(4)	10 18	<0.01	Sentry Station/Gate 15	This subparcel is associated with the Sentry Station at Gate 15. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
15 2(4)	26 18	0.01	Building 308	This subparcel is associated with 308 and Site 35 (Building 308 - Hazardous Waste Storage). Samples were collected from around the building. Air samples from inside the building to assess the impact from storage of hazardous materials indicated no human health hazards. In June 1998, the BCT concurred to change this subparcel from Category 7 to a Category 3, believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDATION/ MITIGATION
15 4(4) Demolished 1998	14 18	0 28	Building 702	This subparcel is associated with Building 702 demolished in 1998. In February 1999, the BCT concurred to change this subparcel from Category 7 to Category 3 because the building was demolished and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.
16 2(4) Demolished 1999	17 10	5 5	Building 559	This subparcel is associated with Building 559, which may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. In December 1997, the BCT concurred to change this subparcel to Category 1. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated October 20, 1998, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.
18 1(4)JS/HR	17 8	4 0	Building 560	This subparcel is associated with Building 560. Two spills (5 gallons and 15 gallons) of aqueous film forming foam were reported on October 17, 1995, and November 14, 1995, inside Building 560. Section 3, The Spill Team responded, applied absorbent and disposed of all residues in accordance with federal, state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 4 and the BCT concurred. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x, y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDATION/ MITIGATION
18 2(4)	19 8	2 6	Open land area surrounding Building 560	This subparcel is associated with the open land area surrounding Building 560. This subparcel contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. In September 1997, the BCT concurred to change this subparcel from Category 7 to Category 3, believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
20 2(4)HS/HR	17 6	5 0	Building 670	This subparcel is associated with Building 670. Significant corrosion was observed during the EBS visual inspection due to acid leaks at the battery charging station. Sodium bicarbonate was applied and disposed in accordance with federal, state and local regulations. A 1-gallon spill of hydraulic fluid was reported on August 30, 1995 inside Building 670. Section 1. The Spill Team responded, applied absorbent and disposed of all residues in accordance with federal, state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 4 and the BCT concurred. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
20 6(4)	20 4	0 40	Spill area between western ends of Buildings 489 and 490	This subparcel is associated with a sulfuric acid spill on June 10, 1993, on the south dock of Bay 5, Building 489. The Spill Team responded, took appropriate action and disposed of all residues in accordance with local, state and federal regulations. This subparcel also contains gravel areas that were historically sprayed with waste oil containing PCP. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDATION/ MITIGATION
21 1(4)	17 3	5 0	Building 690	This subparcel is associated with Building 690, which was used to temporarily stage hazardous materials prior to shipment. Site 77 which is typically associated with this building is adjacent to and not inside of the building. This subparcel became a Category 1 due to the ECP category definition change that occurred after the 1996 Environmental Baseline Survey categorized this subparcel as a Category 2. At the October 1997 meeting the BCT concurred to change this subparcel to a Category 1 based on the new ECP definitions. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated October 20 1998 with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs	ICs implemented via Master Lease and subsequent FOSLS No further remediation necessary
21 4(4)HS/HR	15 4	0 73	Building 685	This subparcel is associated with Building 685. Corrosion was observed during the EBS visual inspection due to acid spills at the battery charging station. Sodium bicarbonate was applied and disposed in accordance with federal state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 4 and the BCT concurred. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs	ICs implemented via Master Lease and subsequent FOSLS No further remediation necessary
22 1(4)	18 4	0 66	Open land area between east ends of Buildings 689 and 690	This subparcel is associated with the open land area between east ends of Buildings 689 and 690. This subparcel contains gravel areas that were historically sprayed with pesticides herbicides and waste oil containing PCP. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs	ICs implemented via Master Lease and subsequent FOSLS No further remediation necessary



**TABLE 3-6**  
**SUBPARCEL DESCRIPTIONS**

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDIAL/ MITIGATION
22 2(4)	17 4	0 58	Spill area east of Building 685 between Buildings 689 and 690	This subparcel is associated with Screening Site 77 (Unknown Wastes Near Buildings 689 and 690) Battery acid spilled during MHE battery charging procedures was washed out a nearby door onto the gravel area immediately east of Building 685. This subparcel contains gravel areas that were historically sprayed with pesticides herbicides and waste oil containing PCP. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.
23 1(4)	19 2	<0 01	Sentry Station/Gate 7	This subparcel is associated with the Sentry Station at Gate 7. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.
23 2(4)	13 2	0 02	Sentry Station/Gate 8	This subparcel is associated with the Sentry Station at Gate 8. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.
23 3(4) demolished 2002	11 4	0 12	Building 787	This subparcel is associated with Building 787. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL/ MITIGATION
23 4(4)	13 3	0 01	Waiting Shelter/ Building 795	This subparcel is associated with Building 795. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.
23 5(4)	5 2	0 18	Building 995	This subparcel is associated with Building 995. There has been no documented release or disposal of hazardous substances or petroleum products, nor has there been migration from an adjacent property of hazardous substances or petroleum products. This subparcel was originally proposed as an ECP Category 1 in a December 6, 1996 CERFA letter, however, EPA was unable to concur with the proposed ECP Category 1 due to potential groundwater contamination under the subparcel. Upon further discussion based on recent EPA property transfer guidance and in a May 17, 1999 letter, EPA provided conditional concurrence with ECP Category 1 for this subparcel. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.
23 7(4) demolished 2002	11 5	0 05	Building 783	This subparcel is associated with Building 783, which previously stored flammable items and ordnance material and is Site 82. The DRC demolished Building 783 in 2002. In March 1999, the BCT concurred to change this subparcel from ECP Category 7 to a Category 3 based on a BCT visual inspection of the building's interior that determined no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL	LOCATION (x y coordinates)	APPROXIMATE SIZE (acres)	FACILITY	BASIS	REMEDIAL ACTION/ MITIGATION
23 8(4)	11 3	0 04	Building 793	This subparcel is associated with Building 793, which previously stored flammable items and ordnance material and is Site 82. In March 1999, the BCT concurred to change this subparcel from Category 7 to Category 3 based on a BCT visual inspection of the building's interior that determined no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
23 9(4)	4 2	0 25	Spill area outside Building 995	This subparcel is associated with a gasoline spill reported on September 13, 1993, adjacent to and to the northwest of Building 995. The Spill Team responded, applied absorbent, removed stained soil and disposed of it in accordance with federal, state and local regulations. Soil samples indicated that petroleum hydrocarbons were detected at 3.2 mg/kg, well below the Tennessee clean-up level of 100 mg/kg. In October 1997, the BCT concurred to change this subparcel to Category 3. In December 1998, the BCT concurred to change this subparcel from Category 3 to Category 2 based on the new ECP definitions regarding petroleum releases and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 2 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
23 10(4)	8 2	2 6	Area X01	This subparcel is associated with the open gravel storage area south of Buildings 873 and 875 in area X01, which was reportedly a small lake when the Depot opened in 1942. This subparcel consists of a gravel area that was historically sprayed with waste oil containing PCP, pesticides and herbicides. Records also indicate transformers possibly containing PCBs may have been stored at this area. There is no documentation of releases from the transformers. In October 1997, the BCT concurred to change this subparcel from Category 7 to Category 3, believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.

**TABLE 3-6**  
**SUBPARCEL DESCRIPTIONS**

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x, y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL ACTION/ MITIGATION
23 1(4)	6 2	3 3	Open land area surrounding Building 995	This subparcel is associated with the open land area surrounding Building 995. This subparcel contains grassed areas that were historically sprayed with pesticides and herbicides and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.
24 1(4)HR	10 3	2 0	Former material recoupment area at southern end of open storage area X02 and at the southeast corner of Building 873	This subparcel is associated with the southern end of open storage area X02, the gravel area east of Site 27 (Former Recoupment Area - Building 873). The southern end of X02 was used as a hazardous materials recoupment area (remove hazardous materials from damaged containers then repackage the materials) until the current Recoup Building was constructed in 1987/1988. In 1985 the Depot completed a removal action at this subparcel. The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 5 and the BCT concurred based on the removal action, but that further category changes would require RI results. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 5 to Category 4 based on implementation of the ICs.	Removal action completed in 1985. ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.
29 1(4)	3 10	0 01	Sentry Station/Gate 9	This subparcel is associated with the Sentry Station at Gate 9. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.

710 175

21 of 73

# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDICATION/ MITIGATION
29 2(4)	4 18	30.4	Open storage areas X27 and X30. Buildings 801, 802 and 804 as well as the surrounding open land area extending to Dunn Road and to Perry Road.	This subparcel is associated with open storage areas X27 and X30. Buildings 801 and 802 and the surrounding open land area extending north to Dunn Road and west to Perry Road. This subparcel contains railroad tracks, open storage areas and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. The railroad tracks and ballasts were removed in 1999/2000. In addition, this subparcel is associated with a 1.25-gallon hydraulic fluid spill that was reported on September 12, 1995 in the street. The spill reportedly spread north through Gate 15 and across Dunn Avenue (DDMT 1995). The Spill Team responded applied absorbent removed any stained soil and disposed of all residues in accordance with federal, state and local regulations. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.
29 3(4)	2 11	0.13	Storm drainage ditch adjacent to Gate 9.	This subparcel is associated with Site 56 (Western Drainage Ditch), a stormwater drainage canal that collects the stormwater runoff from the western portion of the MI. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.

710 176

22 of 73

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL	LOCATION (x y coordinates)	APPROXIMATE SIZE (acres)	FACILITY	BASIS	REMEDIAL ACTION/ MITIGATION
30 1(4)	4 14	1 4	Building 925	This subparcel is associated with Building 925. This building served as the Bulk Flammable Materials warehouse and stored 55 gallon drums of flammable materials such as xylene, toluene, acetone, methyl ethyl ketone, methanol, and ethanol. Prior to construction of Building 915, this area was a bermed open storage location (X25) for petroleum products and flammable materials. A fabric tension structure was erected over this bermed area and warehouse flammable materials. On January 19, 1988, the fabric tension structure collapsed during a storm resulting in about 325 gallons of flammable materials being released in the bermed area and mixing with about 30,000 gallons of rainwater. The Spill Team and the Memphis Fire Department responded. The material was contained and removed to an appropriate disposal facility. The containment and clean up of this spill has been documented by the Depot and the Memphis Fire Department. The current Building 925 was constructed after this incident over a portion of the original fabric tension structure area. In September 1997, the BCT concurred to change this subparcel from Category 7 to Category 4 because the spill did not occur in the current building and any spilled material had volatilized over the past nine years. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.
30 2(4)	4 13	0 42	Spill Area between Buildings 925 and 949	This subparcel is associated with the former X25 open storage area. A 1988 spill and Site 53. In the past, flammable materials were stored in 55-gallon drums within an earthen bermed area, which was later converted to a concrete bermed area. A fabric tension structure was erected over the concrete berm area. In 1988, the structure collapsed during heavy winds, releasing approximately 327 gallons of flammable material (xylene, toluene, and methyl ethyl ketone) that mixed with approximately 30,000 gallons of water. The Memphis Fire Department Hazmat Team joined the Depot's Spill Team in cleaning up the spill. The material/water waste was pumped out of the bermed area and disposed of according to federal, state, and local regulations. Building 925 was constructed over a portion of the area in 1994. In February 1999, the BCT concurred to change this subparcel from Category 7 to Category 4 based on cleanup of the spill and sample results. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLs. No further remediation necessary.

## SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL ACTION/ MITIGATION
30 3(4)	4 15	6 0	Open storage area X23 and open land area surrounding Buildings 925 and 949	This subparcel is associated with the open land area surrounding Buildings 925 and 949 excluding the area in Subparcels 30 2 and 30 5. This subparcel also contains a portion of open storage area X23 and was formerly open storage area X25. Both X23 and X25 were used to store 55 gallon drums of POLs and flammable materials. Buildings 925 and 949 were constructed on former open storage area X25. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. The MI RI Report indicated levels of several metals exceeding BCT screening criteria and presented unacceptable risks for industrial reuse. The MI FS and Proposed Plan indicated the need for lead-impacted soil to be removed from this subparcel. During development of the MI ROD DLA elected to conduct a removal action. The ROD contains an explanation of significant differences regarding the removal action decision. The Depot completed the removal action in 2001. The MI RI Report also indicated levels of several constituents that presented unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 6 to Category 4 based on completion of the removal action and on implementation of the ICs.	Removal action completed in 2001. ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
30 4(4)	4 11	1 4	Building 949	Short term hazardous substance storage and possible fumigation in Building 949. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. In December 1997 the BCT concurred to change this subparcel to Category 1. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated October 20 1998 with the CERFA letter report that designated this subparcel Category 1 the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.

710 178

24 of 73

**TABLE 3-6**  
**SUBPARCEL DESCRIPTIONS**

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDIAL/ MITIGATION
30 5(4)	4 10	0 55	Former spray paint area south of Building 949	This subparcel is associated with Site 83 (Dried Paint Disposal Area). According to interviews with Depot personnel, spray painting and sand blasting occurred at this location until the early 1980s. The MI RI Report indicated levels of several metals exceeding BCT screening criteria and presented unacceptable risks for industrial reuse. The MI FS and Proposed Plan indicated the need for lead-impacted soil to be removed from this subparcel. During development of the MI ROD, DLA elected to conduct a removal action. The ROD contains an explanation of significant differences regarding the removal action decision. The Depot completed the removal action in 2001. The MI RI Report also indicated levels of several constituents that presented unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 6 to Category 4 based on completion of the removal action and on implementation of the ICs.	Removal action completed in 2001. ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
33 1(4)	12 15	0 01	Building 727	This subparcel is associated with Building 727. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
33 2(4)	14 10	0 05	Building 754	This subparcel is associated with Building 754. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
33 4(4)	14 9	0 06	Building 756	This subparcel is associated with Building 756. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.



## SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAATION/ MITIGATION
33 7(4)	13 8	0 15	Former aboveground storage tank (Building 765) east of Building 770	This subparcel is associated with Site 81 (Fuel Oil Building 765) a 12 000-gallon diesel fuel aboveground storage tank removed in 1994. This subparcel also contains a gravel area that was historically sprayed with pesticides herbicides and waste oil containing PCP. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
33 10(4)	14 10	0 01	Building 753	This subparcel is associated with Building 753. This subparcel became a Category 1 due to the ECP category definition change that occurred after the 1996 Environmental Baseline Survey categorized this subparcel as a Category 2. At the October 1997 meeting, the BCT concurred to change this subparcel to a Category 1 based on the new ECP definitions. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. Although EPA concurred via letter dated October 20 1998 with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
33 11(4)	14 9	0 25	Outside Building 756	This subparcel is associated with the 1 000 gallon diesel above ground storage tank outside Building 756. The original 1 000-gallon underground storage tank supplying the emergency generator in Building 756 was removed in June 1994. The 1996 Final Environmental Baseline Survey determined this subparcel to be Category 2 and the BCT concurred believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 2 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.

## SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x, y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL ACTION/ MITIGATION
35 1(4)	3 3	0.02	Building 1090	This subparcel is associated with Building 1090 that was used to store paint thinner lubricating oil. P-19 preservation oil, and corrosion preservation compound. In February 1999, the BCT concurred that this building be cleaned during the removal action for the surrounding area and to change the removal subparcel from Category 7 to Category 6. The Depot completed the removal action in August 2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The MI ROD calls for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 6 to Category 4 based on implementation of the ICs.	Removal action completed in 2000. ICs implemented via Master Lease and subsequent FOSLS. No further remediation necessary.
Environmental Condition Category 5: No subparcels designated Category 5.					
Environmental Condition Category 6					
35 5(6)	29 4	32.17	Recreational area including the golf course, playground, softball field, volleyball and tennis courts, wading pool, Buildings 194, 197 and 398, and open land area surrounding the community club complex extending to Ball Road.	This subparcel is associated with Buildings 188, 189, 192, 194, 197 and 398, open land area surrounding these buildings, the golf course, the baseball field and the playground area. This subparcel contains grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for recreational or industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to maintain a boundary fence around Parcel 3 to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI ROD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

**TABLE 3-6**  
**SUBPARCEL DESCRIPTIONS**

SUBPARCEL NUMBER AND LABEL*	LOCATION (x, y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDIAL/ MITIGATION
3 6(6)	26 6	3 4	Lake Danielson	This subparcel is associated with Lake Danielson which is located in the northwest corner of the Golf Course and receives stormwater runoff from the central portion of the MI. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for recreational or industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to maintain a boundary fence around Parcel 3 to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.
3 7(6)	26 4	0 30	Lake Danielson Outlet Ditch	This subparcel is associated with the Lake Danielson outlet ditch that receives stormwater flow from surrounding areas and intermittent flow from the lake. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for recreational or industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to maintain a boundary fence around Parcel 3 to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.
3 11(6)	30 6	0 77	Former flamethrower test site west of Hole 9	This subparcel is associated with an area on the golf course that was used to test flame-thrower fuels. Firefighting techniques were also practiced at this site after ignition of the fuel. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for recreational or industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to maintain a boundary fence around Parcel 3 to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.

710 182

28 of 73

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x, y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIATION/ MITIGATION
4 2(6)	31 7	0 33	Building 270	This subparcel is associated with Building 270. Although EPA concurred via letter dated March 13, 1997, with the CERCLA letter report that designated this subparcel Category 1, the MI RI indicated levels of dieldrin that presented unacceptable risk for residential reuse. The MI ROD called for remedial action in the form of ICs to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 1 to Category 4 based on implementation of the ICs.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
4 4(6)/PS/PR/H SHR	30 9	0 15	Building 260	This subparcel is associated with Building 260, Site 41 (Satellite Drum Accumulation Area) and Site 30 (Safety Klean Units). The Safety Klean unit was removed prior to closure. Absorbent was applied to released Safety Klean solvent and disposed in accordance with federal, state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 3 and the BCT concurred believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI ROD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
4 5(6)	30 8	3 2	Building 261 and area surrounding buildings in Parcel 4	This subparcel is associated with Building 261 and the open land area surrounding buildings in Parcel 4. This subparcel contains grassed areas that were historically sprayed with herbicides and pesticides. A 5,000-gallon heating oil tank was removed in July 1994 outside of Building 253. Two 12,000-gallon and one 20,000-gallon gasoline USTs were removed in 1986 south of Building 257. One 18,000-gallon and one 20,000-gallon gasoline USTs that were actually in Subparcel 4 6 replaced these tanks. These tanks were removed in June 1998. Soil sampling conducted in accordance with TN UST removal procedures indicated no release of gasoline or diesel. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI ROD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL/MITIGATION
4 6(6) Demolished 1999	29 9	0 25	Building 254	This subparcel is associated with Building 254 and a portion of the open land area/underground storage tank (UST) field west of the building. The DRC demolished this building in 1999. The EBS visual inspection noted that petroleum products, oils, lubricants and antifreeze were stored in this building as well as leaking drums and ground staining. In addition, a 5-gallon diesel spill was reported on March 20, 1995, from a tank outside the southwest corner of Building 254. The Spill Team responded, applied absorbent and disposed of all residues in accordance with federal, state and local regulations. A 1,110 gallon gasoline tank was removed in December 1989 from the UST field. Two USTs were removed in 1998 from the UST field behind Building 254. In September 1997, the BCT changed this subparcel to Category 6 due to the scheduled UST removal project. Upon receipt of UST closure approval by TDEC-UST in December 1998, the BCT concurred to change this subparcel from Category 6 to Category 2, believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 2 to Category 6 based on the remedial actions that will be addressed by the MI ROD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
4 8(6)	30 9	0 02	Building 263	This subparcel is associated with Building 263, which has been used as attendants' room for the dispensing of petroleum, oil and lubricant to vehicles and as a vehicle grease rack since the 1940s, and to Site 68 (POL-Building 263). Records do not indicate any release, disposal or migration. In addition, this building was fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. After the December 1997 BCT decision to change fumigated buildings to Category 1, the BCT concurred to change this subparcel to Category 3 based on the potential release and cleanup of petroleum products and antifreeze. In June 1998, the BCT again concurred to change this subparcel from Category 7 to Category 3, believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI ROD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x, y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL ACTION/ MITIGATION
4 9(6)	29 8	1 4	Pad 267	This subparcel is associated with Pad 267 the site of the former pesticide shop (Building T267) Pad 267 was a concrete slab that has been covered with asphalt and is currently used as a parking lot Building T267 was used for storing and mixing of pesticides/herbicides Rinse water from pesticide/herbicide spraying operations was reportedly dumped on the ground near the facility The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD	ICs implemented via Master Lease and subsequent FOSLs Enhanced bioremediation of groundwater at the MI in design phase
4 10(6)	31 7	0 26	Building 273 and the former putting green	This subparcel is associated with Building 273 that was used for mixing golf course pesticides and herbicides and the former putting green The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD	ICs implemented via Master Lease and subsequent FOSLs Enhanced bioremediation of groundwater at the MI in design phase
4 11(6) Demolished 1999	29 9	0 22	Building 253	This subparcel is associated with Building 253 Site 40 (Safety Kleen unit) and Site 66 (POL Building 253) Petroleum products (55 gallon drums of hydraulic oil) and antifreeze were stored and used at Building 253 Records and visual evidence do not indicate any release disposal or migration in this building Safety Kleen prior to closure removed the Safety Kleen unit in September 1997 This building may have been fumigated Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation In February 1998 the BCT concurred to change this subparcel to Category 1 The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risk for residential reuse The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse Although EPA concurred via letter dated October 20 1998 with the CERFA letter report that designated this subparcel Category 1 the BCT concurred in 2002 to change this subparcel from Category 1 to Category 6 based on the remedial actions that will be addressed by the MI RD	ICs implemented via Master Lease and subsequent FOSLs Enhanced bioremediation of groundwater at the MI in design phase

## SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL ACTION/ MITIGATION
4 12(6) Demolished 1999	31 10	0 18	Building 251	This subparcel is associated with Building 251 demolished in 1999 during construction of the boulevard construction. Building 251 had a floor drain connected to the sanitary sewer. One surface soil sample was taken from the sump beneath the floor drain. Results indicate elevated concentrations of many metals and PAHs. The Preliminary Risk Evaluation indicated these concentrations had a risk ratio above acceptable levels for residential and industrial worker scenarios. In December 1997 the BCT recommended that the sump be cleaned and, if appropriate, grouted closed and that upon completion of this action, the subparcel should change to a Category 4. The Depot completed the action in January 1998 and the BCT concurred to change this subparcel from Category 7 to Category 4 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI ROD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
4 13(6)	31 8	0 18	Building 265	This subparcel is associated with Building 265 that has a floor drain that is connected to the sanitary sewer. One surface soil sample was taken from the sump beneath the floor drain. Results indicate elevated concentrations of many metals and PAHs. The Preliminary Risk Evaluation indicated these concentrations had a risk ratio above acceptable levels for residential and industrial worker scenarios. In May 1998 the BCT recommended that the sump be cleaned and, if appropriate, grouted closed and that upon completion of this action, the subparcel should change to a Category 4. The Depot completed the action in June 1998 and the BCT concurred to that this subparcel change from Category 7 to Category 4 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI ROD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

# **TABLE 3-6** **SUBPARCEL DESCRIPTIONS**

SUBPARCEL NUMBER AND LABEL	LOCATION (x y coordinates)	APPROXIMATE SIZE (acres)	FACILITY	BASIS	REMEDIAL ACTION/ MITIGATION
5 1(6)	29 7	0 49	Building 272 and surrounding open land area	This subparcel is associated with Building 272 and the surrounding open land area. This subparcel contains grassed areas that were historically sprayed with herbicides and pesticides. In September 1997, the BCT concurred to change this subparcel from Category 7 to Category 3 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
5 2(6)	29 7	1 5	Building 274 and open land area surrounding Building 274	This subparcel is associated with Building 274, "J" Street Café, and the open land area surrounding the building. This subparcel is also associated with Site 48 (Former PCB Transformer Area). Building 274 was constructed after transformer storage ceased. In 1997, surface soil samples were collected from the grassy areas directly outside of Building 274. Sample results indicated levels of PCBs and dieldrin exceeding BCT screening criteria. The DRC identified this subparcel as a high priority for reuse. In 1997, the BCT concurred to conduct a removal action at this subparcel and to change this subparcel to a Category 6. The Depot completed the removal action in 1998. In May 1999, the BCT concurred that the removal action was complete and to change this subparcel from Category 6 to Category 4 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.	Removal action completed in 1998. ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.



# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x, y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL ACTION/ MITIGATION
8 1(6)	28 14	6 4	Open land area surrounding Buildings 229 230 329 and 330	This subparcel is associated with the open land area surrounding Buildings 229 230 329 and 330. This subparcel contains railroad tracks that were historically sprayed with pesticides herbicides and waste oil containing PCP and grassed areas that were historically sprayed with herbicides and pesticides. The railroad tracks and ballasts were removed in 1999/2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs Enhanced bioremediation of groundwater at the MI in design phase
8 4(6)	26 15	2 8	Building 329	This subparcel is associated with Building 329, which may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. In December 1997, the BCT concurred to change this subparcel to Category 1. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risk for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. Although EPA concurred via letter dated October 20 1998 with the CERFA letter report that designated this subparcel Category 1 the BCT concurred in 2002 to change this subparcel from Category 1 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs Enhanced bioremediation of groundwater at the MI in design phase
9 1(6)	23 13	6 3	Open land area surrounding Buildings 429 430 449 and 450	This subparcel is associated with the open land area surrounding Buildings 429 430 449 and 450. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs Enhanced bioremediation of groundwater at the MI in design phase

# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE (acres)	FACILITY	BASIS*	REMEDATION/ MITIGATION
9 2(6)	23 15	2 8	Building 429	This subparcel is associated with Building 429 which may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. In December 1997 the BCT concurred to change this subparcel to Category 1. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risk for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. Although EPA concurred via letter dated October 20 1998 with the CERFA letter report that designated this subparcel Category 1 the BCT concurred in 2002 to change this subparcel from Category 1 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
9 3(6)	23 13	2 8	Building 430	This subparcel is associated with Building 430 and may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. Staining due to acid leaks from batteries in the forklift area was observed during the EBS visual inspection. After the December 1997 BCT decision to change fumigated buildings to Category 1 the BCT concurred to change this subparcel to Category 3 based on the cleanup of battery acid. In June 1998 the BCT again concurred to change this subparcel from Category 7 to Category 3 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

## SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL	LOCATION (x y coordinates)	APPROXIMATE SIZE (acres)	FACILITY	BASIS	REMEDIAL ACTION/ MITIGATION
9 5(6)	23 11	2 8	Building 450	This subparcel is associated with Building 450 which may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. In December 1997, the BCT concurred to change this subparcel to Category 1. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. Although EPA concurred via letter dated October 20, 1998, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 6 based on the remedial actions that will be addressed by the MI ROD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
10 1(6)HR	16 12	2 8	Building 649	This subparcel is associated with Building 649. A 1-gallon hydraulic fluid spill was reported on August 11, 1995, inside Building 649. Section 5. The Spill Team responded, applied absorbent and disposed of all residues in accordance with federal, state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be Category 3 and the BCT concurred based on the cleanup of the spills and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI ROD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

710 190

36 of 73

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDIAL/MITIGATION
10 2(6)	18 11	8.7	Open land area surrounding Buildings 549, 550, 649 and 650	This subparcel is associated with the open land area surrounding Buildings 549, 649, 550 and 650 and contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations from Category 7 reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI ROD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
10 6(6)	17 11	2.8	Building 650	This subparcel is associated with Building 650, which may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. In December 1997, the BCT concurred to change this subparcel to Category 1. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. Although EPA concurred via letter dated October 20, 1998, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 6 based on the remedial actions that will be addressed by the MI ROD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
11 1(6)	18 14	4.6	Open land area surrounding Buildings 529, 530 and 630	This subparcel is associated with the open land area surrounding Buildings 529, 530 and 630. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI ROD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL ACTION/ MITIGATION
11 2(6)	19 15	2 8	Building 529	<p>This subparcel is associated with Building 529 and may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. Antifreeze, firefighting foam, and photographic chemicals were stored in the west end of the building. Records indicate several spills of firefighting foam. The Spill Team responded, applied absorbent and disposed of all residues in accordance with federal, state, and local regulations. Staining due to acid leaks from batteries in the forklift area was observed during the EBS visual inspection. After the December 1997 BCT decision to change fumigated buildings to Category 1, the BCT concurred to change this subparcel to Category 3 based on the cleanup of battery acid and firefighting foam. In June 1998, the BCT again concurred to change this subparcel from Category 7 to Category 3, believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations of reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.</p>	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.
11 3(6)	20 14	2 8	Building 530	<p>This subparcel is associated with Building 530, which may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. In December 1997, the BCT concurred to change this subparcel to Category 1. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations of reuse. Although EPA concurred via letter dated October 20, 1998, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 6 based on the remedial actions that will be addressed by the MI RD.</p>	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.

## SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x, y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDATION/ MITIGATION
11 4(6)	16 13	2 8	Building 630	This subparcel is associated with Building 630 which may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. In December 1997, the BCT concurred to change this subparcel to Category 1. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risk for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. Although EPA concurred via letter dated October 20 1998 with the CERFA letter report that designated this subparcel Category 1 the BCT concurred in 2002 to change this subparcel from Category 1 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
12 1(6)	17 15	1 7	Open land area surrounding Building 629	This subparcel is associated with the open land area surrounding Building 629. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

710 193

39 of 73

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL	LOCATION (x y coordinates)	APPROXIMATE SIZE (acres)	FACILITY	BASIS	REMEDATION/ MITIGATION
12 2(6)	16 15	2 8	Building 629	<p>This subparcel is associated with Building 629, formerly a hazardous materials storage building (DDT herbicides solvents oxidizers and toxic/corrosive materials). A 6 gallon nitric acid spill was reported on April 23 1990 inside Building 629 Section 1. The Spill Team responded applied sodium bicarbonate and disposed of all residues in accordance with federal state and local regulations. This building may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. After the December 1997 BCT decision to change fumigated buildings to Category 1 the BCT concurred to change this subparcel to Category 4 based on the cleanup of the nitric acid spill. In January 1998 the BCT again concurred to change subparcel from Category 7 to Category 4 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD</p>	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.

710 194

## SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x, y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIATION/ MITIGATION
15 3(6)	26 16	0.41	Building 319	<p>This subparcel is associated with Building 319, a storage facility for various hazardous substances including flammables and toxics (cyanide). Low-level radioactive materials were also stored in the western bay of Building 319. Beginning in 1994, the eastern end of Building 319 was used for hazardous waste storage by DRMO. In addition, a xylene spill was reported on November 18, 1991, inside Building 319. Section 4. In 1996 an inspection of the western bay was conducted as required for closure of the Defense Distribution Center's Nuclear Regulatory Commission permit for storage of low-level radioactive materials at the Depot. The inspection determined that approximately 8 feet of wall space within the western bay required remediation for low-level radioactive impacts. The Depot completed remediation in 1997. Soil samples collected in 1997 indicated chromium and lead at levels well below the 1 in a million risk ratio for both residential and industrial scenarios. The NRC approved the building remediation/permit closure documentation and deleted the Memphis Depot from the DDC's permit. Building 319 was released for use with no NRC restrictions. In June 1999, the BCT received the NRC permit closure approval documentation and concurred to change this subparcel from Category 7 to Category 4 based on the cleanup of both the xylene spill and the low-level radioactivity and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations of reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.</p>	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.



# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL ACTION/ MITIGATION
15 5(6)	23 18	3.3	Open land area west of Buildings 308 and 309	This subparcel is associated with a portion of the open gravel storage area Y50 that is west of Buildings 308 and 309. This subparcel is associated with Site 36 (DRMO Hazardous Waste Concrete Storage Pad), Site 37 (DRMO Hazardous Waste Gravel Storage Pad), Site 38 (DRMO Damaged/Empty Hazardous Materials Drum Storage Area), and Site 39 (DRMO Damaged/Empty Lubricant Container Area). This subparcel consists of gravel areas that were historically sprayed with pesticides, herbicides, and waste oil containing PCP. The PRE identified this subparcel for removal action and the BCT concurred to change this subparcel from Category 7 to Category 6. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse therefore, no removal action occurred. The report indicated that constituents did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002 the BCT concurred that this subparcel remains Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
15 6(6) 416 and 417 demolished in 2002	18 17	43.8	Buildings 301 304 305 306 307 309 416 417 701 and 717 and surrounding open land area	This subparcel is associated with open storage areas Y10 Y11 Y50 and Y60 Buildings 301 304 305 306 307 309 T416 T417 701 and 717 Site 54 (DRMO East Stormwater Runoff Canal), Site 55 (DRMO North Stormwater Runoff Canal), Site 72 (Property Disposal Office Yard), and Site 79 (Fuels Miscellaneous Liquids Wood and Paper - Vicinity 702) and a 4 000 gallon heating oil tank located outside of Building 319 removed in July 1994. The DRC demolished Buildings T416 and T417 in 2002. There has been no documented release associated with this tank. This subparcel is also associated with a 30-gallon solvent spill south of Building 309 in 1991. The Spill Team responded took appropriate action and disposed of all residues in accordance with federal, state and local regulations. In addition, this subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides, and waste oil containing PCP. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDIAATION/ MITIGATION
16 1(6)	21 9	2 8	Open land area surrounding Building 559	This subparcel is associated with the open land area surrounding Building 559. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.
17 1(6)	22 10 Building relocated to Parcel 30 adjacent to Building 925	0 09	Land area where temporary Building 459 once stood	This subparcel is associated with land area where temporary Building 459 once stood. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. Although EPA concurred via letter dated October 20, 1998, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x, y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDATION/ MITIGATION
17 2(6)	22 9	3 7	Open land area surrounding Building 359	<p>This subparcel is associated with the open land area surrounding Building 359. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. In addition, this subparcel is associated with the following tanks: a 12,000-gallon and a 500-gallon fuel oil tank closed in place in July 1994 and September 1995, respectively; a 1,000-gallon fuel oil tank and a 500-gallon diesel tank removed in 1993; a 12,000-gallon and a 500-gallon fuel oil tank removed in 1993. There have been no documented releases associated with these tanks. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.</p>	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.

**TABLE 3-6**  
**SUBPARCEL DESCRIPTIONS**

SUBPARCEL NUMBER AND LABEL*	LOCATION (x, y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS*	REMEDATION/ MITIGATION
17 3(6) Demolished 1999	25 9	5 5	Building 359	<p>This subparcel is associated with Building 359 and Site 49 (Medical Waste Storage Area). The DRC demolished this building in 1999 during construction of the entrance boulevard. This building was used for storage of medical supplies, medical supply waste (expired shelf life medical supplies), sodium chloride, petroleum products and low level radiological items (watch dials, lantern mantles and compasses). The 1997 Radiological Survey concluded this building was available for unrestricted use as no evidence of radiological contamination was found. A sulfuric acid spill was reported on August 27 1993 inside Building 359. Section 2. The Spill Team responded, applied sodium bicarbonate and disposed of all residues in accordance with federal state and local regulations. An out of service incinerator was also located in this building. This building was fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. After the December 1997 BCT decision to change this subparcel to Category 4 based on the cleanup of the sulfuric acid. In June 1998 the BCT again concurred to change this subparcel from Category 7 to Category 4 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI ROD.</p>	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

710 199

45 of 73

# **TABLE 3-6** **SUBPARCEL DESCRIPTIONS**

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIALTION/ MITIGATION
19 1(6)	21 8	2 8	Buildings 467 (fabric tension structure removed in 1996) 468 and open land area surrounding Buildings 465 467 468 and 469	This subparcel is associated with Building 467 (a fabric tension structure that was removed in 1996) Building 468 and the open land area surrounding Buildings 465 468 and 469 Facility maintenance equipment was stored in Building 468 This subparcel contains railroad tracks that were historically sprayed with pesticides herbicides and waste oil containing PCP The railroad tracks and ballasts were removed in 1999/2000 This subparcel also contains a small grass area and a small gravel area that were historically sprayed with herbicides and pesticides In February 1998 the BCT conducted a walk through of the buildings A 1 000-gallon oil/water separator is located in Subparcel 19 1 and is connected to the vehicle wash at Building 465 The separator is connected to the sanitary sewer and was routinely cleaned out In March 1999 the BCT concurred to change this subparcel from Category 7 to Category 3 believing no further remedial action was required The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse In 2002 the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD	ICs implemented via Master Lease and subsequent FOSLS Enhanced bioremediation of groundwater at the MI in design phase
19 2(6)	22 7	0 01	Building 465	This subparcel is associated with Building 465 a vehicle wash rack Chemical engine cleaners/degreasers may have been used or released in this building This building contains a floor drain/sump connected to an oil/water separator which is physically located in Subparcel 19 1 No sampling has been conducted at this subparcel In February 1999 the BCT conducted a walk through of Building 465 determined that the sump had been cleaned upon facility closure and used since then only to wash grounds keeping equipment In May 1999 the BCT concurred to change this subparcel from Category 7 to Category 3 believing no further remedial action was required The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse In 2002 the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD	ICs implemented via Master Lease and subsequent FOSLS Enhanced bioremediation of groundwater at the MI in design phase

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIATION/ MITIGATION
19 3(6)	22 8	0 22	Building 469	<p>This subparcel is associated with Building 469 which was the battery repair/charge shop. Acids, parts cleaning fluids and petroleum products were stored and used in Building 469. This subparcel is associated with Sites 40 (Safety Klean Units) and 41 (Satellite Drum Accumulation Areas). A self-contained Safety Klean unit was used in Building 469. Building 469 was also a satellite drum accumulation area for waste petroleum products and sulfuric acid. There is no evidence of releases from the units or accumulation area. On December 16, 1993, a transformer oil spill was reported at Building 469. Approximately 6 ounces of material was spilled on the south wall and floor near the entrance. The sheet rock wall and concrete floor absorbed some of the oil. The Spill Team responded, applied absorbent and disposed of the residue in accordance with federal, state and local regulations. Samples were collected from the absorbent and concrete and results indicated PCB 1242. According to the Spill Team Leader on the scene at the time of the spill and during sampling, the effected area was removed during sampling operations. In February 1999, the BCT conducted a walk through and was unable to locate the spill area. In May 1999, the BCT concurred that no further evidence of the spill remained, that a remedial action occurred, and to change this subparcel Category 7 to Category 4 based on the cleanup of the spill and believing no further action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI ROD.</p>	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

710 201

# TABLE 3-6

## SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDIAL ACTION/ MITIGATION
20 1(6)PR	21 5	0 46	Building 489	This subparcel is associated with a 1-gallon oil spill reported on November 3, 1995, at the north dock of Building 489. Section 4 The Spill Team responded applied absorbent and disposed of all residues in accordance with federal state and local regulations. This subparcel became a Category 2 due to the ECP Category definition change that occurred after the 1996 Environmental Baseline Survey categorized this subparcel as a Category 3. In December 1998, the BCT concurred to change this subparcel to Category 2 based on the new ECP definitions and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 2 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
20 3(6)HS/HR	20 7	5 0	Building 470	This subparcel is associated with Building 470. Corrosion was observed during the EBS visual inspection due to acid spills at the battery charging station. Sodium bicarbonate was applied and disposed in accordance with federal, state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be Category 4 and the BCT concurred believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL ACTION/ MITIGATION
20 4(6)HS/HR	21 5	5 0	Building 489	This subparcel is associated with Building 489. Corrosion was observed during the EBS visual inspection due to acid spills at the battery charging station. Sodium bicarbonate was applied and disposed in accordance with federal, state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 4 and the BCT concurred believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.
20 5(6)	19 6	26 5	Open land area surrounding Buildings 470, 489 and 670	This subparcel is associated with the open land area surrounding Buildings 470, 489 and 670. This subparcel contains railroad track and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.



# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x, y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDIACTION/ MITIGATION
21 2(6)PS/HS/H R	23.3	5.0	Building 490	This subparcel is associated with Building 490 and Site 40 (Safety Kleen Units). The Safety Kleen unit was removed prior to closure. Corrosion was observed during the EBS visual inspection due to acid spills at the battery charging station. Sodium bicarbonate was applied and disposed in accordance with federal, state and local regulations. A 1-gallon spill of sulfuric acid/battery acid was reported on December 15, 1995, inside Building 490. Section 5. The Spill Team responded, applied sodium bicarbonate and disposed of all residues in accordance with federal, state and local regulations. Petroleum products and microfiche developing chemicals were stored and used in Building 490. The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 4 and the BCT concurred believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
21 3(6)HS/HR	15.5	5.2	Building 689	This subparcel is associated with Building 689, Site 78 (Alcohol, Acetone, Toluene, Naphtha, Hydrofluoric Acid Spills) and Site 40 (Safety Kleen Units). Building 689 historically staged alcohol, acetone, toluene, and hydrofluoric acid before transport. The Safety Kleen unit was removed prior to closure. Eleven spills are documented from May 8, 1990 through November 16, 1995, and included nitric acid, corrosion removing compound, hydraulic fluid, oil, and sulfuric acid. The Spill Team responded, took the appropriate action and disposed of all residues in accordance with federal, state and local regulations. Samples were collected from the concrete parking lot immediately adjacent to and outside of Building 689. The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 4 and the BCT concurred believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

# TABLE 3-6

## SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDATION/ MITIGATION
21 5(6)	19 3	32 9	Open land area surrounding Buildings 490 685 689 and 690	This subparcel is associated with the open land area surrounding Buildings 490 689 and 690. This subparcel contains gravel areas that were historically sprayed with pesticides herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. This subparcel is also associated with Screening Site 76 (Unknown Wastes Near Building 690). The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations of reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
23 6(6)	12 2	20 6	Open land area surrounding buildings 783 787 and 793 and Sentry Stations at Gates 7 and 8	This subparcel is associated with open land areas south of Buildings 690 and 490 including parking lots and grassy areas the open land area surrounding Buildings 783 787 and 793 as well as Sentry Stations at Gates 8 and 7. This subparcel is also associated with Site 82 (Flammables - Building 783 and 793). The DRC demolished Buildings 783 and 787 in 2002. This subparcel contains grassed areas that were historically sprayed with herbicides and pesticides. In October 1997 the BCT concurred to change this subparcel to from Category 7 to Category 3 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations of reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x, y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL ACTION/ MITIGATION
24 2(6)	11 6	12 6	Open storage areas X02 and X03	This subparcel is associated with open storage areas X02 and X03 which were used for storage of POLs and flammable materials in 55-gallon drums until 1988. The areas then became steel storage. This subparcel contains railroad tracks, open storage areas and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
24 3(6)	11 7	3 9	Buildings 770 and 771 and open land area surrounding these buildings	This subparcel is associated with Site 34 (Building 770 Underground Oil Storage Tanks), Site 30 (Paint Spray Booth), Site 40 (Safety Klean Units) and Site 41 (Satellite Drum Accumulation Area) at Buildings 770 and 771. The EBS visual inspection noted that hazardous materials (antifreeze, paint solvents, Safety Klean) and petroleum products were stored in Building 770. Three spills are documented from July 1990 through August 1993. The Spill Team responded, took appropriate action and disposed of all residues in accordance with federal, state and local regulations. Several tanks have been removed including a 11 155-gallon diesel tank removed in July 1994, a 11 155-gallon fuel oil tank removed in July 1994, a 10 000-gallon fuel oil tank removed in July 1994, a 440-gallon gasoline tank removed in December 1989 and two 1 000-gallon used motor oil tanks removed in December 1989. Building 770 has an oil/water separator that was pumped out quarterly and a floor drain. The EBS visual inspection noted oil staining on the floor of Building 771. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

# **TABLE 3-6** **SUBPARCEL DESCRIPTIONS**

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL ACTION/ MITIGATION
25 1(6)HS/HR demolished 2002	9 4	6 2	Building 873	This subparcel is associated with Building 873 and Site 27 (Former Recoupment Area - Building 873). Building 873 stored hazardous materials such as chlorinated solvents, corrosives, petroleum oils and lubricants. The DRC demolished Building 873 in 2002. The southern end of the building and the gravel area east of the building were used as the hazardous materials recoupment area (remove hazardous materials from damaged containers then repack the materials) until the current Recoup Building was constructed in 1987/1988. Thirteen spills are documented from March 10, 1990 through November 29, 1993 and included tetrachloroethylene, sulfuric acid, hydraulic fluid and descaling compound. The Spill Team responded took the appropriate action and disposed of all residues in accordance with federal, state and local regulations. Samples associated with Site 27 were taken outside of the building in Subparcel 25 2 and were evaluated in the RI. In September 1997, the BCT concurred to change this subparcel from Category 7 to Category 4 based on the cleanup of the spills and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI ROD.	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.
25 2(6) demolished 2002	8 7	12 0	Building 875 and open land area surrounding Buildings 873 and 875	This subparcel is associated with Building 875, the open land area surrounding Buildings 873 and 875, and RI Site 27 (Former Recoupment Area/Building 5873). The DRC demolished Building 875 in 2002. This subparcel also contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. A 1,000-gallon heating oil tank was closed in place in July 1994 outside Building 875. The PRE identified this subparcel for potential removal action. In September 1997, the BCT concurred to change this subparcel from Category 7 to Category 6. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse; therefore, no removal action occurred. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 6 based on the remedial actions that will be addressed by the MI ROD.	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.

## SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDATION/ MITIGATION
26 1(6)	6 9	4 7	Open land area surrounding Building 970	This subparcel is associated with the open land area surrounding Building 970. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.
26 2(6)	6 4	6 3	Building 970	This subparcel is associated with Building 970. An oil fired generator that had leaked oil onto the concrete pad was observed at Building 970. Section 6 during the EBS visual inspection. This release consisted of only petroleum products. Absorbent was applied and the residue disposed in accordance with federal, state and local regulations. In October 1997, the BCT concurred to change this subparcel from Category 7 to Category 2 based on the cleanup of a petroleum product and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 2 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.
27 1(6)	4 9	4 4	Open land area surrounding Building 972	This subparcel is associated with the open land area surrounding Building 972. This subparcel contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL ACTION/ MITIGATION
27 2(6)	4 4	6 3	Building 972	This subparcel is associated with Building 972 and Site B4 (Flammables Solvents Waste Oil - Building 972). The building once stored flammable materials solvents and waste oil as an open shed building. Building 972 was converted to a closed building and stored and constructed wooden packing materials involving the use of petroleum products (oils and lubricants) paints and spray adhesives. Small operational spills occurred and were cleaned when they occurred. In addition, oil stained areas were observed in the building during the EBS visual inspection. The building recently had the floor cleaned and resealed which removed the stains. In October 1997, the BCT concurred to change this subparcel from Category 7 to Category 4 based on the cleanup of operational spills and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.
28 1(6)	2 7	6 0	Area X04	This subparcel contains the open storage area X04 north of Building 1089. This subparcel contains railroad tracks that were historically sprayed with pesticides, herbicides, and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. According to Depot personnel, this area was used for the storage of feed stock material and not hazardous materials. In October 1997, the BCT concurred to change this subparcel from a Category 7 to a Category 3 believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.

# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL	LOCATION (x y coordinates)	APPROXIMATE SIZE (acres)	FACILITY	BASIS	REMEDIAL/ MITIGATION
28 2(6)	3 5	6 31	Building 1089 and surrounding open land area	This subparcel is associated with Building 1089, the open land area surrounding Building 1089 and Screening Site (SS) 89 (Acids - Building 1089) Building 1089 was used to store acids, paints and cleaning solvents. Surface soil sample results indicated lead, arsenic and chromium levels exceeding BCT screening criteria. In October 1997, the BCT concurred to conduct a removal action at this subparcel and to change it from Category 7 to Category 6. The Depot completed the removal action in August 2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002 the BCT concurred that this subparcel remains Category 6 based on the remedial actions that will be addressed by the MI RD.	Removal action completed in 2000. ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
31 1(6)	6 13	23 7	Open storage areas X17 X19 and X21	This subparcel is associated with open storage areas X17, X19 and X21 and a portion of X23 and X15. These areas were used to store a variety of materials including POLs and hazardous materials. Records indicate that during the 1970s hazardous materials were recouped under a lean-to at the corner of 21st Street and E Street in the X21 area. This subparcel contains railroad tracks and open storage areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x, y coordinates)	APPROXIMATE SIZE (acres)	FACILITY	BASIS*	REMEDATION/ MITIGATION
32 1(6)	9 14	4 6	Areas X13 and X15	This subparcel is associated with open storage areas X13 and X15 to the west and north of Building 835. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. In October 1997, the BCT concurred to change this subparcel from Category 7 to Category 3 believing no remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.
32 2(6)	9 13	3 6	Building 835	This subparcel is associated with Building 835. Thirteen spills were reported from March 9, 1991 to May 26, 1995 for Building 835. Materials spilled include battery acid, hydrochloric acid, sulfuric acid, herbicide, muratic acid and transmission fluid. The Spill Team responded, took the appropriate action and disposed of all residues in accordance with federal, state and local regulations. Also, air sampling conducted in this building to assess the impact from storage of hazardous materials indicated no human health hazards. In September 1997, the BCT concurred to change this subparcel from Category 7 to Category 4 based on cleanup of these spills and believing no further remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 4 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.



# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x, y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDATION/ MITIGATION
32 3(6)	9 10	2 3	Building 865 and surrounding open land area	This subparcel is associated with Site 28 (Building 865 the Recoup Area Building) and the surrounding open land area Building 865 is a handling area used to transfer hazardous substances/wastes or petroleum products/wastes from damaged or leaking containers into undamaged containers. A small fenced-in area is located on the southwest side of Building 865. The EBS visual inspection noted that this area contained various drums (5- 10- 15- and 55 gallon) of old chemicals (oil methyl ethyl ketone and isopropanol) some with protruding rusting tops. This subparcel also includes gravel areas that were historically sprayed with pesticides herbicides and waste oil containing PCP. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD	ICs implemented via Master Lease and subsequent FOSLs Enhanced bioremediation of groundwater at the MI in design phase
33 3(6)	14 10	0 01	Building 755	This subparcel is associated with Building 755. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risk for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997 with the CERFA letter report that designated this subparcel Category 1 the BCT concurred in 2002 to change this subparcel from Category 1 to Category 6 based on the remedial actions that will be addressed by the MI RD	ICs implemented via Master Lease and subsequent FOSLs Enhanced bioremediation of groundwater at the MI in design phase
33 5(6) demolished 2002	11 10	0 02	Building 860	This subparcel is associated with Building 860. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risk for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997 with the CERFA letter report that designated this subparcel Category 1 the BCT concurred in 2002 to change this subparcel from Category 1 to Category 6 based on the remedial actions that will be addressed by the MI RD	ICs implemented via Master Lease and subsequent FOSLs Enhanced bioremediation of groundwater at the MI in design phase

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIALTION/ MITIGATION
33 6(6)HR	13 13	0 25	Spill area west of Building 737	This subparcel is associated with the open land area outside Building 737 and Site 44 (Former Wastewater Treatment Unit). A 50-gallon mineral oil (<1 ppm PCB) spill was reported in 1995 outside of Building 737. The Spill Team responded, excavated contaminated material and disposed of it in accordance with federal, state and local regulations. Site 44 (Former Waste Water Treatment Unit) was a temporary unit used to treat rainwater mixed with PCP-contaminated oil and rinse waters from decontamination during the soil removal of the PCP dip vat system in 1985. The November 1996 Environmental Baseline Survey categorized this subparcel as a Category 4. In 1997 the ECP category definitions changed so that Category 4 was no longer appropriate for petroleum product releases. In December 1998 the BCT concurred Category 4 was not appropriate, as the release involved a petroleum product and agreed to change the subparcel from Category 4 to Category 2 believing no remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002 the BCT concurred to change this subparcel from Category 2 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
33 8(6) demolished 2002	10 10	0 03	Building 863	This subparcel is associated with Building 863. The building contained a battery charging station. Material handling equipment (forklifts) was also stored in the building. The EBS visual inspection observed considerable oil stains on the concrete floor of Building 863. The BCT requested samples be taken from a nearby drainage point to determine if any releases occurred from the building. Samples results indicated no levels exceeding the BCT screening criteria. In February 1999, the BCT concurred to change this subparcel from Category 7 to Category 3 believing no remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDIAION/ MITIGATION
33 9(6) 860 and 863 demolished 2002	12 14	39.4	Open storage areas X05 X06 X07 X08 X09 X10 and X11. Buildings 737 and 720 and the open land area surrounding Buildings 720 737 753 755, 756 860 and 863	<p>This subparcel is associated with open storage areas X05 X06 X07 X08 X09 X10 and X11. Buildings 720 and 737 and the open land area surrounding Buildings 720 737 753 755 756 860 and 863. This subparcel is associated with Site 42 (Former Pentachlorophenol (PCP) Dip Vat Area) Site 43 (Former Underground PCP Tank Area) Site 46 (Pallet Drying Area) and Site 80 (Fuel and Cleaner Dispensing at Building 720). In 1985, the PCP dip vat underground storage tank associated piping and impacted soil were removed. According to interviews with Depot personnel cleaners were not dispensed from Building 720, parts cleaning solutions were used in the building. No evidence was found of a 1 000 gallon waste oil tank inside Building 720. This subparcel contains railroad tracks open storage areas and gravel areas that were historically sprayed with pesticides herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. The railroad tracks and ballasts were removed in 1999/2000. The DRC demolished Buildings 860 and 863 in 2002. This subparcel also contained a 12 000-gallon diesel aboveground storage tank west of Building 720 that was removed in 1997 and a 200-gallon gasoline underground storage tank adjacent to Building 754 that was removed in 1986. Hazardous substances and petroleum products were historically stored in open storage areas X05 X06 X07 X08 X10 X11 and X12. Transformers containing mineral oil (non PCB and PCB containing) were also stored in open storage area X07. Leaking 55-gallon drums of ethyl acetate/naphtha aromatic were reported to the Spill team which responded took the appropriate actions and disposed of all residues in accordance with federal state and local regulations. The MI Rt Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations of reuse. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the remedial actions that will be addressed by the MI RD.</p>	ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x, y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDATION/ MITIGATION
34 1(6)	24 8	4 0	Building 360	This subparcel is associated with Building 360. This building was recently constructed and has not been used for storage. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risk for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. Although EPA concurred via letter dated March 13, 1997, with the CERFA letter report that designated this subparcel Category 1, the BCT concurred in 2002 to change this subparcel from Category 1 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
34 2(6)	24 7	2 7	Open land area surrounding Building 360	This subparcel is associated with the open land area surrounding Building 360. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. In October 1997, the BCT concurred to change this subparcel from Category 7 to Category 3, believing no remedial action was required. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002, the BCT concurred to change this subparcel from Category 3 to Category 6 based on the remedial actions that will be addressed by the MI RD.	ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDIACTION/ MITIGATION
35 2(6) demolished 2000	3 5	0 43	Building 1084 and open land area surrounding this building	This subparcel is associated with Site 88 an old concrete grease rack and storage area for POLs at Building 1085 (removed) Site 29 a UST associated with the grease rack (removed 1988) Site 87 (Building 1084) in the past used for storage of DDT and other pesticides and the open land area surrounding these buildings. This subparcel contains gravel areas that were sprayed with herbicides, pesticides and waste oil containing PCP. Samples were collected from the gravel areas and results indicated levels of metals and PAHs at levels exceeding BCT screening criteria. In February 1999 the BCT concurred to change this subparcel from Category 7 to Category 6 and proceed through the removal action process. The Depot completed the removal action that included demolishing Building 1084 in August 2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002 the BCT concurred that this subparcel remains Category 6 based on the remedial actions that will be addressed by the MI ROD.	Removal action completed in 2000 ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.
35 3(6)	3 5	0 22	Building 1086	This subparcel is associated with Building 1086 that contains a spray paint booth and stored hazardous materials from 1959 through 1983/1984. This building also contains a sump. This subparcel is associated with Site 30 (Paint Spray Booths). Samples were collected from the sump and results indicated levels of metals and naphthalene. The BCT determined that the sump should be cleaned during removal actions at the surrounding parcels. In February 1999 the BCT concurred to change this subparcel from Category 7 to Category 6 and proceed through the removal action process. The Depot completed the removal action in August 2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater, and to prevent residential or daycare operations reuse. In 2002 the BCT concurred that this subparcel remains Category 6 based on the remedial actions that will be addressed by the MI ROD.	Removal action completed in 2000 ICs implemented via Master Lease and subsequent FOSLS. Enhanced bioremediation of groundwater at the MI in design phase.

# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x, y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIATION/ MITIGATION
35 4(6)	3 3	4 9	Building 1087 former sandblast waste drum storage area and the surrounding open land area	This subparcel is associated with Site 31 (Former Spray Paint Booth in Building 1087) which was used for major stock primer and enamel spray painting operations and Site 33 (Sandblasting Waste Drum Storage) which consists of an open sided metal roof shed with a gravel floor south of Building 1088 and was historically used to store 55-gallon drums containing spent sandblasting material. This subparcel also includes gravel areas that were historically sprayed with herbicides and pesticides. Surface soil samples results indicated levels of PAHs, pesticides and metals exceeding BCT screening criteria. At the February 1999 meeting, the BCT concurred that this subparcel should change from Category 7 to Category 6 and proceed through the removal action process. The Depot completed the removal action in August 2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 6 based on the remedial actions that will be addressed by the MI RD.	Removal action completed in 2000. ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.
35 5(6)	2 2	4 0	Buildings 1088 and 1091 and surrounding open land area extending to Perry Road	This subparcel is associated with Site 32 (Sandblasting Waste Accumulation Area). Buildings 1088 and 1091 as well as the open land area surrounding these buildings but not included in existing subparcels. Sample results associated with Site 32 indicated levels of chromium, lead, arsenic, and PAHs exceeding BCT screening criteria. In October 1997, the BCT concurred to change this subparcel from Category 7 to Category 6 and proceed through the removal action process. The Depot completed the removal action in August 2000. The MI RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel may contain VOC levels exceeding MCLs. The MI ROD calls for remedial actions in the form of enhanced bioremediation of groundwater as well as ICs to prevent use of fluvial aquifer groundwater and to prevent residential or daycare operations reuse. In 2002, the BCT concurred that this subparcel remains Category 6 based on the remedial actions that will be addressed by the MI RD.	Removal action completed in 2000. ICs implemented via Master Lease and subsequent FOSLs. Enhanced bioremediation of groundwater at the MI in design phase.

# **TABLE 3-6** **SUBPARCEL DESCRIPTIONS**

SUBPARCEL NUMBER AND LABEL*	LOCATION (x, y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDIALTION/ MITIGATION
36 1(6)	30 9	<0 01	Dunn Field	This subparcel is associated with Site 2 (Ammonia Hydroxide and Acetic Acid Burial Site) where a seven-pound jug of ammonia hydroxide and a one-gallon bottle of acetic acid were buried. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites
36 2(6)	30 9	0 01	Dunn Field	This subparcel is associated with Site 3 (Mixed Chemical Burial Site) where 3 000 quarts of unknown chemicals and five cubic feet of orthotoluidine dihydrochloride were buried here. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites
36 3(6)	30 9	0 02	Dunn Field	This subparcel is associated with Sites 4 and 4 1 (Petroleum, Oil and Lubricant Burial Site) where forty-five 55-gallon drums of discarded oil grease paints, and thinner were buried in two adjacent trenches. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites

# SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x, y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIATION/ MITIGATION
36 4(6)	30 9	<0 01	Dunn Field	This subparcel is associated with Site 5 (Methyl Bromide Burial Site) where three cubic feet of methyl bromide were buried. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.
36 5(6)	30 8	<0 01	Dunn Field	This subparcel is associated with Site 7 (Nitric Acid Burial Site) where 1 700 quart bottles of nitric acid were buried. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.
36 6(6)	30 8	<0 01	Dunn Field	This subparcel is associated with Site 8 (Methyl Bromide Burial Site) where 3 768 one-gallon cans of methyl bromide were buried to a depth of 7 feet. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.
36 7(6)	31 9	<0 01	Dunn Field	This subparcel is associated with Site 11 (Trichloroacetic Acid Burial Site) where 1 433 one-ounce bottles of trichloroacetic acid were buried at a depth of 6 feet. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.



# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE (acres)	FACILITY	BASIS*	REMEDATION/ MITIGATION
36 8(6)	27 8	0.06	Dunn Field	This subparcel is associated with Sites 12 and 12 1 (Sulfuric and Hydrochloric Acid Burial) where 30 pallets of discarded acid containers were buried at a depth of 8 feet. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.
36 9(6)	28 8	0.01	Dunn Field	This subparcel is associated with Site 13 (Mixed Chemical Burial) where 32 cubic yards of mixed chemicals and acids and 8 100 pounds of unnamed solids were buried at a depth of 8 feet. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.
36 10(6)	28 8	<0.01	Dunn Field	This subparcel is associated with Sites 15 and 16 1 (Unknown Acid Burial Sites) where unknown amounts of unnamed acid were buried. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.
36 11(6)	28 8	<0.01	Dunn Field	This subparcel is associated with Site 17 (Mixed Chemical Burial Site C) where an unknown amount of chemicals and medical supplies were buried. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.

# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE (acres)	FACILITY	BASIS*	REMEDIACTION/ MITIGATION
36 14(6)	31 11	0.33	Pistol range	This subparcel is associated with Site 60 (Pistol Range Impact Area and Bullet Stop) and Site 85 (Pistol Range Building and Temporary Pesticide Storage Building 1184). The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria that did not present unacceptable risks for residential recreational and industrial reuse. However, lead levels at the pistol range impact area did present unacceptable risks for residential reuse. In February 2002, the Depot elected to conduct a removal action to reduce lead levels allowing unrestricted reuse of this subparcel. The BCT concurred with the removal action decision and to change this subparcel from Category 7 to Category 6.	Removal action to reduce lead levels scheduled to occur in 2002.
36 15(6)	29 10	7.6	Open land area surrounding disposal pits	This subparcel is associated with the open land area surrounding the disposal pits, excluding existing subparcels. The boundaries for this subparcel are on the north by the fence line, on the east by the paved road, on the south by the southern edge of the asphalt pad intersecting by excluding Subparcel 36 29) and on the west by the fence line. This area contains grassy areas that were historically sprayed with pesticides and herbicides. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that VOCs in subsurface soil impacting indoor air did present unacceptable risks for industrial (along the northern fence line only) and residential reuse that groundwater beneath this subparcel contains VOCs levels exceeding MCLs, and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.
36 16(6)	29 9	0.08	Dunn Field	This subparcel is associated with Site 1 (Mustard and Lewisite Training Sets Burial Site) where nine sets of Chemical Agent Identification Sets were reportedly buried in 1955. In 1998, sampling of surface soil, subsurface soil, and groundwater around this site indicated no migration of chemical warfare materiel. In order to reduce potential risk from chemical warfare materiel, the Army determined the CWM must be removed. In June 1999, the BCT concurred to conduct a removal action and to change this subparcel from Category 7 to Category 6. The Depot completed the removal action in May 2001. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil that impact indoor air and in groundwater at levels exceeding MCLs) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. In 2002, the BCT concurred that this subparcel remains Category 6 based on the anticipated need for further remedial actions.	Removal action completed in 2001. The Dunn Field FS will address VOCs in subsurface soil and in groundwater.

# **TABLE 3-6** **SUBPARCEL DESCRIPTIONS**

SUBPARCEL NUMBER AND LABEL*	LOCATION (x, y coordinates)	APPROXIMATE SIZE (acres)	FACILITY	BASIS*	REMEDIAL/ MITIGATION
36 17(6)	30 9	0 07	Dunn Field	This subparcel is associated with Site 9 (Ashes and Metal Burial Site) where debris from Site 24 (Former Burn Site) was buried. The CWM field investigation determined this area does not contain CWM. See Appendix E for the documentation regarding this determination. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.
36 18(6)	28 9	0 61	Dunn Field	This subparcel is associated with food items with expired shelf life that were buried here. Reportedly, CAIS sets were also buried here. This subparcel is associated with Site 86. The CEHNC ordinance division and the CWM field investigation contractor have determined this area does not contain CWM. See Appendix E for documentation regarding this determination. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.
36 19(6)	28 9	0 02	Dunn Field	This subparcel is associated with food items with expired shelf life that were buried here. Reportedly, CAIS sets were also buried here. This subparcel is associated with Site 86. The CEHNC ordinance division and the CWM field investigation contractor have determined this area does not contain CWM. See Appendix E for documentation regarding this determination. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.

# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIAL ACTION/ MITIGATION
36 20(6)	31 9	0 01	Dunn Field	This subparcel is associated with 40,037 units of eye ointment that were buried here in 1955. This subparcel is associated with Site 6. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.
36 21(6)	30 8	0 07	Dunn Field	This site was discovered during the installation of monitoring well 10. Charred debris was encountered. This subparcel is associated with Site 10. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that VOCs in subsurface soil impacting indoor air did present unacceptable risks for industrial and residential reuse that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.
36 22(6)	28 8	0 01	Dunn Field	This municipal waste burial site reportedly contains paper, food, and other unnamed materials. This subparcel is associated with Site 14. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse, but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.

# **TABLE 3-6** **SUBPARCEL DESCRIPTIONS**

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDIACTION/ MITIGATION
36 23(6)	28 8	0 08	Dunn Field	Records indicate that one pallet each of sodium and sodium phosphate containers and an unknown quantity of sodium, sodium phosphate and chlorinated lime and medical supplies were buried here in 1970. This subparcel is associated with Sites 15 15 1 and 15 2. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002, the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.
36 27(6)	31 12	0 21	Dunn Field	This subparcel is associated with Site 50 (Dunn Field Northeast Quadrant Drainage Ditch) a concrete-lined drainage ditch collects stormwater runoff from surrounding areas. The Dunn Field RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for residential recreational and industrial reuse. The report also indicated that groundwater beneath the northern fence line of this subparcel contains VOCs exceeding MCLs that appear to be migrating onsite from an up gradient, offsite source. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in groundwater.
36 28(6)	30 9	0 11	Dunn Field	This subparcel is associated with Site 61 (Buried Drain Pipe Northwest Quadrant) a concrete stormwater pipe installed in the mid-1950s that collects stormwater runoff from surrounding areas. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in subsurface soil and in groundwater.

# TABLE 3-6

## SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (x y coordinates)	APPROXIMATE SIZE <sup>b</sup> (acres)	FACILITY	BASIS <sup>c</sup>	REMEDIATION/ MITIGATION
36 29(6)	23 9	7 5	Dunn Field	This subparcel is associated with Site 24 (Former Burn Site/Bomb Casing Burial Site) Site 23 (Construction Debris and Food Burial Site) and Site 63 (Fluorspar Storage - Southeastern quadrant). In 1946 railcars carrying captured German bomb casings containing sulfur mustard in route to Pine Bluff Arsenal AR from Mobile AL began leaking mustard. Upon examination of the cars, 29 bomb casings were identified as leaking. These casings were taken to one pit at Dunn Field and drained into and neutralized by a chlorinated lime (supertropical bleach) slurry. The drained casings were placed in the pit and destroyed by dynamite in case a burster remained intact. In 1998 sampling of surface soil, subsurface soil and groundwater around this site indicated no migration of chemical warfare material. In order to reduce potential risk from chemical warfare material the Army determined the CWM must be removed. In June 1999 the BCT concurred to conduct a removal action at Site 24 and concurred to change this subparcel from Category 7 to Category 6. The Depot completed the removal action in May 2001. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria (including VOCs in subsurface soil impacting indoor air) that did not present unacceptable risks for industrial reuse but did present unacceptable risks for residential reuse. The report also indicated that groundwater beneath this subparcel contains VOC levels exceeding MCLs and that burial sites within the Disposal Area are not suited for utility workers because of possible disturbance of buried wastes. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	Removal action completed in 2001. The Dunn Field FS will address VOCs in subsurface soil and in groundwater as well as burial sites.
36 30(6)	28 12	20 68	Open land area of Dunn Field excluding existing subparcels	This subparcel is associated with the open land area of Dunn Field excluding existing subparcels. This subparcel contains railroad tracks that were historically sprayed with pesticides herbicides and waste oil containing PCP. The railroad tracks and ballasts were removed in 1999/2000. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria that did not present unacceptable risks for industrial or residential reuse. The report also indicated that one surface soil sample collected within this subparcel contained an arsenic level that did present an unacceptable risk to residential reuse, but was similar to levels identified in Shelby County and will not require remedial action. The report also indicated that groundwater beneath this subparcel contains VOC levels that exceed MCLs in two locations -- along the northern fence line where groundwater appears to be migrating onsite from an up gradient offsite source and along the western fence line south of the recovery well system constructed as part of the Interim Remedial Action for groundwater. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in groundwater.

# TABLE 3-6 SUBPARCEL DESCRIPTIONS

SUBPARCEL NUMBER AND LABEL*	LOCATION (x y coordinates)	APPROXIMATE SIZE* (acres)	FACILITY	BASIS*	REMEDIAL ACTION/ MITIGATION
36 31(6)	28 13	5.04	Dunn Field 75 foot strip along Hays St from Person Ave to Dunn Ave	This subparcel is associated with an open land area of Dunn Field along Hays Street from Person Avenue to Dunn Avenue excluding Subparcel 36 26. The DRC requested this subparcel due to a Memphis road works project to expand Hays Street. This subparcel contains grassy areas that were historically sprayed with pesticides and herbicides. The Dunn Field RI Report indicated levels of several constituents exceeding BCT screening criteria that did not present unacceptable risks for residential or industrial reuse. The report also indicated that groundwater beneath the northern fence line of this subparcel contains VOC levels exceeding MCLs that appear to be migrating from an up gradient offsite source. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in groundwater
36 32 (6)	36 13	16.26	Open land area in northeast corner of Dunn Field (recreation area)	This subparcel is associated with the open land area in the northeast corner of Dunn Field, excluding Subparcels 36 14, 36 25, 36 26, 36 27 and 36 31. This subparcel is bounded on the north by the fence line on the east by Subparcel 36 31 on the west by the dirt/gravel road along the top of the ridge line and on the south by the gravel road. The Depot created this subparcel due to interest in the area as a future recreation/park area. This subparcel contains grassy areas that were historically sprayed with pesticides and herbicides. The Dunn Field RI Report indicated several constituents exceeding BCT screening criteria that did not present unacceptable risks for residential, recreational and industrial reuse. The report also indicated that groundwater beneath the northern fence line of this subparcel contains VOC levels exceeding MCLs that appear to be migrating from an up gradient offsite source. In 2002 the BCT concurred to change this subparcel from Category 7 to Category 6 based on the anticipated need for remedial actions.	The Dunn Field FS will address VOCs in groundwater

## Environmental Condition Category 7: No subparcels designated Category 7.

### Notes:

AST Aboveground storage tank  
 BCT BRAC Cleanup Team  
 BRAC Base Realignment and Closure  
 CAIS Chemical Agent Identification Sets  
 DDC Defense Distribution Center  
 DLA Defense Logistics Agency  
 DRC Depot Redevelopment Corporation  
 DDT 4,4-Dichlorodiphenyltrichloroethane  
 DRMO Defense Reutilization and Marketing Office  
 EBS Environmental Baseline Survey  
 MI Main Installation  
 PAH Poly aromatic hydrocarbon

PCB Polychlorinated biphenyl  
 PCP Pentachlorophenol  
 POL Petroleum oil and lubricant  
 ppm parts per million  
 PDO Property Disposal Office  
 RCRA Resource Conservation and Recovery Act  
 RD Remedial Design  
 RI Remedial Investigation  
 SVOC Semivolatile organic compounds  
 TPH Total petroleum hydrocarbons  
 UST Underground storage tank  
 VOC Volatile organic compounds

a) Subparcel label definitions are as follows  
 PS Petroleum storage  
 PR Petroleum release or disposal

HR Hazardous substance release or disposal  
 HS Hazardous substance storage

### Defense Distribution Center (Memphis)

Rev 1 BRAC Cleanup Plan Version 6

September 2002

# TABLE 3-6 SUBPARCEL DESCRIPTIONS

Qualified subparcel label definitions are as follows

A	Asbestos containing material	P	Polychlorinated biphenyls
R	Radon	X	UXO and/or ordnance fragment
RD	Radionuclides	(P)	Possible (unverified)

b) Acreage figures are approximate they have been calculated using AutoCAD Release 13

c) BCT screening criteria were established by the BCT during the August 1997 BCT meeting and were based on preliminary risk based concentrations, the National Contingency Plan Safe Drinking Water Act maximum contaminant levels and, for some metals regional background levels



**TABLE 3-7  
UNCONTAMINATED CATEGORY 1 SUBPARCELS**

710 228

SUBPARCEL NUMBER	MAP LOCATION	BUILDING NUMBER
1 1	32 10	1
1 2	32,13	2
1 3	NA	129
1 4	31,13	139
1 5	34,12	144
1 6	32,13	145
1 7 demolished	31,10	155
2 1	34,6	176
2 2	NA	178
2 3	34,5	179
2 4	34,5	181
2 5	NA	183
2 6	34,4	184
3 1	32,2	193
3 2	31,2	195
3 3	31,2	196
3 4	31,2	198
4 1 demolished	30,10	252
4 2	31 7	270
4 3	31,7	271
4 11 demolished	29,9	253
6 3	27,12	349
8 2	29,15	229
8 3	29,14	230
8 4	26,15	329
8 5	26,13	330
9 2	26 15	429
9 4	23 12	449
9 5	23 11	450
10 4	20 12	549
10 6	17,11	650

**TABLE 3-7  
UNCONTAMINATED CATEGORY 1 SUBPARCELS**

710 229

SUBPARCEL NUMBER	MAP LOCATION	BUILDING NUMBER
11 3	20,14	530
11 4	16,13	630
13 1	33,16	23
13 2	NA	24
13 3	32,16	25
13 4	31,17	210
14 1	27,19	22
15 1	10,18	15
16 2 demolished	17,10	559
17 1	Relocated to open area near Building 925 4,16	459
21 1	17 3	690
23 1	19,2	7
23 2	13,2	8
23 3	11 4	787
23 4	NA	795
23 5	5,2	S995
29 1	3,10	9
30 4	4,11	949
33 1	13,16	727
33 2	14,10	754
33 3	14,10	755
33 4	14,9	756
33 5	11,10	860
33 10	14 10	753
34 1	24.8	360

**TABLE 3-8**  
**QUALIFIED SUBPARCEL DESCRIPTIONS**

QUALIFIED SUBPARCEL NUMBER AND LABEL <sup>a</sup>	LOCATION (X,Y COORDINATES)	APPROXIMATE SIZE (ACRES) <sup>b</sup>	BUILDING NUMBER	BASIS	REMEDATION/ MITIGATION
1 1-1Q-A/L(P)	32,10	0 01	1	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
1 2-2Q-A/L(P)	32,13	0 01	2	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
1 3-129Q-A(P)	NA	<0 01	129	ACM possible based on the year of construction	No current mitigation
1 4-139Q-A/L(P)	NA	<0 01	139	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
1 5-144Q-A/L(P)	34,12	0 31	144	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
1 6-S145Q-A/L(P)	NA	0 02	S145	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
2 1-176Q-A/L	34,6	0 11	176	ACM and LBP present, confirmed by previous sampling and testing	LBP removed/ encapsulated No further mitigation
2 2-S178Q-A/L(P)	NA	0 03	S178	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	LBP removed/ encapsulated No further mitigation
2 3-179Q-A/L	33,5	0 11	S179	ACM and LBP present, confirmed by previous sampling and testing	LBP removed/ encapsulated No further mitigation
2 4-181Q-A/L	34,5	0 11	181	ACM and LBP present, confirmed by previous sampling and testing	LBP removed/ encapsulated No further mitigation
2 5-S183Q-A/L(P)	NA	0 11	S183	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	LBP removed/ encapsulated No further mitigation
2 6-184Q-A/L	34,4	0 11	184	ACM and LBP present, confirmed by previous sampling and testing Lead from exterior paint present in soil at levels greater than 400 ppm	Soil was removed No further mitigation

**TABLE 3-8**  
**QUALIFIED SUBPARCEL DESCRIPTIONS**

3 2-S195Q-A/L	31.2	0 10	S195	ACM and LBP present, confirmed by previous sampling and testing	No current mitigation
3 3-196Q-A/L(P)	31.2	0 02	196	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
3 4-S198Q-A/L(P)	31.2	0 01	S198	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
3 5-398Q-A/L(P)	29.4	0 01	398	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
4 2-270Q-A/L(P)	31.7	0 33	270	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
4 3-S271Q-A/L(P)	31.7	0 03	S271	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
4 4-260Q-A/L(P)	30.9	0 15	260	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
4 8-263Q-L(P)	30.9	0 02	263	LBP possible based on the year of construction	No current mitigation
4 13-265Q-A/L(P)	31.8	0 18	265	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
5 1-T272Q-L(P)	29.7	0 03	T272	LBP possible based on the year of construction	No current mitigation
5 2-274Q-A/L(P)	29.7	0 31	274	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
6 2-250Q-A/L(P)	29.11	2 8	250	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
6 3-349Q-A/L(P)	27.12	2 8	349	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
6 4-350Q-A/L(P)	26.11	2 8	350	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
7 2-249Q-A/L(P)	29.12	2 8	249	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation

**TABLE 3-8**  
**QUALIFIED SUBPARCEL DESCRIPTIONS**

					sampling and testing LBP possible based on the year of construction	No current mitigation
8 2-229Q-A/L(P)	29,15	2 8	229	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation	
8 3-230Q-A/L(P)	30,14	2 8	230	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation	
8 4-329Q-A/L(P)	26,15	2 8	329	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation	
8 5-330Q-A/L(P)	26,13	2 8	330	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation	
9 2-429Q-A/L(P)	23,15	2 8	429	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation	
9 3-430Q-A/L(P)	23,13	2 8	430	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation	
9 4-449Q-A/L(P)	23,12	2 8	449	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation	
9 5-450Q-A/L(P)	23,11	2 8	450	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation	
10 1-649Q-A/L(P)	16,12	2 8	649	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation	
10 4-549Q-A/L(P)	20,12	2 8	549	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation	
10 5-550Q-A/L(P)	19,11	2 8	550	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation	
10 6-650Q-A/L(P)	17,11	2 8	650	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation	
11 2-529Q-A/L(P)	19,15	2 8	529	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation	

**TABLE 3-8**  
**QUALIFIED SUBPARCEL DESCRIPTIONS**

				the year of construction	
11 3-530Q-A/L(P)	20,14	2 8	530	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
11 4-630Q-A/L(P)	16,13	2 8	630	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
12 2-629Q-A/L(P)	16,15	2 8	629	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
13 1-23Q-A/L(P)	33,16	<0 01	23	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
13 2-24Q-L(P)	NA	<0 01	24	LBP possible based on the year of construction	No current mitigation
13 3-25Q-L(P)	32,16	<0 01	25	LBP possible based on the year of construction	No current mitigation
13 4-210Q-A/L(P)	31,17	5 5	210	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
14 1-22Q-A/L(P)	27,19	<0 01	22	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
15 1-15Q-A/L(P)	10,18	<0 01	15	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
15 2-S308Q-A/L(P)	26,18	0 01	S308	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
15 3-319Q-A/L(P)	26,16	0 41	319	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
15 6-301Q-A(P)/L(P)	18,17	<0 01	301	ACM and LBP possible based on the year of construction	No current mitigation
15 6-S309Q-A/L(P)	25,18	0 01	S309	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
19 1-S468Q-L(P)	21,8	0 22	S468	LBP possible based on the year of construction	No current mitigation

**TABLE 3-8**  
**QUALIFIED SUBPARCEL DESCRIPTIONS**

19 2-S465Q-A	22.7	0 01	S465	ACM present, confirmed by previous sampling and testing	No current mitigation
19 3-S469Q-L(P)	22.8	0 22	S469	LBP possible based on the year of construction	No current mitigation
20 2-670Q-A/L(P)	17.6	5 0	670	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
20 3-470Q-A/L(P)	20.7	5 0	470	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
20 4-489Q-A/L(P)	21.5	5 0	489	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
21 1-690Q-A/L(P)	17.3	5 0	690	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
21 2-490Q-A/L(P)	23.3	5 0	490	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
21 3-689Q-A/L(P)	15.5	5 2	689	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
21 4-685Q-A/L(P)	15.4	0 73	685	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
23 2-8Q-A/L(P)	13.2	0 02	8	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
23 4-795Q-L(P)	NA	0 01	795	LBP possible based on the year of construction	No current mitigation
23 8-793Q-L(P)	11.3	0 04	793	LBP possible based on the year of construction	No current mitigation
24 3-770Q-A/L(P)	12.8	0 57	770	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
24 3-T771Q-A/L(P)	11.7	0 02	T771	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
26 2-S970Q-A/L(P)	6.4	6 3	S970	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation

**TABLE 3-8**  
**QUALIFIED SUBPARCEL DESCRIPTIONS**

				the year of construction	
27 2-S972Q-A/L(P)	4,4	6 3	S972	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
28 2-S1089Q-A(P)/L(P)	3,5	0 91	S1089	ACM and LBP possible based on the year of construction	No current mitigation
29 1-9Q-A/L(P)	3,10	0 01	9	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
29 2-801Q-A/L(P)	4,18	0 01	801	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
33 3-755Q-A/L(P)	14,10	0 01	755	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
33 4-756Q-A	14,9	0 06	756	ACM present, confirmed by previous sampling and testing	No current mitigation
33 9-717Q-A/L(P) This building is in Subparcel 15 6	12,14	0 01	717	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
33 9-720Q-A/L(P)	14,15	0 11	720	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
33 9-S737Q-A/L(P)	13,13	0 13	737	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
33 10-753Q-A/L(P)	14,10	0 01	753	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
35 1-S1090Q-A/L(P)	3,3	0 02	S1090	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
35 3-1086Q-L(P)	3,5	0 22	1086	LBP possible based on the year of construction	No current mitigation
35 4-1087Q-A/L(P)	3,3	0 11	1087	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
35 4-1088Q-L(P)	3,3	0 05	1088	LBP possible based on the year of construction	No current mitigation



**TABLE 3-8**  
**QUALIFIED SUBPARCEL DESCRIPTIONS**

35 5-S1091Q-A/L(P)	2.2	0 02	S1091	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	No current mitigation
36 14-1184Q-L(P)	31.12	0 01	1184	LBP possible based on the year of construction	No current mitigation

**Notes**

a) Parcel label definitions are as follows

PS = petroleum storage

PR = petroleum release or disposal

HS = hazardous substance storage

HR = hazardous substance release or disposal

Qualified parcel label definitions are as follows

A = asbestos containing material

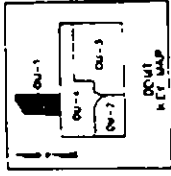
L = lead-based paint = polychlorinated biphenyls

P = polychlorinated biphenyls

R = Radon

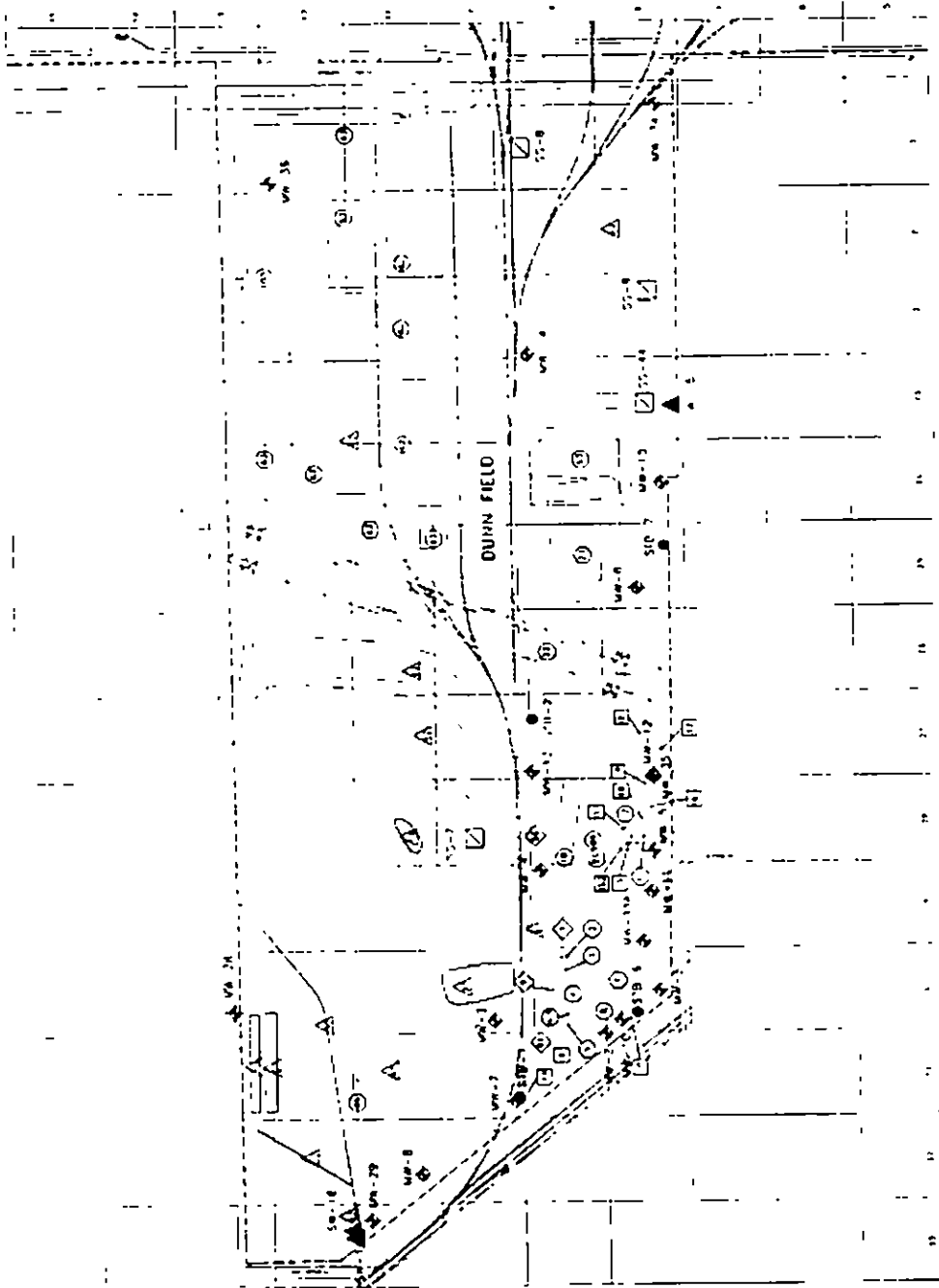
X = UXO and/or ordnance fragments

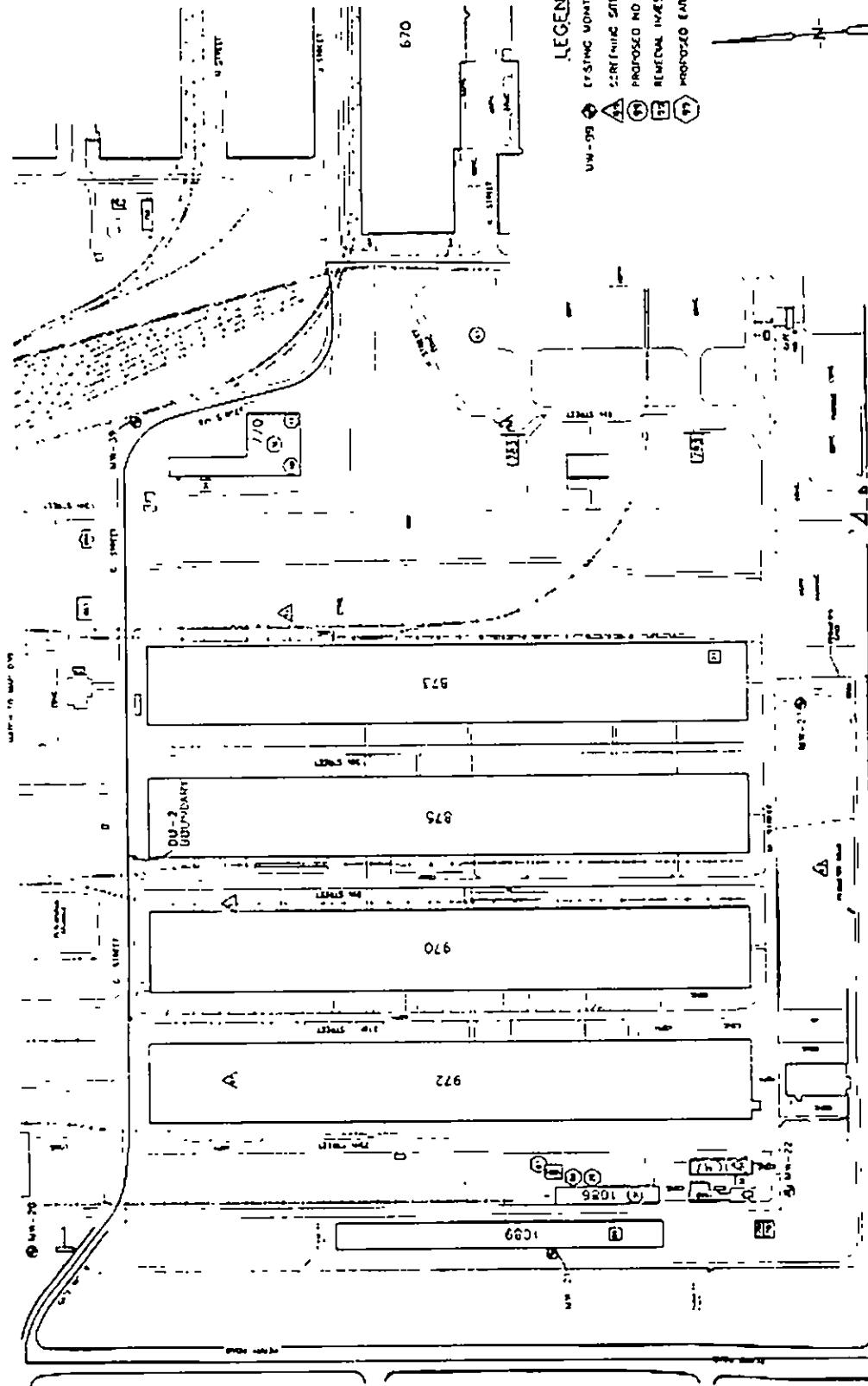
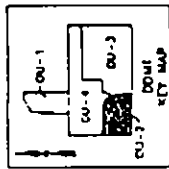
b) Acreage figures are approximate, they have been calculated using AutoCad Release 13



# LEGEND

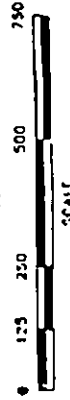
- INSULATION PROPERTY BOUNDARY
- ASPHALT ROAD
- GRAVEL ROADS
- PIPELINES, LAKES, POND, DITCHES, ETC
- RAILROAD TRACKS
- EXISTING MONITORING WELL
- EXISTING SON PROBE LOCATION
- EXISTING SLOTTED SON BEARING LOCATION
- EXISTING SURFACE SAMPLE LOCATION
- EXISTING "UNSAFE" WATER SAMPLE LOCATION
- SCREENING SITE
- PROPOSED AND FURTHER ACTION SITE
- REMEDIATION INVESTIGATION SITE
- CHEMICAL WASTE MANAGEMENT PLAN SITE
- PROPOSED EARLY REMEDIAL SITE

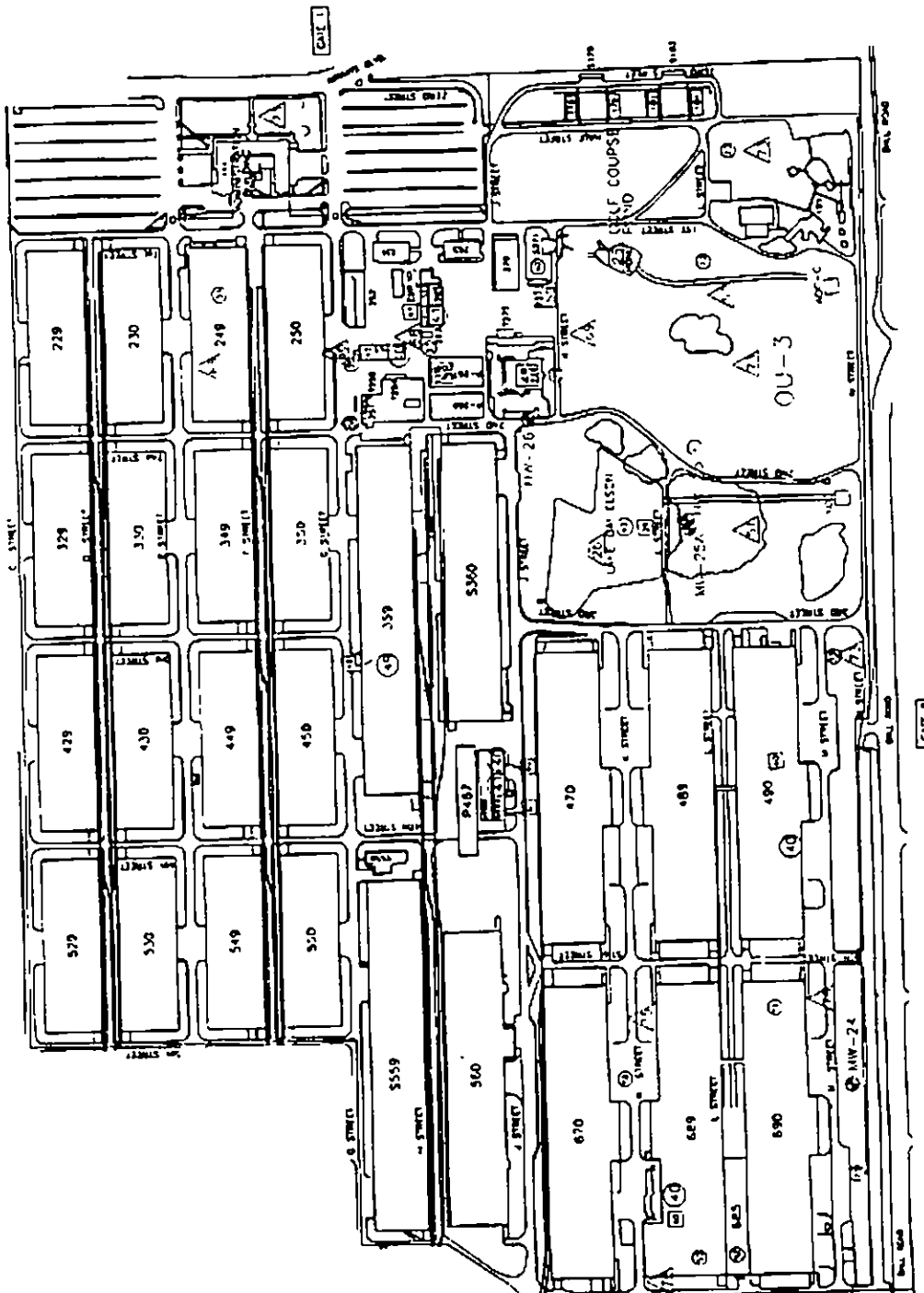




LEGEND

- UW-99 EXISTING MONITORING WELL
- DU-2 DU-3
- DU-4 DU-5
- DU-1 DU-6
- DU-7 DU-8
- DU-9 DU-10
- DU-11 DU-12
- DU-13 DU-14
- DU-15 DU-16
- DU-17 DU-18
- DU-19 DU-20
- DU-21 DU-22
- DU-23 DU-24
- DU-25 DU-26
- DU-27 DU-28
- DU-29 DU-30
- DU-31 DU-32
- DU-33 DU-34
- DU-35 DU-36
- DU-37 DU-38
- DU-39 DU-40
- DU-41 DU-42
- DU-43 DU-44
- DU-45 DU-46
- DU-47 DU-48
- DU-49 DU-50
- DU-51 DU-52
- DU-53 DU-54
- DU-55 DU-56
- DU-57 DU-58
- DU-59 DU-60
- DU-61 DU-62
- DU-63 DU-64
- DU-65 DU-66
- DU-67 DU-68
- DU-69 DU-70
- DU-71 DU-72
- DU-73 DU-74
- DU-75 DU-76
- DU-77 DU-78
- DU-79 DU-80
- DU-81 DU-82
- DU-83 DU-84
- DU-85 DU-86
- DU-87 DU-88
- DU-89 DU-90
- DU-91 DU-92
- DU-93 DU-94
- DU-95 DU-96
- DU-97 DU-98
- DU-99 DU-100





# LEGEND

- EXISTING MONITORING WELL
- SCREENING SITE
- PROPOSED NO FURTHER ACTION SITE
- REMEDIAL INVESTIGATION SITE
- FEASIBILITY STUDY SITE

710 239

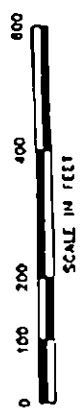
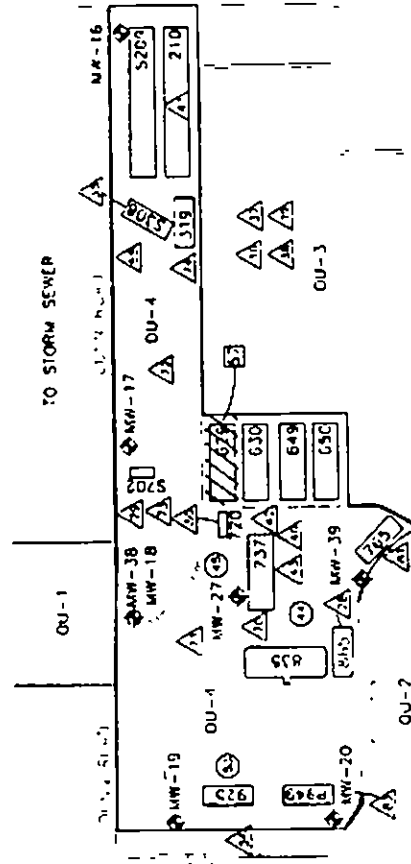
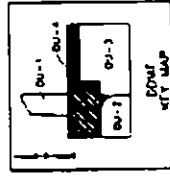


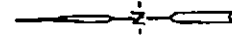
FIGURE 3-3

OU-3 SITE LOCATIONS



**LEGEND**

- ◻ EXISTING MONITORING WELL
- ◻ SITE S7 AND SURROUNDING AREA
- ◻ SCREENING SITE
- ⊙ PROPOSED NO FURTHER ACTION SITE



OU-4 SITE LOCATIONS







**SECTION FOUR****INSTALLATION-WIDE STRATEGY FOR  
ENVIRONMENTAL RESTORATION****4.0 INSTALLATION-WIDE STRATEGY FOR ENVIRONMENTAL RESTORATION**

This section describes and summarizes the installation-wide environmental restoration and compliance strategy for the Depot.

Prior to closure of the Depot on September 30, 1997, restoration projects were under way to identify, characterize and remediate environmental contamination at the Depot. The restoration strategy focused on the protection of human health and the environment at the Depot, taking into consideration the ongoing and continued use of the Depot. With the closure announcement, the restoration strategy for the Depot changed from supporting an active military installation to responding to property disposal (transfer) and reuse considerations. The Depot environmental restoration strategy was therefore modified to address closure and reuse while still focusing on protection of human health and the environment.

The overall environmental and compliance strategy is the responsibility of the Defense Distribution Center (Memphis). The Depot's BRAC strategy is designed to ensure that all regulatory requirements are met, and that adequate and cost-effective restoration activities are implemented as quickly as possible to provide expedited transfer and reuse in compliance with U. S. Army and DRC redevelopment goals. The current strategy provides for the completion of all site restoration activities on the BRAC parcel by 2008 with the exception of groundwater remediation, which is anticipated to continue until 2015.

The following sections describe various elements of the Depot BRAC environmental restoration strategy, including area designation strategy, compliance strategy, and natural and cultural resources strategy.

**4.1 AREA DESIGNATION STRATEGY**

The history of the environmental restoration program at the Depot has three distinct periods. These periods are the Installation Restoration period, the National Priorities List (or "Superfund") period, the BRAC period and the Risk Assessment period. Each of these periods has introduced some method of grouping or segregating portions of the facility due to real estate, environmental or risk assessment issues. The group designations include sites, Operable Units (OUs), BRAC subparcels and Functional Units (FUs). The following subsections reflect the relationship among IR sites, OUs, BRAC subparcels and FUs. The priorities and sequence for cleanup were determined by the BCI.



**SECTION FOUR****INSTALLATION-WIDE STRATEGY FOR  
ENVIRONMENTAL RESTORATION**

and the DRC to reflect a balance between risk to human health and the environment and the reuse priority of a parcel awaiting remedial action.

**4.1.1 Zone Designations**

Development of sites began with the 1981 Installation Assessment of Defense Depot Memphis, Tennessee (USATHAMA 1981) and continued through the Environmental Audit No. 43-21-1387-86 (USALHA July 1985), the RCRA Facilities Assessment (RFA) (A T Kearney 1990), and a Remedial Investigation (Law 1990). All areas of potential contamination identified in these studies have been assigned site numbers. Sites on Dunn Field are now being evaluated through the CERCLA remedial investigation/feasibility study process. Sites on the Main Installation have completed the remedial investigation/feasibility study, proposed plan and record of decision process and are now in the remedial design/remedial action process. Sites on Dunn Field have completed the remedial investigation phase and are now in the feasibility study phase.

When the Depot was placed on the National Priorities List in 1992 and during subsequent federal facilities agreement negotiations, the Depot was broken into four CERCLA operable units based on the geographic layout of the facility. These units are Operable Unit 1 (OU-1), OU-2, OU-3 and OU-4. Each IR site was included in one of the four operable units.

When the facility was designated as a BRAC closure facility in 1995 and the Memphis Depot Redevelopment Agency was formed, the MDRA along with the Depot broke the facility property into parcels that were known as the BRAC parcels and subparcels. These parcels and subparcels were developed from a reuse and environmental restoration perspective. Thirty-six parcels were formed. Areas of environmental concern within each parcel were broken in subparcels, 189 in all, and represent buildings, spill locations, burial locations, former pistol ranges, open land areas and sites. In some cases, the BRAC parcel contains both open spaces and buildings. This BRAC parcel system has allowed for the IR sites to be compared directly to BRAC parcels for reuse purposes and to facilitate sampling/analysis, CERFA environmental condition of property category decision-making, leasing and, ultimately, transfer.

Rather than assess each parcel individually to evaluate risk to human health and the environment, the BRAC parcels and sites were grouped into Functional Units on the Main Installation and Areas at Dunn Field. Each FU or Area represents an area where human health exposure is generally uniform due to consistent historical use and anticipated reuse.

**SECTION FOUR****INSTALLATION-WIDE STRATEGY FOR  
ENVIRONMENTAL RESTORATION****4.1.2 Sequence**

The sequence is based primarily on the DRC's order of preference. The DRC notifies the BCT when certain subparcels become high priority for reuse and this will continue as the DRC attracts business and organizations to locate at the Depot. Table 4-1 lists primary deliverables and projected deliverable dates for the environmental restoration investigation.

**4.1.3 Early Actions Strategy**

The Depot is implementing the ROD for Interim Remedial Action for Groundwater at Dunn Field to control the migration of chlorinated solvents identified in the groundwater. In 1998, the Depot completed a removal action of dieldrin-impacted soil from the military family housing area (Subparcel 2.7) and of PCB impacted soil from the open land area surrounding Building 274 (RI Site 48/Subparcel 5.2). In 2000, the Depot completed a removal action of metals and PAH impacted soil and interior cleaning of buildings at the old paint shop and maintenance area in Parcels 35 and 28. In 2001, the Depot completed a removal action of suspected chemical warfare materiel from Dunn Field (Subparcels 36.16 and 36.29). Prior to execution of the Main Installation ROD, DLA elected to conduct a removal action of lead contaminated soil at the south end of Building 949 (Subparcel 30.3). The Depot plans to conduct a removal action in 2002 at the former pistol range backstop (Subparcel 36.14) on Dunn Field to reduce lead levels and allow for unrestricted reuse. Other early actions will be initiated when appropriate to accelerate the cleanup process. Candidates for early removal actions are listed in Environmental Condition of Property Category 6 within Table 3-6.

**4.1.4 Remedy Selection Approach**

Remedies for the restoration of the Depot will be selected in accordance with CERCLA, the NCP and the FFA.

**4.2 COMPLIANCE PROGRAM STRATEGY**

This section describes the strategies for addressing compliance-related environmental issues at the Depot. These environmental compliance strategies have been developed to ensure that the Depot complies with federal, state and local regulatory requirements, DOD and DLA directives, and other relevant regulations throughout the BRAC closure and property transfer process.

**SECTION FOUR****INSTALLATION-WIDE STRATEGY FOR  
ENVIRONMENTAL RESTORATION****4.2.1 Storage Tanks**

Historically, there have been 37 storage tanks in use at the Depot. FIDIC approved the Depot's UST closure applications in December 1998. The Depot no longer maintains USTs or ASTs.

***Underground Storage Tanks***

Historically, there were 28 USTs used at the Depot. Beginning in the 1980s, the Depot implemented a program to remove or close in place tanks that were identified as leaking or not in use. Soil samples and groundwater samples (if groundwater was encountered) were generally not collected to confirm the absence of contamination for the USTs removed or closed in place during the 1980s because the regulatory agencies did not require sampling. The areas where confirmation sampling did not occur either became IR sites or BRAC subparcels and were sampled accordingly.

Neither the 1993 Pickering UST survey nor the 1996 EBS could confirm the location of a suspected UST at Building 229. For this unknown tank, the Depot confirmed through a records/document review that a tank did not exist at Building 229.

In December 1998, the Depot received closure approval from TDEC for the two regulated USTs removed in July 1998. Table 3-4 provides information on the USTs.

***Aboveground Storage Tanks***

Historically, there were nine ASTs used at the Depot. Beginning in the 1980s, the Depot implemented a program to remove or close in place tanks that were leaking or not in use. As of September 2001, the Depot no longer maintains any ASTs. The DRC has taken possession of any remaining ASTs.

**4.2.2 Hazardous Materials/Waste Management**

Hazardous waste compliance programs at the Depot are conducted under the federal requirements found in RCRA Subtitle C, 40 CFR 260 through 269, 40 CFR 117, 49 CFR 171 et seq. and TDEC hazardous waste management rules. The Defense Logistics Agency has delegated responsibility for management and transportation of hazardous waste to the contractors conducting CERCLA design and removal/remedial actions. The Depot's waste management practices are conducted in accordance with the waste management portions of sampling, removal or remedial action plans.

**SECTION FOUR****INSTALLATION-WIDE STRATEGY FOR  
ENVIRONMENTAL RESTORATION**

TDHC closed the Depot's hazardous waste container storage portion of the permit effective October 22, 1998. The Depot decontaminated Building 308 in 2001 and will not renew the RCRA permit.

**4.2.3 Solid Waste Management**

The Depot no longer operates solid waste management compliance programs.

**4.2.4 Polychlorinated Biphenyls**

The Depot no longer operates PCB management compliance programs.

In 1993, the Depot implemented a program to identify PCB-containing equipment and to replace the PCB-containing equipment with non-PCB-containing equipment. The results of the program are presented in Appendix I. As of October 1996, the Depot had replaced all equipment confirmed to contain PCBs with non-PCB equipment, with the exception of fluorescent light ballasts that may or may not contain PCBs.

On December 16, 1993, a transformer oil spill was reported at Building 469. Approximately 6 ounces of material was spilled on the south wall and floor near the entrance. The sheet rock wall and concrete floor absorbed some of the oil. The Spill Team responded, applied absorbent and disposed of the residue in accordance with federal, state and local regulations. Samples were collected from the absorbent and concrete and results indicated PCB-1242. According to the Spill Team Leader on the scene during spill response and sampling, the effected area was removed during sampling operations. In February 1999, the BCT conducted a walk-through of the building and was unable to locate the spill area. In May 1999, the BCI agreed that no further evidence of the spill remained.

**4.2.5 Asbestos**

The Depot no longer operates asbestos containing material management/compliance programs. Until 2001, asbestos-containing material was managed in compliance with the DA guidance, "Lead-Based Paint and Asbestos in U.S. Army Properties Affected by Base Realignment and Closure," and the DOD memorandum entitled "Asbestos, Lead Paint, and Radon Policies at BRAC Properties."

Friable and non-friable asbestos-containing material in good condition was managed in place. All friable asbestos that posed a risk to human health was removed or encapsulated. Asbestos inspections were conducted as needed.

**SECTION FOUR****INSTALLATION-WIDE STRATEGY FOR  
ENVIRONMENTAL RESTORATION****4.2.6 Radon**

Based on the results of the radon testing conducted in 1995, radon levels in structures at the Depot are below the EPA action level; therefore, no further testing or abatement is planned. The results of the survey are provided in Appendix F.

**4.2.7 RCRA Facilities**

Solid waste management units were identified under the RCRA process at the Depot. The CERCLA process will address the corrective action for each solid waste management unit.

TDEC closed the Depot's hazardous waste container storage portion of the RCRA permit effective October 22, 1998. The Depot decontaminated Building 308 in 2001 and will not renew the RCRA permit.

**4.2.8 NPDES Permits**

The Depot requested and received from TDEC termination of the NPDES permit effective June 29, 2001.

**4.2.9 Oil/Water Separators**

There are two oil/water separators remaining at the Depot that were left in place but are no longer maintained by the Depot. One separator was removed when Building 253 was demolished by the DRC during construction of the entrance boulevard.

**4.2.10 Unexploded Ordnance**

Three areas at the Depot were identified as being of concern because of potential UXO. Two areas were reportedly used as pistol ranges. Before construction of the golf course, a pistol range was reportedly located near what is now the ninth hole of the golf course. The second pistol range is located in the Dunn Field area. The third area, an ordnance burn area, is located in the Dunn Field area. The Depot completed sampling for the area at the Main Installation and results indicated no unexploded ordnance; therefore, no remedial action for unexploded ordnance is required at this site. The Depot completed sampling for the areas at Dunn Field and results indicated no unexploded ordnance at the ordnance burn area. The Depot has completed remedial investigation sampling at the Dunn Field areas and results indicated no unexploded ordnance.

**SECTION FOUR****INSTALLATION-WIDE STRATEGY FOR  
ENVIRONMENTAL RESTORATION****4.2.11 Pesticides**

The Depot completed the remedial investigation that collected samples to evaluate the lateral extent of pesticide contamination at the Main Installation. Sample results indicated dieldrin levels at the golf course and recreation areas were within the range considered acceptable for recreational use and levels across the Main Installation were acceptable for industrial use in accordance with EPA's risk assessment guidance and Region III risk-based concentrations. Dieldrin impacted soil was removed from the former military family housing area in 1998. The Main Installation ROD recommended remedial action in the form of institutional controls across the Main Installation restricting residential use (including day care operations) due to dieldrin levels. The Depot continues to evaluate the impact of pesticide use at Dunn Field. Areas requiring remediation will be determined and remediation will be implemented if necessary.

**4.2.12 Lead-Based Paint**

Lead-based paint at the Depot was managed in accordance with DA policy guidance, "Lead-Based Paint and Asbestos in U.S. Army Properties Affected by Base Realignment and Closure," and the DOD memorandum entitled "Asbestos, Lead Paint, and Radon Policies at BRAC Properties."

A comprehensive LBP survey was conducted at the Depot in 1995. Lead-based paint abatement occurred at the former military family housing area in 1997, 1998 and 1999. No further abatement is anticipated.

**4.3 NATURAL AND CULTURAL RESOURCES STRATEGY**

The Depot is prepared to implement a program as applicable for the preservation of natural and cultural resources. The EA for a Master Interim Lease at the Depot was completed in September 1996. The EA for Disposal and Reuse was completed in February 1998. The EA identified if the following were found at the Depot: archaeological resources, historical structures and resources, Native American resources, threatened and endangered species, sensitive habitats, wetlands, surface waters, floodplains and paleontological resources.

**4.3.1 Archaeological Resources**

No archaeological resources were identified at the Depot. In April 1997 U.S. Army Corps of Engineers, Ft. Worth District conducted an archaeological survey of Dunn Field and the golf course. According to the "Archeological Survey of Two Parcels at Defense Distribution Depot Memphis,

**SECTION FOUR****INSTALLATION-WIDE STRATEGY FOR  
ENVIRONMENTAL RESTORATION**

Tennessee" (Prewitt & Associates, 1997), no evidence of archaeological resources was found at the Depot.

**4.3.2 Historical Structures and Resources**

The Depot has properties eligible for listing on the National Register of Historic Places (NRHP). In 1996, U S Army Corps of Engineers, Ft Worth District, conducted a cultural resources survey and identified 20 World War II vintage warehouses (known as the 20 Typicals) as potentially eligible for the NRHP. The Tennessee State Historic Preservation Officer (TNSHIPO) determined that the 20 Typicals as well as three World War II vintage guard stations (Buildings 9, 22 and 23) were eligible for listing on the NRHP. No nomination has been made to date. The Army Material Command, TNSHIPO and Advisory Council on Historic Places entered into a Memorandum of Agreement regarding these eligible buildings. The DRC concurred with this Memorandum of Agreement.

**4.3.3 Native American Resources**

No Native American resources have been found at the Depot.

**4.3.4 Threatened and Endangered Species**

No threatened and endangered species have been identified at the Depot.

**4.3.5 Sensitive Habitats**

No sensitive habitats have been identified at the Depot.

**4.3.6 Wetlands**

No wetlands have been identified at the Depot.

**4.3.7 Surface Waters**

There are two bodies of water located at the Depot. Both bodies of water (Lake Danielson and a golf course pond) are used to store water for firefighting purposes. Lake Danielson, approximately 4 acres in area, is located in the northwest corner of the golf course, and the golf course pond is located on the northeast corner of the golf course.

**SECTION FOUR****INSTALLATION-WIDE STRATEGY FOR  
ENVIRONMENTAL RESTORATION****4.3.8 Floodplains**

The Depot is located outside the 500-year floodplain.

**4.3.9 Paleontological Resources**

No paleontological resources have been identified at the Depot

**4.4 COMMUNITY INVOLVEMENT/STRATEGY**

The Depot prepared a community relations plan dated June 1999 to facilitate communication among the Depot; other federal, state or local agencies; and interested groups and other community residents concerning BRAC closure and environmental restoration activities at the Depot. This plan should ensure that all involved or interested parties are provided accurate, consistent information in a timely manner concerning related cleanup activities, contaminants and possible effects of any contamination, and offers mechanisms that allow all parties to provide input into the environmental restoration decision

The Depot BCT has adopted the following strategy to support a proactive community relations program in accordance with the CERCLA requirements:

- Inform interested citizens and local officials about the progress of remedial activities.
- Provide opportunities for the public to be involved in planning remedial actions at the site
- Keep local residents and federal, state and local officials informed in a timely manner of major findings or the remedial actions to be conducted at the Depot
- Provide local residents, and federal, state and local officials with an opportunity to review and comment on the studies conducted at the Depot and on suggested remedial action alternatives and decisions
- Be sensitive to and informed about changes in community concerns, attitudes, information needs and activities regarding the Depot. Use those concerns as factors when evaluating modifications to the community relations plan as necessary to address these changes



**SECTION FOUR****INSTALLATION-WIDE STRATEGY FOR  
ENVIRONMENTAL RESTORATION**

- Effectively serve the community's information needs and address citizen inquiries through prompt release of information via the media and other information dissemination techniques
- Provide timely responses to inquiries and requests for media interviews and briefings to facilitate fair and accurate reporting of restoration activities at the Depot.
- Enhance and/or maintain, through an active public affairs program, a climate of understanding and trust with the aim of providing information and opportunities for comment and discussion
- Provide a single point of contact for dissemination of information regarding the progress of the contamination assessments, restoration actions and other decisions at the Depot.
- Identify issues and potential areas of concern and develop and implement objective means to avoid or resolve conflicts.

The Restoration Advisory Board (RAB), information repositories, public meetings, public comment periods and the newsletter support this strategy.

**TABLE 4-1  
ENVIRONMENTAL DOCUMENT STATUS**

710 253

ACTIVITY	AGENCY	DRAFT REPORT	FINAL REPORT
Environmental Baseline Survey	CESAM/Woodward-Clyde	May 16, 1996	November 1996
BRAC Cleanup Plan	CESAM/Woodward-Clyde	October 10, 1996	November 1996
BRAC Cleanup Plan Version 2	Memphis Depot Caretaker	September 1998	October 1998
BRAC Cleanup Plan Version 3	Memphis Depot Caretaker	September 1999	October 1999
BRAC Cleanup Plan Version 4	Memphis Depot Caretaker	September 2000	October 2000
BRAC Cleanup Plan Version 5	Memphis Depot Caretaker	September 2001	October 2001
Environmental Assessment – Leasing	CESAM/Tetra Tech	August 1996	September 1996
Environmental Assessment – Disposal	CESAM/Tetra Tech	November 1996	February 1998
Radiological Survey	DDRE	August 16, 1996	September 13, 1996
Cultural/Natural Resources Surveys	CESWF	October 31, 1996	November 1997
Wetland Determination	CESWF/CELMM		July 23, 1996
Section 106 Review	CESWF/HUD/Tennessee Historical Commission/TRC Moriah	October 31, 1996	June 7, 1997
Lead-Based Paint Survey	CEMVM/Barge, Waggoner, Sumner & Cannon	December 1995	April 1996
Asbestos Survey	CEMVM/Pickering Inc		January 1994
PCB Survey	DDMT-W		1993
Radon Survey	ASCE-WP		March 8, 1996
UST Survey	CEMVM/Pickering Inc		January 1994
Community Relations Plan	DDSP-F/Frontline	September 1998	June 1999
RI/FS Work Plans	CEHNC/CH2M Hill	1995	1995
Main Installation RI Report	CEHNC/CH2M Hill	September 1999	January 2000
Main Installation FS Report	CEHNC/CH2M Hill	November 1999	July 2000
Dunn Field RI Report	CEHNC/CH2M Hill	November 2001	June 2002
Dunn Field FS Report	CEHNC/CH2M Hill	June 2002	October 2002
Main Installation Proposed Remedial Action Plan	CEHNC/CH2M Hill	April 2000	August 2000
Dunn Field Proposed Remedial Action Plan	CEHNC/CH2M Hill	November 2002	April 2003
Interim Record of Decision (Groundwater at Dunn Field)	CEHNC/CH2M Hill		April 1996
Main Installation Record of Decision	CEHNC/CH2M Hill	September 2000	September 2001

**TABLE 4-1  
ENVIRONMENTAL DOCUMENT STATUS**

<b>ACTIVITY</b>	<b>AGENCY</b>	<b>DRAFT REPORT</b>	<b>FINAL REPORT</b>
Dunn Field Record of Decision	CEHNC/CH2M Hill	January 2003	July 2003
Main Installation Remedial Design	CEHNC/CH2M Hill CESAM/Jacobs	January 2003	October 2003
Dunn Field Remedial Design	CEHNC/CH2M Hill CESAM/Jacobs	March 2004	November 2004
Main Installation Remedial Action Work Plans	CESAM/Jacobs	November 2003	June 2004
Dunn Field Remedial Action Work Plans	CESAM/Jacobs	December 2004	August 2005
Main Installation Post Construction Report	CESAM/Jacobs		June 2005
Dunn Field Post Construction Report	CESAM/Jacobs		May 2006
1st 5-Year Review Report	CEHNC/CH2M Hill	September 2002	January 2003
2 <sup>nd</sup> 5-Year Review Report	DLA	August 2007	January 2008
Preliminary Closeout Report, including Notice of Intent to Delete	DLA	July 2006	November 2006
Final Closeout Report, including Notice of Intent to Delete	DLA	June 2015	November 2015

**NOTES:**

ASCE-WP	Administrative Support Center East – Environmental Branch
BRAC	Base Realignment and Closure
CEMVM	U S Army Corps of Engineers, Memphis Tennessee
CEHNC	U S Army Corps of Engineers, Huntsville Alabama
CESAM	U S Army Corps of Engineers Mobile Alabama
CESWF	U S Army Corps of Engineers Ft Worth Texas
DDC	Defense Distribution Center
DDMT	Defense Distribution Depot Memphis Tennessee
DDSP-F	Memphis Depot Caretaker Division
DDRE	Defense Distribution Region East
DLA	Defense Logistics Agency
FS	Feasibility Study
HUD	Housing and Urban Development
OU	Operable Unit
PCB	Polychlorinated biphenyl
RA	Remedial Action
RD	Remedial Design
RI	Remedial Investigation
UST	Underground storage tank

**SECTION FIVE****ENVIRONMENTAL PROGRAM SCHEDULES****5.0 ENVIRONMENTAL PROGRAM SCHEDULES**

This section presents the Depot's schedule of anticipated activities for the installation's environmental programs. These schedules consolidate and summarize information from detailed network and operational schedules developed to support study area-specific work plans and compliance agreements. Environmental restoration activities and document review activities are summarized on Figure 5-1. This figure will be updated as the BCI makes decisions regarding sites and BRAC subparcels that require restoration.

**5.1 ENVIRONMENTAL RESTORATION PROGRAM**

This section provides the response schedules and fiscal year requirements for the environmental restoration program for the Depot.

**5.1.1 Response Schedules**

The schedules shown on Figure 5-1 were based on schedules established in August 2002 for the Depot's environmental restoration program. These schedules will be further refined to reflect updates to site schedules in the Defense Site Environmental Restoration Tracking System (DSERTS). In order to accelerate the environmental restoration process, scheduling strategies and timelines are prepared by the BCT and project team so all involved parties can provide input to the process. The BCI and project team will review these schedules regularly to ensure that they are current, that activities are expedited whenever possible and that reuse goals continue to be met.

The response schedules on Figure 5-1 include time frames for feasibility study, remedial design, remedial action and final close out reports for the Main Installation and Dunn Field.

**5.1.2 Requirements by Fiscal Year**

The financial requirements by fiscal year for the environmental program at the Depot are summarized on Table A-1 in Appendix A. These requirements will be further refined to reflect periodic updates to the cost-to-complete database that tracks funding requirements by site and is maintained by CI:HNC for the Depot.

**SECTION FIVE****ENVIRONMENTAL PROGRAM SCHEDULES****5.2 COMPLIANCE PROGRAMS**

The fiscal year requirements for compliance programs at the Depot are shown in Appendix A. Any response schedules required for the compliance programs at the Depot will be presented in subsequent versions of the BCP.

**5.3 NATURAL AND CULTURAL RESOURCES**

Natural and cultural resources at the Depot were assessed under the NEPA environmental assessment as discussed in Section 4.3. The fiscal year requirements for natural and cultural resources at the Depot are shown in Appendix A. The final EA for Master Interim Lease for the Depot was completed in September 1996. The final EA for Disposal and Reuse was completed in February 1998. The Finding of No Significant Impact was signed by AMC on March 13, 1998.

**5.4 BCT/PROJECT TEAM/RAB MEETING SCHEDULE**

The BCT and the project team generally meet the third Thursday of every other month and by interim teleconferences when issues or data need to be resolved or discussed. The RAB meets the third Thursday of every month, except when the BCT and project team have no information to provide. Additional BCT and project team meetings are scheduled as necessary to facilitate the decision-making process.

Figure 5-1

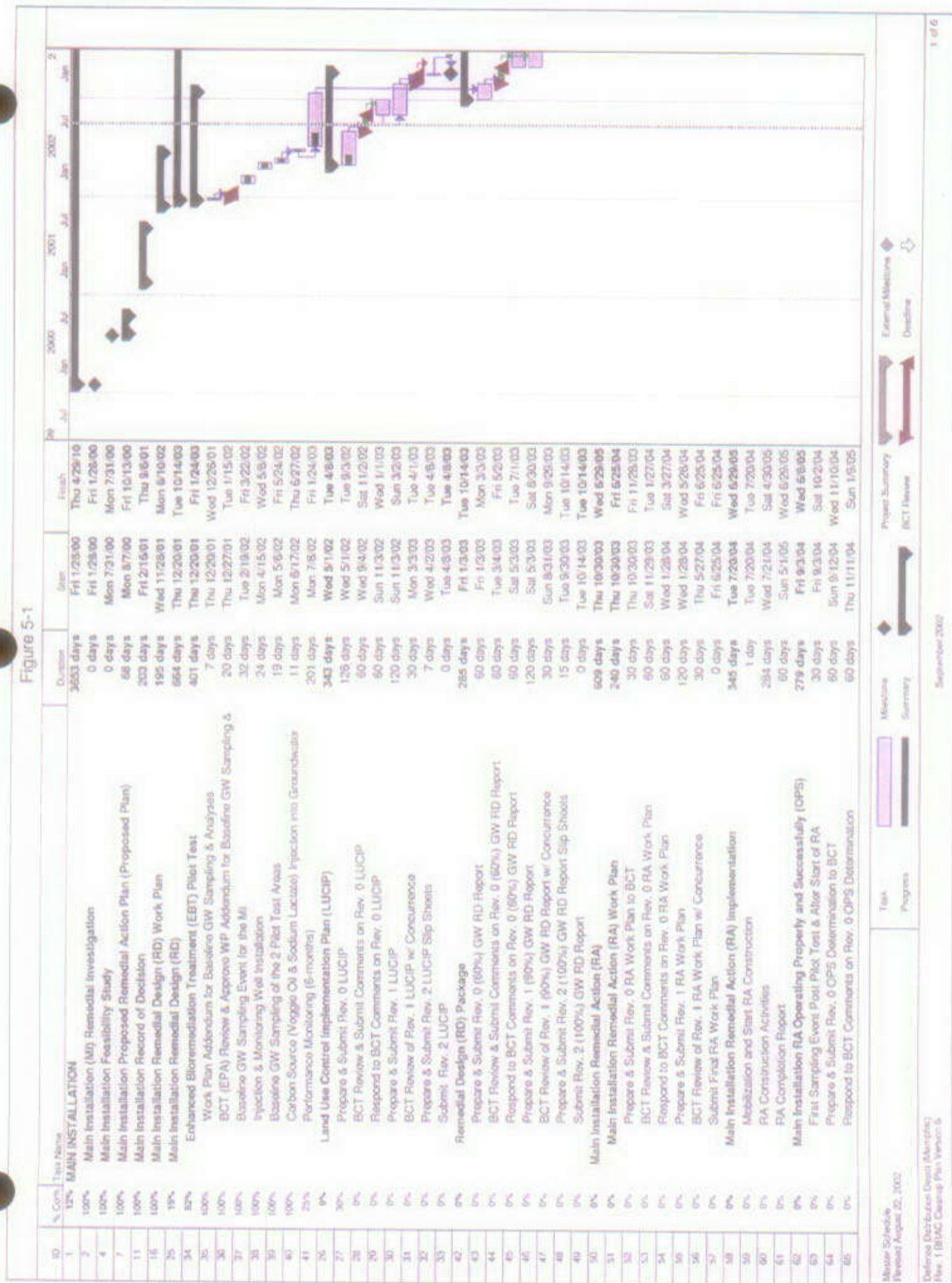




Figure 5-1

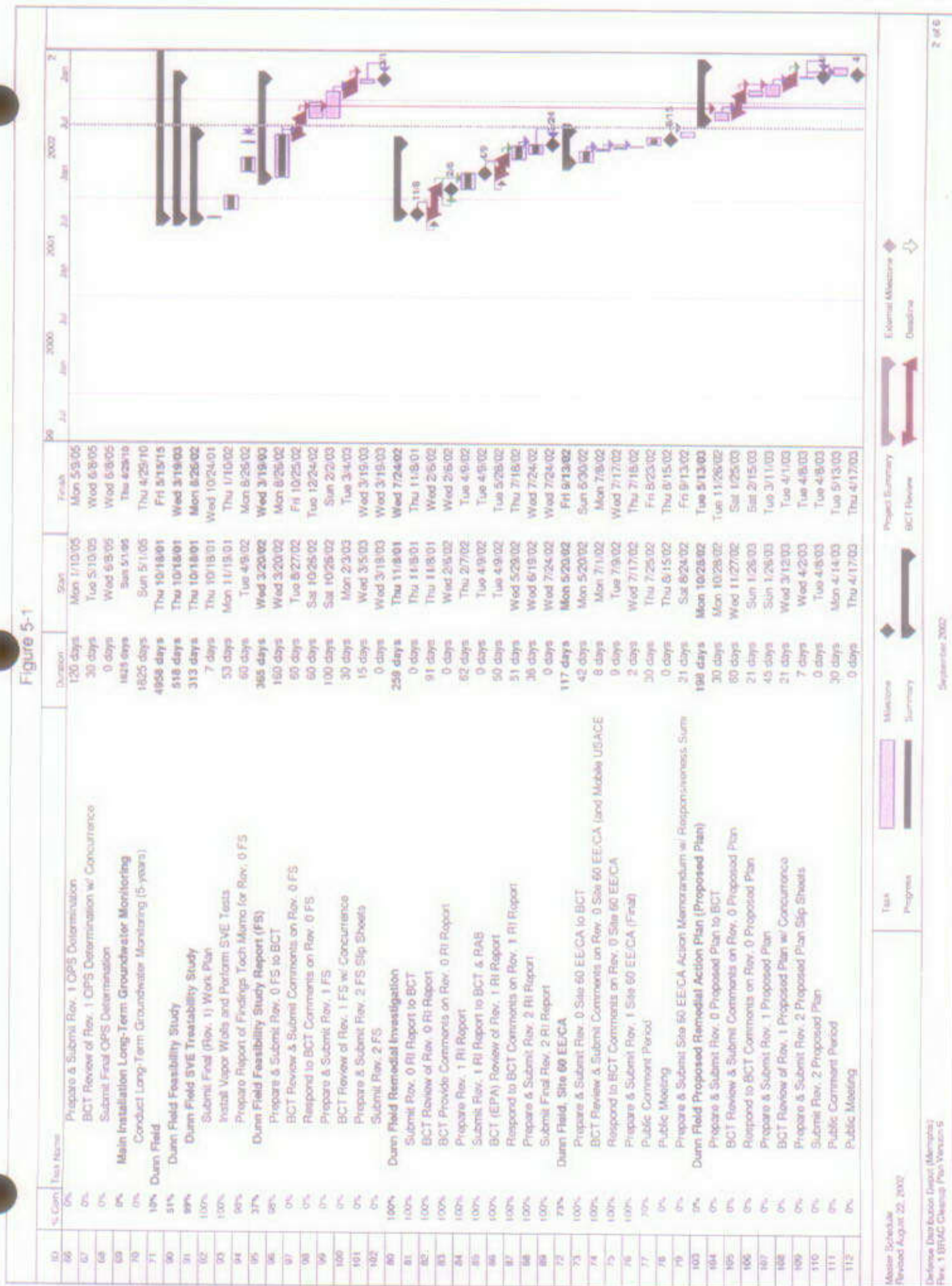
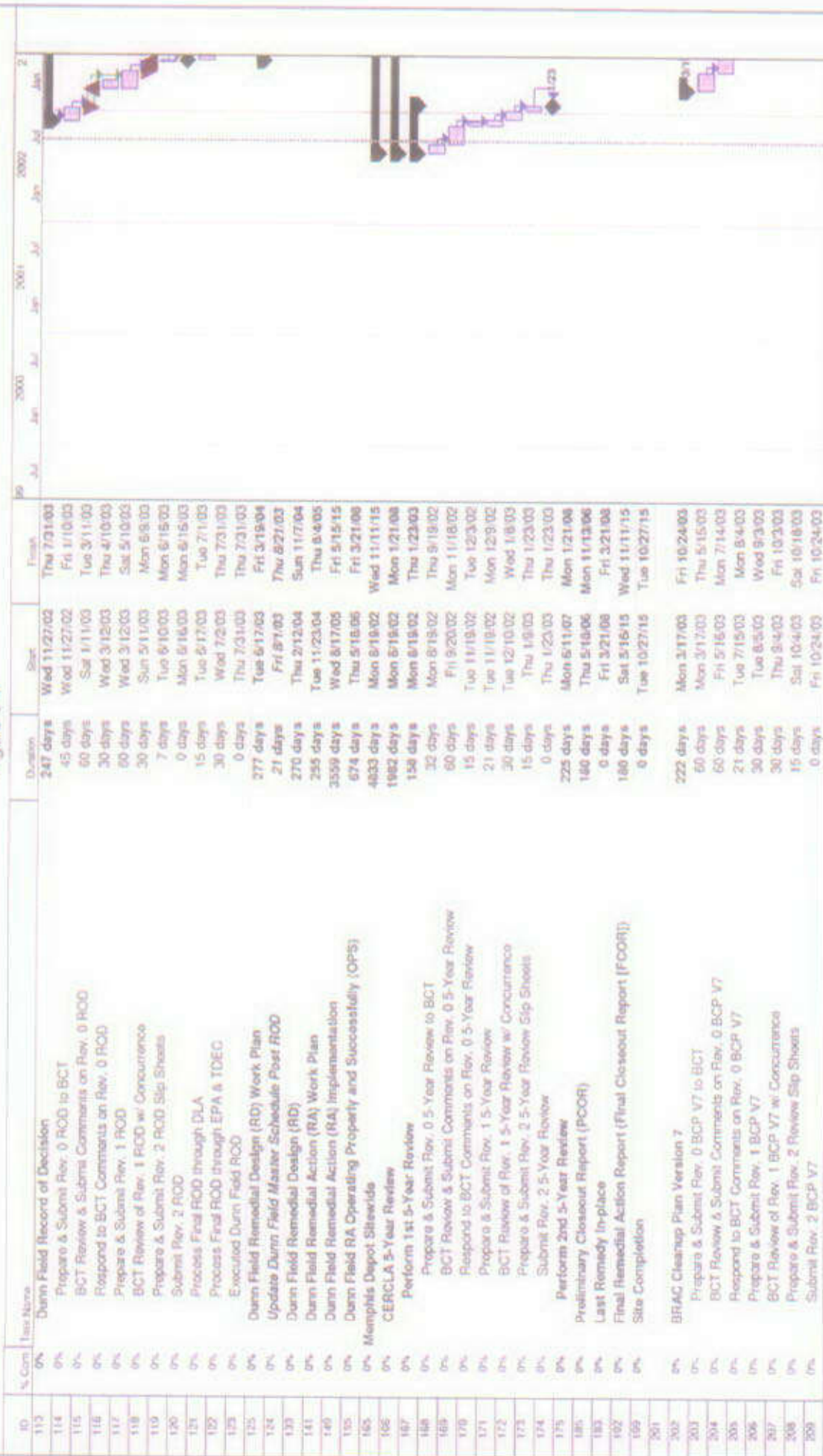


Figure 5-1

Master Schedule  
Revised August 12, 2002Defense Distribution Depot (Memphis)  
Rev. 1 BRAC Cleanup Plan Version 6

Task	Summary	Project Summary	External Milestone
Progress	Summary	BCT Review	Deadline

September 2002

3 of 6



## **SECTION SIX                      TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

### **6.0    TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

This section summarizes technical and other issues that have been or are yet to be resolved. These issues include groundwater containment system, explanation/education of risk management decision-making process, fast track cleanup, horizontal differentiation (surface versus at depth), land use controls and presumptive remedies. Concerns regarding schedules and transfer documentation are also included as unresolved issues. This chapter is organized as the BRAC Cleanup Plan Guidance (Fall 1995/September 1996 addendum) prescribes, although not every section includes unresolved issues

#### **6.1    DATA USABILITY**

This section summarizes unresolved issues pertaining to the validity of using historical data sets in the Depot's environmental restoration program. Historical data sets have been deemed valid for use in making environmental restoration decisions. Main Installation (MI) Remedial Investigation (RI) Report data sets have been deemed valid for use in environmental restoration decisions. Furthermore, sampling plans for Dunn Field soil and groundwater as well as pre-design sampling plans for MI groundwater are designed to produce valid data sets for use in the RI, Feasibility Studies (FS) and Remedial Designs (RD). Therefore, at this time there are no unresolved issues.

#### **6.2    INFORMATION MANAGEMENT**

This section addresses unresolved issues that need to be resolved with regard to managing information gathered and used in the Depot's environmental restoration and compliance programs. Issues include the following:

- Improve coordination of, access to and management of environmental restoration and real estate-type data generated at the Depot
- Ensure that all data from the Depot continues to be loaded into the Environmental Data Management System (EDMS) established in September 1999.
- Require that all contractors submit data and reports in an electronic format that can be readily used by the Depot.

**SECTION SIX                      TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

- Provide environmental restoration information such as BCT minutes, RAB minutes and the EnviroNews to stakeholders via the Internet.

**6.2.1      BCT Action Items**

The following BCT action items are being implemented and should be in place as described below

- Establish an environmental data management system (EDMS) database that is accessible to the BCT members and supporting contractor staff. This system was available to the BCT members as of September 1999.
- Evaluate all future contracts for provisions requiring the submittal of data and reports in both hard copy and electronic formats
- Update the administrative record periodically as needed. In 1999, a contractor established an electronic administrative record database with scanned document images. The database was updated in 2002. This effort will continue through the finalization of the Records of Decision.

**6.2.2      Rationale**

As the number of agencies and contractors associated with the Depot environmental restoration program grows, it is important that all parties involved be able to share data for decision-making. The establishment and maintenance of electronic databases of sampling and analysis data and spatial data (e.g., real estate maps) are the most efficient methods of sharing data among parties.

**6.2.3      Status/Strategy**

The BCT is addressing the issue of maximizing the access of all interested parties to data in the following manner:

- All historical data generated at the Depot are available in the installation administrative record managed by the Defense Distribution Center (Memphis) and copies are located in the Depot's four information repositories. The locations include a public library, the Community Outreach Room located at the DDC.

**SECTION SIX****TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

(Memphis) offices at the Memphis Depot Business Park, and the Memphis/Shelby County Health Department

- All new sampling and analysis data generated during the Depot's environmental restoration program will be entered into the EDMS
- A process for making reports available to the RAB has been established. Upon request, RAB members may check out documents for review. Community members can make appointments to review documents at the Community Outreach Room located at the DDC (Memphis) offices at the Memphis Depot Business Park. The Depot also maintains two other information repositories that contain a copy of all the reports in the administrative record. Whenever possible, the Depot will provide RAB members with project documents on CD-Rom
- Various public outreach programs have been established to disseminate information to the community. These include the RAB, community information sessions, public meetings, bi-monthly newsletters, fact sheets and mailings as necessary.

**6.3 DATA GAPS**

This section summarizes unresolved issues pertaining to the determination and collection of data needed to complete the Depot environmental restoration program

**6.3.1 BCT Action Items**

The following BCI action items should be addressed at the Depot to identify and fill data gaps and continue the environmental restoration process:

- Complete an enhanced bioremediation treatability study. This effort is to determine appropriate locations and nutrients for the selected groundwater alternative, enhanced bioremediation.
- Complete Long Term Operational Area (LTOA) groundwater and soil sampling. This effort is to provide sufficient data to implement the selected groundwater remedy, including long-term monitoring, and to determine if additional soil

**SECTION SIX****TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

remedies are necessary to remove potential sources of groundwater contamination

- Evaluate the results of this fieldwork prior to the design/implementation of the preferred groundwater alternative.

**6.3.2 Rationale**

Effective analysis of data gaps will facilitate the completion of FS and RD efforts so that appropriate remedies can be identified, evaluated and implemented

**6.3.3 Status/Strategy**

The risk assessment portion of the MI RI Report addressed base-wide contaminants such as dieldrin and PAHs. The Depot completed the report in 1999, and the agencies and BCT approved the report in January 2000. The Depot completed the FSs for soil and groundwater in 2000, and the agencies and BCT approved both in July 2000. The MI Proposed Plan completed the public comment period phase in October 2000. DLA, TDEC and EPA signed a Record of Decision (ROD) for remedial actions at the MI that became effective on September 6, 2001.

As of September 2002, there are data gaps regarding soil and groundwater contamination at specific locations on the MI. The BCT will resolve these gaps by collecting additional soil samples at the PCP dip vat area (under a separate scope of work and a stand-alone work plan) and by installing sentry/long-term monitoring wells to be identified in the MI RD. The Depot completed groundwater data collection for the long-term operational areas at the MI in December 2001. The BCT evaluated the data in 2002 and used the information to determine strategies to locate sentry wells in the MI RD. The Depot is conducting an enhanced bioremediation treatability study in 2002. The BCT will use the results in the design/implementation of the selected groundwater alternative.

In 2001, the Depot further evaluated groundwater at Dunn Field in order to assess the nature and extent of a previously undetected dissolved off-site groundwater plume suspected to result from a potential DNAPL. The Dunn Field RI Report included the results of this effort. The BCT will also evaluate the use of soil vapor extraction (SVE) to clean up vadose zone contamination at Dunn Field. The Depot completed the SVE treatability study in 2001, and the Dunn Field FS includes the SVE data. The Depot completed the Dunn Field RI in July 2002. The BCT began reviewing the Rev 0 Dunn Field FS in August 2002.

**SECTION SIX****TECHNICAL AND OTHER ISSUES TO BE RESOLVED****6.4 BACKGROUND LEVELS**

The Depot completed a background sampling program. The data was used to establish screening criteria. At this time, there are no unresolved issues pertaining to background levels.

**6.5 RISK ASSESSMENTS**

This section addresses unresolved issue pertaining to the completion of risk assessments supporting the Depot's environmental restoration programs.

The Depot completed the MI RI Report in 1999, and the agencies and BCT completed their review and approved it in January 2000. The BCT and project team conducted several meetings concerning the Dunn Field risk assessment. At this time, there are no unresolved issues pertaining to the risk assessment.

The Depot completed RI and SVE treatability study sampling at Dunn Field in 2001. The Depot completed the Dunn Field RI Report in July 2002, and the BCT began reviewing the Rev. 0 Dunn Field FS in August 2002.

**6.5.1 BCT Action Items**

Review and approve the Dunn Field FS.

**6.5.2 Rationale**

Completion of risk assessments will enable the BCI to make restoration decisions based on the risk associated with the potential reuse. The National Contingency Plan requires a risk assessment, and the Depot followed the risk assessment process as prescribed in the Risk Assessment Guidance for Superfund (RAGS).

**6.5.3 Status/Strategy**

The Depot completed the MI RI Report that included the risk assessment, and the BCI approved it in January 2000. At this time, there are no unresolved issues regarding risk assessment at the MI.

The Dunn Field RI Report includes the risk assessment for Dunn Field. The Depot completed the Dunn Field RI Report in July 2002. The BCT and project team conducted several meetings

**SECTION SIX****TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

regarding the Dunn Field risk assessment. The BCT began reviewing the Rev 0 Dunn Field FS in August 2002. At this time, there are no unresolved issues regarding risk associated with the individual disposal locations at Dunn Field.

**6.6 BASE-WIDE REMEDIAL ACTION STRATEGY**

This section discusses issues pertaining to the base-wide remedial action strategy for the Depot. The BCT has developed a base-wide remedial action strategy to guide the ongoing environmental restoration efforts at the Depot. For most areas identified as having a potential for contamination from historical practices (CERCLA Category 7), the Depot collected samples to confirm the absence or presence of contamination. The BCT has reviewed this data. The Depot completed the MI RI Report, FSs for soil and groundwater, and Proposed Plan in 2000. DLA, TDEC and EPA signed a ROD for remedial actions at the MI that became effective on September 6, 2001. The Depot completed the Dunn Field RI Report in July 2002 and plans to complete the Dunn Field FS, Proposed Plan and ROD in 2002. At this time, there are no unresolved issues pertaining to the Dunn Field remedial action strategy.

**6.7 GROUNDWATER INTERIM REMEDIAL ACTION AND LONG TERM GROUNDWATER MONITORING**

The selected groundwater remedy in the MI ROD is enhanced bioremediation. This alternative consists of injecting nutrients/chemicals into the groundwater to speed naturally occurring breakdown processes with long-term monitoring to document contaminant levels, ensure there is no offsite migration of the contaminants, and identify if a more aggressive approach is necessary. The Depot completed data collection for long-term operational areas in December 2001, and the BCT evaluated the results in 2002. The Depot will conduct an enhanced bioremediation treatability study in 2002. The MI RD to be completed in 2003 will include results of both data collection efforts. Another component of the MI ROD is land use controls restricting the installation of drinking water wells, preventing residential and daycare operations reuse and for a boundary fence around Parcel 3. A Land Use Control Implementation Plan will be included in the MI RD.

At this time, the Depot has completed construction of phase one and two of an interim groundwater pump-and-discharge system at Dunn Field. This system was designed to contain the plume of chlorinated solvent groundwater contamination. Groundwater samples are collected on a regular basis. Results of monitoring and groundwater elevation data for two years

**SECTION SIX****TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

indicate that the system is accomplishing the interim goal within the spatial distance from the southern-most well (Recovery Well 3) to the northern-most well (Recovery Well 9). Additional contamination was detected to the south of Recovery Well 3 and four additional recovery wells were installed south of Recovery Well 3 in order to accomplish the interim goal. The Depot completed installation additional wells and the system was on-line in 2001. The Dunn Field RI Report risk assessment included data collected from this system. CEHNC will also use this in any additional groundwater modeling.

In 2001, The BCI further evaluated groundwater at Dunn Field in order to assess the nature and extent of a previously undetected dissolved off-site groundwater plume suspected to result from a potential DNAPL. The Dunn Field RI Report included results of this effort. The BCT will also evaluate the use of SVE to clean up vadose zone contamination at Dunn Field. The Dunn Field FS will include results of the SVE treatability study. The Depot completed the Dunn Field RI Report in July 2002, and the BCI began reviewing the Rev. 0 Dunn Field FS in August 2002.

**6.8 EXCAVATION OF CONTAMINATED MATERIALS**

Environmental restoration activities at the MI are presently in the RD phase. One area on the MI, south end of Building 949, was identified for excavation, transportation and disposal offsite in the MI Proposed Plan. During development of the MI ROD, DLA elected to conduct a removal action of lead contaminated soil from this area in response to DRC reuse priorities. The ROD contains an explanation of significant differences regarding the removal action decision. The following removal actions excavated contaminated materials on the MI: dieldrin impacted soil from the former military family housing area in 1998; PCB impacted soil from Building 274 in 1998; metals impacted soil from the old paint shop and maintenance area in 2000; and metals impacted soil from Building 949 in 2001.

Environmental restoration activities at Dunn Field are presently in the FS phase. The Dunn Field FS will evaluate potential remedial alternatives, including excavation, to address individual burial locations. The Depot completed the chemical warfare materiel removal action at Dunn Field in May 2001. All materials removed from the CWM sites were sampled for chemical agent and also HIRW materials. The Depot plans to conduct a removal action of lead in soil at the former pistol range on Dunn Field in 2002. At this time, there are no unresolved issues pertaining to the excavation of contaminated materials at Dunn Field.

**SECTION SIX****TECHNICAL AND OTHER ISSUES TO BE RESOLVED****6.9 PROTOCOLS FOR REMEDIAL DESIGN REVIEWS**

Environmental restoration activities at the MI are presently in the RD phase. Environmental restoration activities at Dunn Field are presently in the FS phase. The BCT will follow protocol requirements for the review of design documents as specified in the Federal Facility Agreement, which is 60 days for primary deliverables. In addition, CEHNC will review design documents according to their established internal review procedures for design reports prepared either internally or by contractors. The final design documents will be made available to the community in the information repositories. As of September 2002, there are no unresolved issues pertaining to the protocols for RD review.

**6.10 CONCEPTUAL MODELS**

The Depot will continue to evaluate groundwater under the MI in 2002 as part of the enhanced bioremediation treatability study. The study will confirm the most appropriate locations to implement the enhanced bioremediation remedy. The MI RD will include the results of the study. The data generated from the installation of numerous monitoring wells and soil borings in 2001 have refined the groundwater model significantly.

**6.11 CLEANUP STANDARDS**

The BCT developed, approved and implemented industrial worker risk-based cleanup goals for the majority of the MI. The BCT developed, approved and implemented recreational reuse risk-based cleanup goals for the golf course and recreation area. These risk-based cleanup goals will be implemented during the remedial design/action process. The BCT will establish cleanup standards for Dunn Field in the Dunn Field ROD, scheduled to be completed in 2002. The National Contingency Plan (40 CFR 300) establishes a risk range of  $1 \times 10^{-6}$  to  $1 \times 10^{-4}$ , or from one in a million to one in ten thousand, excess chance of developing cancer and a Hazard Index (HI) of less than 1 for non-carcinogenic risks as the range where risk management decisions are allowed. For a risk that exceeds  $1 \times 10^{-4}$  or an HI of 1, remediation is required to reduce the cumulative risk to an acceptable level. A risk that does not exceed  $1 \times 10^{-6}$  or an HI of 1 is below the point of departure, meaning that neither remediation nor risk management decisions are required. Risk management decisions can be anything from no further action to engineering controls such as fences or cleanup actions. As of September 2002, there are no unresolved issues pertaining to cleanup standards.



**SECTION SIX                      TECHNICAL AND OTHER ISSUES TO BE RESOLVED****6.12 INITIATIVES FOR ACCELERATING CLEANUP**

The project team has implemented the following initiatives for expediting response actions at the Depot:

- **Regulatory Involvement.** The BCT has been formed and meets regularly. The BCT, in conjunction with the project team, provides a forum for the cooperative development of short-term and long-term strategies for the investigation and the restoration of the Depot. The BCT consists of representatives from DLA, EPA and TDEC.
- **Defined Document Review Periods.** The BCT generally adheres to the required review schedule specified in the Federal Facilities Agreement of 60 days for primary deliverables.
- **Functional Unit/Area Groupings.** The installation restoration program sites and BRAC subparcels on the MI were grouped into Functional Units to aid in the risk assessment process. Installation restoration program sites and BRAC subparcels on Dunn Field were grouped into Areas to aid in the risk assessment process.
- **Concurrent Environmental Restoration/CERCLA Phases.** To expedite restoration, the BCT conducts concurrent project phases including investigations, feasibility studies and designs. The project team began preparing FSs for the MI and Dunn Field prior to finalization of the RI reports. Also, the project team will draft the ROD before the end of the public comment period for the Proposed Plan. The BCT will address selected cleanup alternatives if the public comments warrant revising the alternative selection. Essentially, the BCT will always initiate the next step in the process while finalizing the previous document or step.
- **Concurrent Reviews.** The BCT has elected not to continue concurrent reviews whenever possible. This time saving effort has been shown to fragment and otherwise deter progress.
- **Community Involvement.** The Depot formed the RAB to involve the community in the restoration program. The RAB meets to discuss the status of

**SECTION SIX****TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

the environmental restoration program at the Depot. This effort has shown no acceleration to the program.

- **Risk-based Cleanup.** The BCT agreed to use the EPA Region 9 RBCs or background concentrations for screening goals. However, a full risk assessment was performed and the results provided in the MI and Dunn Field RI Reports.
- **Innovative Contracting.** Flexible contracting procedures have been implemented. The most significant of these is the Pre-Placed Remedial Action Contract. This will expedite cleanup actions by avoiding many of the necessary contractual processes that precede the award of a construction contract.
- **Removal Actions.** The BCT focused on removal actions in 2001. The following removal actions have been completed as of September 2002: dieldrin impacted soil from the former military family housing units in 1998; PCB impacted soil from Building 274 in 1998; metals impacted soil from the old paint shop and maintenance area in 2000; chemical warfare materiel from Dunn Field in 2001; metals impacted soil from the south end of Building 949 in 2001; and decontaminated Building 308 in 2001. The Depot plans to conduct a removal action for lead in soil at the former pistol range on Dunn Field in 2002.

**6.12.1 BCT Action Items**

Complete and approve the Dunn Field FS, Proposed Plan and ROD in 2002. Evaluate the enhanced bioremediation treatability study data for the MI and complete the RD for groundwater at the MI.

**6.12.2 Rationale**

By utilizing initiatives for accelerating cleanup, the BCT will accomplish restoration and property transfer.

**6.12.3 Status/Strategy**

Continue utilizing initiatives for accelerating cleanup in the Depot's environmental restoration program.

**SECTION SIX****TECHNICAL AND OTHER ISSUES TO BE RESOLVED****6.13 REMEDIAL ACTIONS**

Environmental restoration activities for groundwater at the MI are presently in the RD phase. DLA, TDEC and EPA signed the MI ROD, and it became effective on September 6, 2001. One area on the MI, the south end of Building 949, was identified for excavation, transportation and disposal offsite. During development of the MI ROD, DLA elected to conduct a removal action of metals contaminated soil from the south end of Building 949. The ROD contains an explanation of significant differences regarding the removal action decision. The MI ROD also calls for institutional controls, which are considered remedial actions. The BCT will produce on a Land Use Control Implementation Plan to be included in the MI RD. As of September 2002, no final remedial actions have occurred.

The Depot constructed the Interim Remedial Action for Groundwater at Dunn Field and began operating it in late 1998. Additional groundwater contamination was detected to the south of the southern most recovery well; so, the Depot installed four additional recovery wells in 1999 to capture this southern edge of the plume. These additional wells are considered a second phase to the Interim Remedial Action.

Environmental restoration activities at Dunn Field are presently in the FS phase. The FS will evaluate potential remedial alternatives to address VOCs in soil and groundwater as well as individual burial locations. The Depot completed the Dunn Field RI Report in July 2002. The BCT began reviewing the Rev. 0 Dunn Field FS in August 2002. The Depot completed the chemical warfare materiel removal action at Dunn Field in May 2001.

At this time, there are no unresolved issues pertaining to remedial actions at Dunn Field.

**6.14 REVIEW OF SELECTED TECHNOLOGIES FOR APPLICATION OF EXPEDITED SOLUTIONS**

Environmental restoration activities for groundwater at the MI are presently in the RD phase. The Depot will conduct an enhanced bioremediation treatability study in 2002 and will use the results in the MI RD. Environmental restoration activities at Dunn Field are presently in the FS phase. The Depot completed a SVE treatability study in 2001 to evaluate use of this EPA-presumptive remedy for VOCs in the vadose zone at Dunn Field. The Dunn Field RD will include the results of this study. At this time, there are no unresolved issues pertaining to review of selected technologies for application of expedited solutions.

**SECTION SIX****TECHNICAL AND OTHER ISSUES TO BE RESOLVED****6.15 HOT-SPOT REMOVALS**

Environmental restoration activities at the MI are presently in the RI phase. DLA, TDEC and EPA signed the MI ROD that became effective on September 6, 2001. One area on the MI, south end of Building 949, was identified for excavation, transportation and disposal offsite. During development of the MI ROD, DLA elected to conduct a removal action of metals contaminated soil from the south end of Building 949. The ROD contains an explanation of significant differences regarding the removal action decision. The Depot completed the removal action in 2001. As of September 2002, no final remedial actions have occurred.

The following removal actions have been completed: dieldrin impacted soil from the former military family housing area in 1998; PCB impacted soil from Building 274 in 1998, metals impacted soil from the old paint shop and maintenance area in 2000; CWM materials from Dunn Field in 2001; metals impacted soil from Building 949 in 2001; and decontamination of Building 308 in 2001.

Environmental restoration activities at Dunn Field are presently in the FS phase. Based on data in the Dunn Field RI Report, the Depot plans to conduct a removal action for lead in soil at the former pistol range on Dunn Field in 2002.

At this time, there are no unresolved issues pertaining to hot-spot removals.

**6.15.1 BCT Action Items**

Complete and approve the Dunn Field FS, Proposed Plan and the ROD in 2002. No other hot spots have been identified for removal.

**6.15.2 Rationale**

Removal actions expedite the environmental restoration and property transfer processes at the Depot.

**6.16 IDENTIFICATION OF CLEAN PROPERTIES**

Clean properties were identified in the final EBS. In 2002, the Depot updated the environmental condition of property map as environmental conditions have changed at many subparcels that the BCT determined to be clean after reviewing preliminary sampling data. The clean properties

**SECTION SIX****TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

determination only applied to the buildings or the surface and shallow subsurface soils within the subparcels. In some cases, the MI ROD requires enhanced bioremediation of fluvial aquifer groundwater beneath these subparcels due to VOC levels that exceed Safe Drinking Water Act maximum contaminant levels, or the MI ROD required institutional controls (ICs) due to contaminant levels in soils that present unacceptable risk for residential reuse. The BCT concurred to change the affected clean properties (Category 1) to either Category 4 as ICs have been implemented via the Master Lease and Environmental Protection Provisions in MI FOSIs or Category 6 as enhanced bioremediation of groundwater contamination has not yet begun. The Depot will continue to update the environmental condition of property map as decisions are made by the BCT so that an accurate visual portrayal of property available for transfer is maintained.

The MI RD will include enhanced bioremediation, sentry/long-term monitoring wells and a Land Use Control Implementation Plan for the MI. A Department of Defense draft policy on land use controls has been integrated into the BCT's approach. The Depot requires a clearly defined approach to ensure all parties that the steps necessary for land use controls and protective covenants are in place. This will include the operations and maintenance of any necessary land use controls that are passed along to future owners as deed restrictions.

### **6.17 OVERLAPPING PHASES OF THE CLEANUP PROCESS**

As of September 2002, no remedial actions have been implemented with the exception of the interim remedial action for groundwater at Dunn Field. The BCT has stressed to the support organizations and contractors that some steps in the CERCLA process may be performed concurrently. This is recognized as an approach that may shorten the schedule somewhat. In particular, the BCT has directed the Corps of Engineers to begin the FS phase prior to completing the RI reports. Some of the decision documentation may also be drafted as soon as the most appropriate remedial alternative becomes apparent. If other issues arise in the future, a strategy to address each unresolved issue will be developed and implemented.

### **6.18 IMPROVED CONTRACTING PROCEDURES**

The Corps of Engineers has several contracting tools to assist in the accomplishment of the environmental restoration work at the Depot. The newest of these tools is the Pre-Placed Remedial Action Contract. This large volume contract is for one year with three option years. The maximum contract value is \$14.8 million. This contract should provide for all cleanup

**SECTION SIX****TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

actions at the Depot through the completion of the CERCLA program. As of September 2002, there are no unresolved issues pertaining to improved contracting procedures.

**6.19 INTERFACING WITH THE COMMUNITY REDEVELOPMENT PLAN**

The LRA was established as the MDRA and was replaced by the Depot Redevelopment Corporation (DRC) in April 1997. The Memphis Depot Redevelopment Plan was completed in May 1997 and approved by AMC in September 1997. The BCT used proposed future reuse scenarios from the Memphis Depot Redevelopment Plan and updates to these scenarios by the DRC to determine the appropriate risk-based cleanup goals. The DRC attends BCT meetings when appropriate to provide updates to reuse scenarios. Removal action decisions have resulted from the DRC's reuse priorities.

**6.20 BIAS FOR CLEANUP INSTEAD OF STUDIES**

Whenever possible and supported by the requirements of the National Contingency Plan, the EPA and DLA will select early cleanup rather than additional studies of potentially contaminated sites. This approach will expedite early achievement of restoration goals and transfer of property. The following removal actions have been completed: dieldrin impacted soil from the former military family housing area in 1998; PCB impacted soil from Building 274 in 1998; metals impacted soil from the old paint shop and maintenance area in 2000; metals impacted soil from Building 949, and chemical warfare materiel from Dunn Field in May 2001.

The Depot completed the MI RI Report and FSs for soil and groundwater in 1999, and the agencies and BCT approved them in July 2000. DLA, IDEC and EPA signed the MI ROD that became effective on September 6, 2001. During development of the MI ROD, DLA elected to conduct a removal action of metals contaminated soil from the south end of Building 949 in response to the DRC's reuse priority. The ROD contains an explanation of significant differences regarding the removal action decision.

The Depot collected additional groundwater data at the MI to 1) confirm that groundwater conditions at the MI were adequately described in the MI RI Report and FS for groundwater, 2) confirm and refine the conceptual model of the water-table aquifer beneath the MI, and 3) determine appropriate locations for implementing the selected groundwater alternative, enhanced bioremediation. The MI RD will include the results of this fieldwork.

**SECTION SIX****TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

The Interim Remedial Action for groundwater at Dunn Field began operating in 1999, and four additional recovery wells began operating in 2001. The Depot completed RI fieldwork for Dunn Field in 2000; however, the Depot further evaluated groundwater at Dunn Field to assess the nature and extent of a previously undetected dissolved off-site groundwater plume suspected to result from a potential DNAPL. The Depot completed the sampling plan addendum fieldwork in 2001 and incorporated the data into the Dunn Field RI Report. The Dunn Field FS includes data collected during the SVE treatability study at Dunn Field. The Depot completed the Dunn Field RI Report in July 2002, and the BCT began reviewing the Rev. 0 Dunn Field FS in August 2002.

At this time, there are no unresolved issues regarding bias for cleanup instead of studies.

**6.21 EXPERT INPUT ON CONTAMINATION AND POTENTIAL REMEDIAL ACTIONS**

The BCT is committed to using expert input during the scoping, execution and review of the individual environmental investigation projects and restoration actions. Such expertise will be drawn from CEHNC, CESAM, USGS, EPA, TDEC and contractors employed to perform scopes of work on the various projects at the Depot during the environmental investigation and restoration work. At this time, there are no unresolved issues pertaining to expert input on contamination and potential remedial actions.

**6.22 PRESUMPTIVE REMEDIES**

The EPA has issued guidance on generic or presumptive remedies for a few specific contamination scenarios (e.g., one of the generic remedies for VOC contamination is soil vapor extraction). Presumptive remedies are preferred remedial technologies for common categories of sites and are based on past patterns of remedy selection and performance data. Presumptive remedies are expected to reduce the cost and time required to clean up similar sites by streamlining site investigation and remedy selection. Presumptive remedies are expected at appropriate sites. One potential location for the use of a presumptive remedy of soil vapor extraction is the disposal area of Dunn Field. Based upon a soil gas survey performed in late 1998, it appears that the shallow soil vapor is impacted with volatile organic compounds. The Depot completed a SVE treatability study in 2001 to determine the effectiveness of this presumptive remedy in the vadose zone at Dunn Field. The Dunn Field FS will include the results of this study.

**SECTION SIX****TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

Based on the results of the treatability study, the BCT believes that SVE will be a component of the remedy at Dunn Field. At this time, there are no unresolved issues regarding presumptive remedies.

**6.23 PARTNERING (USING INNOVATIVE MANAGEMENT, COORDINATION AND COMMUNICATION TECHNIQUES)**

The Depot fosters the partnership with regulatory agencies, the Corps of Engineers and the community through scheduled meetings and the document review process. These partnerships can accelerate implementation of environmental restoration efforts by keeping key individuals informed, soliciting their comments and addressing their concerns prior to implementing environmental restoration activities. The BCT plans to continue its activities and to encourage information transfer. At this time, there are no unresolved issues with regard to partnering.

According to the RAB, DLA could do much more to disseminate information. However, the RAB does not utilize resources provided by DLA in the information repositories. Community Information and Availability Sessions conducted within the community and at the Depot to provide information on a one-to-one basis have resulted in limited attendance by community members.

At this time, there are no unresolved issues with regard to partnering.

**6.24 UPDATING THE EBS AND NATURAL/CULTURAL RESOURCES DOCUMENTATION**

The Depot completed the final EBS completed in November 1996. Now that the EBS is final, the installation status portions of the BCP will be updated on an annual basis, as appropriate.

The Depot completed the final EA for Master Interim Lease, which includes natural and cultural resources documentation for the Depot, in September 1996. The Depot completed a final EA for Disposal and Reuse in February 1998. AMC signed a Finding of No Significant Impact regarding disposal and reuse of the Depot on March 13, 1998. At this time, there are no unresolved issues pertaining to the updating of the EBS and natural and cultural resources documentation.



**SECTION SIX**      **TECHNICAL AND OTHER ISSUES TO BE RESOLVED****6.25 IMPLEMENTING THE POLICY FOR ON-SITE DECISION MAKING**

At this time, there are no major issues pertaining to implementing the policy for on-site decision making. The Depot actively fosters partnerships with the regulatory agencies, the Corps of Engineers and the community through scheduled meetings and the document review process

**7.0 REFERENCES**

A.T. Kearney, Inc. 1990. RCRA Facilities Assessment Report Prepared for the U S Environmental Protection Agency.

Chemical Systems Laboratory. 1981. Installation Assessment of Defense Depot Memphis, Memphis, Tennessee.

CH2M Hill 1994. Draft No Further Action Report. Defense Distribution Depot Memphis

———. 1995a. Environmental Restoration Program, Monitoring Well Installation Locations. Soil, Surface Water and Sediment Sampling Locations.

———. 1995b. Generic Remedial Investigation/Feasibility Study Work Plan. Defense Distribution Depot Memphis.

———. 1995c. Operable Unit 1 - Field Sampling Plan, Defense Distribution Depot Memphis

———. 1995d. Operable Unit 2 - Field Sampling Plan. Defense Distribution Depot Memphis.

———. 1995e. Operable Unit 3 - Field Sampling Plan. Defense Distribution Depot Memphis

———. 1995f. Operable Unit 4 - Field Sampling Plan. Defense Distribution Depot Memphis.

———. 1995g. Record of Decision for Interim Remedial Action of the Groundwater at Dunn Field (OU-1) at the Defense Distribution Depot Memphis

———. 1995h. Screening Sites Field Sampling Plan for Defense Distribution Depot Memphis.

———. 1995i. Technical Memorandum. Summary of Information Inventory, Defense Distribution Depot Memphis, Tennessee. Early Removal Task

———. 1995j. Transmittal of Selection of Early Removal Sites. Technical Memorandum for DDMT

**SECTION SEVEN****REFERENCES**

- 1997a. Quarterly Groundwater Monitoring Results for DDMT.
- 1998a. Screening Sites Letter Reports.
- . 1998b. Remedial Investigation Sites Letter Reports
- . 1998c. Revised BRAC Parcel Summary Reports.
- 1999. Final Streamlined Risk Assessment Parcel 3 Technical Memorandum.
- . 2000a Main Installation Remedial Investigation Report. Volumes 1 through IV
- 2000b Main Installation Feasibility Study for Groundwater.
- 2000c Main Installation Feasibility Study for Soils
- . 2001a Data Collection Plan for Long-Term Operational Areas (LTOAs), Main Installation.
- 2001b. Main Installation Record of Decision.
- . 2001c. Well Construction and Sampling Techniques for LTOA Monitoring Wells Associated with SS42/SS43, NE6 (Building T-702), and SS80.
- 2001d. Soil Vapor Extraction Treatability Study Work Plan
- . 2002a Dunn Field Remedial Investigation Report. Rev 2.
- 2002b Main Installation Remedial Design Workplan. Rev 2.
- Defense Distribution Depot, Memphis Tennessee (DDMT) 1992. Spill Response for DDMT 1990, 1991, 1992.
- . 1993 1993 Spill Response Summary.

**SECTION SEVEN****REFERENCES**

——— 1995 1995 Spill Response Checklist.

——— 1996. 1996 Spill Response Checklist

Department of Defense. 1995 BRAC Cleanup Plan (BCP) Guidebook with 1996 addendum.

Facilities Engineering Division DDMT. 1993. Location of Tanks on Depot to be Cleaned

Frontline Corporate Communications. 1999. Final Community Relations Plan for the Memphis Depot.

Harland Bartholomew & Associates, Inc. 1988. Master Plan Report, Defense Depot Memphis, Tennessee

Jacobs Engineering Services, Inc. 2000 Remediation Report, Removal Action in Parcels 28 and 35 (Old Paint Shop and Maintenance Area) Prepared for U.S. Army Corps of Engineers, Mobile

——— 2001a Decontaminate and Closure of Permitted Container Storage Facility (Building 308) and Removal of Lead Impacted Soil at Building 949. Prepared for U.S. Army Corps of Engineers, Mobile.

——— 2001b Decontamination Report and Certification for Closure of Permitted Container Storage Facility (Building 1-308)

Law Environmental. 1990a. Feasibility Study Final Report. Prepared for U.S. Army Corps of Engineers, Huntsville Division.

——— 1990b. Remedial Investigation Final Report of DDMT. Prepared for U.S. Army Corps of Engineers, Huntsville Division.

National Census Report. August 2000.

Office of Post Engineer DDMT. 1947 Depot Layout Plan

**SECTION SEVEN****REFERENCES**

OHM/TT Remediation Services, Inc. 1999a Post Removal Report: Contaminated Soil Remediation Family Housing Area, Memphis Depot, Tennessee, Volumes I and II. Prepared for U.S. Army Corps of Engineers, Mobile.

———. 1999b Post Removal Report: Contaminated Soil Remediation Cafeteria Building, Memphis Depot, Tennessee. Prepared for U.S. Army Corps of Engineers, Mobile.

Parsons Environmental Science. 1999. Final Engineering Evaluation and Cost Analysis (EE/CA) for the Removal of Chemical Warfare Materiel, Former Defense Distribution Depot Memphis, Tennessee.

The Pickering Firm, Incorporated. 1993a Asbestos Identification Survey for Buildings 144-209

———. 1993b. Asbestos Identification Survey for Buildings 210-257

———. 1993c. Asbestos Identification Survey for Buildings 260-271

———. 1993d Storage Tank Survey.

———. 1994a Asbestos Identification Survey of Buildings 139-198

———. 1994b Asbestos Identification Survey for Buildings 211-795

———. 1994c. Asbestos Identification Survey for Buildings 229-309

———. 1994d Asbestos Identification Survey of Buildings 319-359.

———. 1994e Asbestos Identification Survey of Buildings 319-490.

———. 1994f. Asbestos Identification Survey for Buildings 429-530

———. 1994g. Asbestos Identification Survey of Buildings 549-650.

**SECTION SEVEN****REFERENCES**

———. 1994h. Asbestos Identification Survey of Buildings 670-720.

———. 1994i. Asbestos Identification Survey of Buildings 737-793.

———. 1994j. Asbestos Identification Survey of Buildings 1084-25.

———. 1994k. Asbestos Identification Survey of Buildings 801-995.

Prewitt & Associates, Inc. 1997. Archeological Survey of Two Parcels at Defense Distribution Depot Memphis, Tennessee.

Radian International. 1999. Final Baseline Risk Assessment for Golf Course Impoundments at the Defense Distribution Depot Memphis, Tennessee.

TRC Mariah Associates, Inc. 1997. A Cultural Resources Inventory and Assessment at the Defense Distribution Depot Memphis, Tennessee.

UXB International, Inc. 2001. Final Report Chemical Warfare Materiel Investigation and Removal Action at Defense Depot Dunn Field. Prepared for U.S Army Engineering and Support Center Huntsville.

**TABLE A-1**  
**FISCAL YEAR FUNDING REQUIREMENTS**

INSTALLATION BUDGET (\$000)										
ACTIVITY	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10 - COMPLETION
Restoration	9250	2061	2198	7351	1990	1990	1683	1017	196	1468
Compliance	44	0	0	0	0	0	0	0	0	0
Planning	5	5	5	5	5	5	5	5	5	5
Management	884	500	500	500	500	500	500	500	500	500
<b>TOTAL</b>	<b>10183</b>	<b>2566</b>	<b>2703</b>	<b>7856</b>	<b>2495</b>	<b>2495</b>	<b>2188</b>	<b>1522</b>	<b>701</b>	<b>1973</b>

**TABLE B-1**  
**TECHNICAL DOCUMENTS SUMMARY**

<b>Document</b>	<b>Year</b>	<b>Author</b>
Installation Assessment of Defense Depot Memphis, Tennessee Report No 191	1981	U S Army Toxic and Hazardous Materials Agency
Geohydrologic Study No 38-26-0195-83	1982	U S Army Environmental Hygiene Agency
Environmental Audit No 43-21-1387-86	1985	U S Army Environmental Hygiene Agency
Water Quality Biological Study No 32-0733-86, Investigation of Fire Reservoir	1986	U S Army Environmental Hygiene Agency
Ground Water Consultation No 38-26-0815-87, Collection and Analysis of Ground Water Samples	1986	U S Army Environmental Hygiene Agency
Summary Report, On-Site Remedial Activities at the Defense Depot Memphis	1986	O H Materials Company
Inter-Office Memorandum regarding January 19, 1988 Spandome Collapse	1988	City of Memphis
Remedial Investigation Final Report	1990	Law Environmental, Inc
Remedial Investigation Final Report Appendices	1990	Law Environmental, Inc
Feasibility Study Final Report	1990	Law Environmental, Inc
RCRA Facility Assessment	1990	Environmental Protection Agency and A T Kearney
Hazard Ranking System Score	1991	Environmental Protection Agency
Federal Register February 1992/Sites Proposed for the National Priorities List	1992	Environmental Protection Agency/Jon D Johnston
Federal Register October 14, 1992/Sites Promulgated to the National Priorities List	1992	Environmental Protection Agency
Final Pump Test Work Plan	1992	Engineering-Science, Inc
Pumping Test Technical Memorandum	1992	Engineering-Science, Inc
Non-Stockpile Chemical Materiel Program, Survey and Analysis Report	1993	U S Army Chemical Materiel Destruction Agency
Final Focused Feasibility Study Dunn Field	1994	Engineering-Science, Inc



**TABLE B-1**  
**TECHNICAL DOCUMENTS SUMMARY**

<b>Document</b>	<b>Year</b>	<b>Author</b>
Environmental Assessment, Removal Action for Groundwater	1994	Engineering-Science, Inc
Final Proposed Groundwater Action Plan	1994	U S Army Corps of Engineers and CH2M Hill
No Further Action Report Draft	1994	U S Army Corps of Engineers and CH2M Hill
Electromagnetic and Magnetic Surveys at Dunn Field, Defense Depot Memphis, Tennessee	1994	U S Army Corps of Engineers Waterways Experiment Station
Groundwater Monitoring Results Report for Defense Depot Memphis, Tennessee, Volumes 1 through 9	1994	Environmental Science & Engineering Inc
High Resolution Seismic Reflection Survey to Image the Top and Bottom of a Shallow Clay Layer at the Memphis Defense Depot, Memphis, Tennessee	1994	Kansas Geological Survey
Generic Quality Assurance Project Plan Final	1995	U S Army Corps of Engineers and CH2M Hill
Generic Remedial Investigation/Feasibility Study Workplan Final	1995	U S Army Corps of Engineers and CH2M Hill
Screening Sites Field Sampling Plan Final	1995	U S Army Corps of Engineers and CH2M Hill
Operable Unit 1 Field Sampling Plan Final	1995	U S Army Corps of Engineers and CH2M Hill
Operable Unit 2 Field Sampling Plan Final	1995	U S Army Corps of Engineers and CH2M Hill
Operable Unit 3 Field Sampling Plan Final	1995	U S Army Corps of Engineers and CH2M Hill
Operable Unit 4 Field Sampling Plan Final	1995	U S Army Corps of Engineers and CH2M Hill
Public Health Assessment for USA Defense Depot Memphis	1995	U S Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry
Ordnance and Explosive Waste Chemical Warfare Materials, Archives Search Report for Memphis Defense Depot	1995	U S Army Corps of Engineers - St Louis
Federal Facilities Agreement	1995	Environmental Protection Agency Tennessee Department of Environment and Conservation, and Defense Depot Memphis, Tennessee
Sediment Sampling Analysis Report	1996	U S Army Space and Strategic Defense Command

TABLE B-1

## TECHNICAL DOCUMENTS SUMMARY

Document	Year	Author
Record of Decision for Interim Remedial Action of the Groundwater at Dunn Field (OU-1) at the Defense Distribution Depot Memphis, Tennessee	1996	U S Army Corps of Engineers and CH2M Hill
Concurrence Letters for the Record of Decision on the Interim Remedial Action for Groundwater at Dunn Field	1996	Environmental Protection Agency and the Tennessee Department of Environment and Conservation
Interim Remedial Action for Groundwater at Dunn Field	1996	U S Army Corps of Engineers and CH2M Hill
Final Environmental Assessment for Master Interim Lease at Defense Distribution Depot Memphis	1996	U S Army Corps of Engineers and Tetra Tech, Inc
Environmental Baseline Survey	1996	Woodward-Clyde, Inc
Restoration Advisory Board Public Involvement Information, Defense Depot Memphis, Tennessee	1994 until Present	Memphis Depot
BRAC Cleanup Team (BCT) Meeting Minutes	1996 until Present	Memphis Depot
Draft Finding of Suitability to Lease Documents	1996	Memphis Depot
Signed Finding of Suitability to Lease Documents	1996	Memphis Depot
Groundwater Characterization Data Report	1998	U S Army Corps of Engineers and CH2M Hill
Revised Final BRAC Parcel Summary Reports	1998	U S Army Corps of Engineers and CH2M Hill
Final Remedial Investigation Sites Letter Reports	1998	U S Army Corps of Engineers and CH2M Hill
Final Screening Sites Letter Reports	1998	U S Army Corps of Engineers and CH2M Hill
Final Background Sampling Program Report	1998	U S Army Corps of Engineers and CH2M Hill
Final Preliminary Risk Evaluation	1998	U S Army Corps of Engineers and CH2M Hill
Final Baseline Risk Assessment for Golf Course Impoundments	1999	U S Army Corps of Engineers and Radian International, Inc
A Cultural Resources Inventory and Assessment at Defense Distribution Depot Memphis, Tennessee	1997	U S Army Corps of Engineers and TRC Manah Associates, Inc
Archeological Survey of Two Parcels at Defense Distribution Depot	1997	U S Army Corps of Engineers and Prewitt & Associates,

**TABLE B-1**  
**TECHNICAL DOCUMENTS SUMMARY**

Document	Year	Author
Memphis, Tennessee		Inc
Final Environmental Assessment of BRAC 95 Disposal and Reuse of Defense Depot Memphis Tennessee	1998	Tetra Tech, Inc. U S Army Corps of Engineers Mobile District and U S Army Materiel Command.
Final Streamlined Risk Assessment Parcel 3 Technical Memorandum	1999	U S Army Engineering and Support Center Huntsville and CH2M Hill
Post Removal Report, Family Housing Area, Memphis Depot, Tennessee, Volumes I and II	1999	U S Army Corps of Engineers Mobile and OHM Remediation Services, Corp
Post Removal Report, Cafeteria Building, Memphis Depot, Tennessee	1999	U S Army Corps of Engineers Mobile and OHM Remediation Services, Corp
Final Engineering Evaluation and Cost Analysis (EE/CA), Old Paint Shop and Maintenance Area, Parcels 35 and 28	1999	U S Army Engineering Support Center Huntsville and CH2M Hill
Final Engineering Evaluation and Cost Analysis (EE/CA) for the Removal of Chemical Warfare Materiel, Former Defense Distribution Depot Memphis, Tennessee	1999	U S Army Corps of Engineers Mobile and Parsons Environmental Science Inc
Interim Remedial Action Groundwater Extraction System, Project Documentation, Volumes I and II	1999	Memphis Depot Caretaker, U S Army Corps of Engineers Mobile District and OHM Remediation Services Corp
Final Community Relations Plan	1999	Memphis Depot Caretaker and Frontline Corporate Communications
Project Closure Report, Parcels 28/35, Old Paint Shop and Maintenance Area	2000	U S Army Corps of Engineers, Mobile District and Jacobs/Sverdrup Inc
Main Installation Remedial Investigation Report	2000	U S Army Engineering and Support Center Huntsville and CH2M Hill
Main Installation Feasibility Studies for Groundwater and Soil	2000	U S Army Engineering and Support Center Huntsville and CH2M Hill
Dunn Field Remedial Investigation Field Sampling Plan Addendum II	2000	U S Army Engineering and Support Center Huntsville and CH2M Hill
Annual Operations Report, Groundwater Interim Remedial Action, Dunn Field	2000	U S Army Corps of Engineers, Mobile, AL, and OHM Remediation Services Corp

**TABLE B-1**  
**TECHNICAL DOCUMENTS SUMMARY**

<b>Document</b>	<b>Year</b>	<b>Author</b>
Quarterly Groundwater Quality Report, Groundwater Interim Remedial Action, Dunn Field (Year Two, Quarters One, Two, and Three)	2000	U S Army Corps of Engineers, Mobile, AL, and Jacobs/Sverdrup Engineering Group and IT
Remedial Field Sampling Plan Addendum II for Dunn Field	2000	U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill
Data Collection Plan for Long-Term Operational Areas (LTOAs), Main Installation	2001	U S Army Engineering and Support Center Huntsville and CH2M Hill
Well Construction and Sampling Techniques for LTOA Monitoring Wells Associated with SS42/SS43, NE6 (Building T-702), and SS80	2001	U S Army Engineering and Support Center Huntsville and CH2M Hill
Soil Vapor Extraction Treatability Study Work Plan	2001	U S Army Engineering and Support Center Huntsville and CH2M Hill
Decontaminate and Closure of Permitted Container Storage Facility (Building 308) and Removal of Lead Impacted Soil at Building 949	2001	U S Army Corps of Engineers South Atlantic Division, Mobile, and Jacobs Engineering Services
Decontamination Report and Certification for Closure of Permitted Container Storage Facility (Building T-308)	2001	U S Army Corps of Engineers South Atlantic Division, Mobile, and Jacobs Engineering Services
Final Report Chemical Warfare Materiel Investigation and Removal Action at Defense Depot Dunn Field	2001	U S Army Engineering and Support Center Huntsville, AL, and UXB International
Annual Operation and Maintenance Summary Report for Year 2000, Groundwater Interim Remedial Action, Dunn Field	2001	U S Army Corps of Engineers, Mobile, AL, and Jacobs Engineering Group
Semi-Annual Groundwater Quality Report Groundwater Interim Remedial Action, Dunn Field (Year Three, First Half)	2001	U S Army Corps of Engineers, Mobile, AL, and Jacobs Engineering Group
Revision 2 Dunn Field Remedial Investigation Report	2002	U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill
Revision 2 Main Installation Remedial Design Workplan	2002	U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

710 288

REGION IV

345 COURTLAND STREET NE  
ATLANTA, GEORGIA 30363

May 1, 1996

4WD-FFB

Certified Mail  
Return Receipt Requested

Colonel Michael J. Kennedy, Commander  
Defense Distribution Depot Memphis  
2163 Airways Boulevard  
Memphis, Tennessee 38114-5210

SUBJ: Concurrence with Interim Record of Decision, Operable Unit 1  
Defense Distribution Depot Memphis, Tennessee

Dear Col. Kennedy:

The U.S. Environmental Protection Agency (EPA) Region IV has reviewed the above referenced decision document and concurs with the Interim Record of Decision (IROD) for groundwater at Operable Unit 1, Dunn Field, as supported by the Remedial Investigation in progress.

The selected remedy is Alternative 8 in the IROD. EPA concurs with the selected remedy as detailed in the IROD with the following stipulation: *It is understood that the selected interim remedy for Operable Unit 1 may not be the final remedial action to address all media potentially affected by past disposal practices at this unit.*

This action is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action and is cost effective.

Sincerely,

Richard D. Green  
Acting Director  
Waste Management Division

cc Jordan English, Tennessee Department of Environment & Conservation



STATE OF TENNESSEE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
MEMPHIS ENVIRONMENTAL FIELD OFFICE  
SUITE E-645, PERIMETER PARK  
2510 MT MORIAH  
MEMPHIS, TENNESSEE 38115-1520

April 24 1996

Commander  
Defense Distribution Depot Memphis  
Attn. DDMT-DE (Ms Christine Kartman)  
2163 Airways Blvd,  
Memphis, Tennessee 38114-5210

Re: Concurrence for the Record of Decision for Interim Remedial Action of the Groundwater at Dunn Field (OU-1) at the Defense Depot site, Memphis, Shelby County, Tennessee, April 1996. TDSF #79-736, cc 82

Dear Ms Kartman:

The Tennessee Division of Superfund (TDSF) Memphis Field Office (MFO) has reviewed the Interim Remedial Action Record of Decision for the Groundwater at Dunn Field for the Defense Depot site dated April 1996 referenced above.

The Tennessee Department of Environment and Conservation (TDEC) is in concurrence with the selected remedy, a pump and treat containment alternative, Alternative 8 as described. TDEC has been actively involved with the development of the alternatives as well as the selection process through closely coordinated project management among Base Closure Team (BCT) members and extended BCT members.

This concurrence is provided within the authority of the Federal Facilities Agreement (FFA) for the Defense Depot, the Defense Department/State Memorandum of Agreement (DSMOA), and the delegated powers of the Commissioner of TDEC as part of the President's five step Base Cleanup Plan (BCP) process.

Sincerely,

Clint Willer, Director  
Tennessee Division of Superfund

c TDSF, NCO  
TDSF, MFO  
Dann Spanosu  
United States Environmental Protection Agency  
Federal Facilities Branch  
345 Courtland Street, N E  
Atlanta, GA 30365

# **Record of Decision**

**for Interim Remedial Action**

**of the**

**Groundwater at Dunn Field (OU-1)**

**at the**

**Defense Distribution Depot  
Memphis, Tennessee**

**April 1996**

## Executive Summary

This Record of Decision (ROD) presents the selected interim remedial action (IRA) for DDMT in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). In 1992, after receiving a Hazard Ranking System (HRS) score of 58.06, DDMT was placed on the National Priorities List by the Environmental Protection Agency. The selected IRA provides for hydraulic control of a contaminant plume in groundwater beneath Dunn Field. Contaminants identified as those of potential concern include volatile organic compounds, such as solvents used for cleaning mechanical parts, and metals. It is not intended as a permanent solution; however, it is intended to be compatible with the final remedy.

DDMT and the involved regulatory agencies have been working to inform the community about activities involved with the site since 1992 through press releases, mailings, newspaper ads, and public meetings.

Eight alternatives, each consisting of groundwater extraction, groundwater treatment, and disposal components, were evaluated. The alternative chosen as the preferred alternative consists of extraction on/offsite and discharge to a publicly owned treatment works (POTW). This alternative assumes that pretreatment will not be necessary before treatment at the POTW. If, however, chemical analyses indicate that pretreatment is necessary, a pretreatment provision is part of the contingency remedy.



## 1.1 Site Name and Location

Defense Depot Memphis, Tennessee (DDMT)  
Memphis, Shelby County, Tennessee

## 1.2 Statement of Basis and Purpose

This decision document (Record of Decision [ROD]) presents the selected interim remedial action (IRA) for the DDMT site, Memphis, Tennessee, developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), 42 U.S.C. Section 9601 *et seq.*, and to the extent practicable, the National Oil and Hazardous Pollution Contingency Plan (NCP) 40 *Code of Federal Regulations* (CFR) Part 300. The DDMT is the lead agency for the remedial investigation/feasibility study (RI/FS) process for the site. The U.S. Environmental Protection Agency (EPA) and the Tennessee Department of Environment and Conservation (TDEC) are the supporting regulatory agencies for the site. In accordance with 40 CFR 300.430, the regulatory agencies have provided input during this process. The regulatory agencies are provided with a draft IRA ROD for review and their comments are incorporated into the final document. The U.S. EPA and the State of Tennessee concur with the selected interim remedy.

## 1.3 Assessment of the Site

Actual or threatened releases of hazardous substances from the DDMT site, if not addressed by implementing the IRA selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, and the environment.

## 1.4 Description of Interim Remedial Action

This IRA provides for hydraulic control of a contaminant plume in groundwater beneath Dunn Field (also called OU-1). Because the contaminated Fluvial Aquifer poses a potential threat to the deeper Memphis Sand Aquifer, it is considered as a potential threat to human health and the environment. Thus, the groundwater IRA is designed to provide a quick, interim response measure that will help prevent the possible contamination of the area's drinking water supply. As a contingency remedy, the IRA also includes a provision for pretreatment if necessary. As described in the IRA Proposed Plan contained in the Administrative Record, follow-on activities include monitoring the groundwater plume and its response to the IRA. Once the plume has been fully characterized, subsequent action may be taken to provide long-term definitive protection, including remediation of source areas. To the extent possible, the interim action will not be inconsistent with, nor preclude implementation of, the expected final remedy. RI/FS activities at OU-2, OU-3, and OU-4 will address contamination found within the southwestern quadrant, southeastern watershed and golf course, and northern portions of the Main Installation, respectively.

This IRA addresses only Dunn Field OU-2, OU-3, and OU-4 will be addressed in the remedial documents for those OUs

The major components of the selected IRA for OU-1 include the following:

- Evaluation of aquifer characteristics which may include installation of a pump test well
- Installation of additional monitoring wells to locate the western edge of the groundwater plume
- Installation of recovery wells along the leading edge of the plume
- Obtaining discharge permit for disposal of recovered groundwater to the T E Maxson Wastewater Treatment Plant publicly owned treatment works (POTW) or municipal sewer system
- Operation of the system of recovery wells until the risk associated with the contaminants is reduced to acceptable levels or until the final remedy is in place
- Chemical analysis will be conducted to monitor the quality of the discharge in accordance with the city discharge permit requirements; the permit will include parameters to be monitored and frequency

### 1.5 Declaration

This interim action is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate, and is cost-effective. This action is interim, it is not intended as a permanent or final remedy. However, it is intended to be compatible with the permanent solution. It is not intended to be the permanent solution, and uses alternative treatment technologies to the maximum extent practical for this interim response. Because this action does not constitute the final remedy for this OU, the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volumes as a principal element has not been entirely accommodated and will be addressed at the time of the final response action. Subsequent actions are planned to address fully the threats posed by the conditions at this OU. Because this remedy will result in hazardous substances remaining onsite above health-based levels, a review will be conducted to ensure that the remedy continues to provide adequate protection of human health and the environment within 5 years after the commencement of this remedial action. Because this is an interim action ROD, review of the remedy will be ongoing as DDMT continues to develop the final remedial action for OU-1



CHRISTINE E. KARTMAN  
Chief, Environmental Protection and Safety Office

April 9, 1996

Date

**Engineering Evaluation/Cost Analysis  
for the Removal of Chemical Warfare Materiel  
Former Defense Distribution Depot Memphis, Tennessee**

**ADDENDUM 1  
SITE NUMBERS TO AREA NUMBERS**

The EE/CA for the removal of chemical warfare materiel at the former Defense Distribution Depot Memphis refers to potential CWM burial pits and trenches as "areas." These areas were referred to as sites in previous documents and on figures and maps. The areas identified for investigation under this EE/CA correlate to the site numbers as follows.

Areas A-1 and A-2 correlate to Site 24. These two areas were identified as the suspected locations of trenches and/or pits where leaking German bombs containing CWM were drained, neutralized, destroyed, and buried. The geophysical investigation, ASR review, and aerial photo study confirmed that activities took place in these areas that could have included the disposal of CWM in trenches/pits on Dunn Field. The findings of the EE/CA recommend that removal actions be implemented for A-1 and A-2.

Area B-1 correlates to Site 86 and Site 9. Area B-1 was described in the Archives Search Report (ASR) as two long trenches that were used for the disposal of XX-CC-3 Impregnite, DANC, Chlorinated Lime and RH195. The ASR also states that these areas were used to dispose of food supplies and such. Maps that were used to record these disposals show the trenches containing food supplies and ashes and metal refuse. In addition to these activities, another trench listed as Site 18 is located next to Site 86 and may actually cover part of Site 86. Site 18 contains refuse from a plane crash and was buried in 1984. The geophysical investigation identified the areas where these trenches are located. However, based on the lack of data supporting the disposal of CWM in these trenches, Area B-1 is not recommended for removal action.

Area B-2 correlates to Site 1. Area B-2 is a pit where Chemical Agent Identification Sets were buried in 1955-1956. Broken sets were reportedly buried 5 or 6 times by placing them in a pit and covering with dirt. This pit was marked on maps as Site 1 and dated as 22 July 1955. The existence and location of the burial pit is documented in the ASR and an USATHAMA report (Installation Assessment of Defense Depot Memphis, TN, Report No. 191, March 1981). Area B-2 is recommended for removal action.

SITE CORRELATION TABLE		
EE/CA Site Number	RI/FS Site Number	New Site Number
A-1 (Mustard bomb burial trench)	24	24-A
A-2 (Chlorinated lime pits)	24	24-B
B-1 (Food stuff burial trench)	9 & 86	9 & 86
B-2 (CAIS burial pit)	1	1

---

*Action Memorandum*

**Removal of Chemical  
Warfare Materiel,  
Parcel 36  
Former Defense Distribution  
Depot Memphis, Tennessee**

Defense Logistics Agency  
Defense Distribution Depot Susquehanna Pennsylvania  
Memphis Depot Caretaker Division  
Memphis, TN 38114-5210



April 2000

**ACTION MEMORANDUM****Removal of Chemical Warfare Materiel****Parcel 36****Former Defense Distribution Depot Memphis, Tennessee**

Site Status: Closed Industrial Area

Category of Removal: Non-Time-Critical Removal Action

CERCLIS ID: TN4 201 002 0570

Site ID: Sites 1, 9, 24, 86

**I. Purpose**

The purpose of this Engineering Evaluation and Cost Analysis (EE/CA) Action Memorandum is to document approval of the proposed removal action described herein for Sites 1, 24A, and 24B Areas A and B of Dunn Field at the former Defense Distribution Depot Memphis, Tennessee (Memphis Depot or Depot) located at 2163 Airways Boulevard, Memphis, Tennessee 38114. The Depot is in Shelby County. The action is required by and is being taken pursuant to the Department of Defense Ammunition and Explosive Standard (DoD 6055.9) Chapter 12, paragraph 3.2 regarding Land Disposal. This parcel is subject to future transfer from the federal government per the Base Realignment and Closure Act, 1995.

The United States Army Corps of Engineers (USACE) is the lead respondent under the Defense Environmental Restoration Program and the Defense Logistics Agency is the lead agency under the USEPA Federal Facilities Agreement. Based on the results of the completed EE/CA, the excavation and removal alternative is recommended for the sites identified as potentially containing chemical agent. Excavation and removal of chemical warfare materiel (CWM) will eliminate the possibility of exposure and hazards to the public and the environment from CWM at the suspected burial pits and trenches. It is the only alternative that fully meets the remedial objective: to ensure that exposure to any level of CWM does not occur in the future. The EE/CA was prepared to document the potential alternatives that were analyzed and to recommend the appropriate alternative for the site. *The State of Tennessee and USEPA have participated and are in agreement with the selected remedy.*

The administrative record for this site is located at the Memphis Depot. Additional information repositories that include copies of the administrative record are: the Memphis/Shelby County Health Department in Memphis, TN; the Memphis/Shelby County Public Library, Main and Cherokee Branches, and in the Memphis Depot Community Outreach Room.

## II. Site Conditions and Background

### A. Site Description

#### 1. Removal Site Evaluation

The Memphis Depot is a former Defense Department supply depot. The Depot operated from World War II until its closure in 1997. Since closure, the Depot has been operated by the Memphis Depot Caretaker, a division of the Defense Distribution Depot Susquehanna, Pennsylvania. As part of Base Realignment and Closure (BRAC) activities, the Depot was divided into 36 parcels to assess the environmental condition of each parcel and to determine if it can be transferred from government ownership to private or public-sector uses. Dunn Field is parcel number 36.

The history of CWM disposal at Dunn Field began in July 1946 when 29 mustard-filled German bomb casings were destroyed and buried. Most likely these bomb casings were filled with sulfur mustard. These bomb casings were part of a railroad shipment en route from Mobile, Alabama to Pine Bluff, Arkansas. Records indicate that some of the bomb casings were leaking and had resulted in the contamination of the rail lines and freight cars that contained the munitions. Prior to reaching Pine Bluff, three railcars were identified as containing leaking munitions and these cars were transferred to the Memphis Depot for proper handling. These railcars were staged in the Main Installation area for unloading and decontamination. As the bomb casings were unloaded from the railcars, those found to be leaking were taken to a pit, containing a bleach (chloride of lime) solution, that was constructed at Dunn Field for draining of the mustard. Reports indicate the drained bomb casings were then destroyed and buried in a shallow trench in case any of the bomb casings contained a burster charge. A total of twenty-four 500 kilogram and five 250 kilogram bombs were destroyed. These two sites are in Area A.

During the early to mid 1950s, Chemical Agent Identification Sets (CAIS) were buried in Dunn Field. These sets were used by the military to train soldiers to identify chemical agents in the field and were probably K951/K952 sets that contained small glass ampoules of mustard, lewisite, and chloropicrin, mixed with chloroform. Set K951/K952 also included an ampoule of concentrated phosgene. At least six sets were buried at Dunn Field. CAIS stocks found to be leaking or broken during periodic inspection were reportedly buried in Dunn Field. The chloroform was included in the ampoules as a solvent. Each of the ampoules, with the exception of phosgene, contained anywhere from 0% to 50% chloroform. This site is in Area B.

The investigation at Dunn Field included an archives and literature search, interviews with former Memphis Depot employees, aerial photograph study, geophysical investigations, soil borings and sampling, groundwater well installation and sampling, sampling data analysis, and a streamlined risk evaluation (both human health and ecological). Three locations in Areas A and B were identified as potential CWM burial pits and trenches. CWM was not found in any of the soil or groundwater samples collected around the geophysical anomalies that are the burial sites. The results of the risk evaluation indicated that no adverse effects to human or ecological receptors are expected from exposure to environmental media outside of the burial pits or trenches. However, it is assumed that

chemical agents are present in the pits/trenches and that exposure to these materials would, by definition, present an unacceptable risk to receptors.

## 2. Physical Location

The Memphis Depot is a 642-acre area in the central section of Memphis, Tennessee, approximately 5 miles east of the Mississippi River, 4 miles from the central business district of Memphis, and approximately 1 mile north of the Memphis International Airport. Airways Boulevard borders the Depot on the east and is the primary access to the Main Installation. Dunn Road, Ball Road, and Perry Road serve as northern, southern, and western boundaries, respectively, of the Main Installation. Figure 1 shows the general location of the Depot within the Memphis area. Figure 2 shows the configuration of the Depot and its location with respect to the surrounding streets.

The Depot is located in an area of widely varying uses. Most of the land surrounding the Depot is intensely developed. The area immediately east of Dunn Field bounded by Hayes Road, Dunn Road, Castalia Road, and Persons Avenue is residential. The area north of Dunn Road and between Dunn Field and Dunn Elementary School is part residential and part industrial. To the north of the Depot are rail lines of the Frisco Railroad and Illinois Central Gulf Railroad. Large industrial and warehousing operations are located along the rail lines in this area. A triangular area immediately to the north of the Depot, bounded by Dunn Road, Castalia Road, and Frisco Avenue, also contains several industrial facilities. Formerly a residential neighborhood, the area is characterized by small commercial and manufacturing uses with some single-family residences remaining.

Airways Boulevard is the most heavily traveled thoroughfare in the vicinity and is developed with numerous small commercial establishments. Businesses along Airways Boulevard are typical of highway commercial districts. Other commercial establishments are located to the north, south, and west of the Depot. Most are small grocery or convenience stores that serve their immediate neighborhoods. The Depot is surrounded by residential development, including single- and multiple-family residences. Numerous schools and small church buildings are located throughout the area.

## 3. Site Characteristics

Dunn Field is located to the north of the Main Installation (north of Dunn Avenue) and was used in the past for bulk mineral storage and waste disposal. It was divided into four areas for the purpose of the EE/CA (Area A, B, C, and D [Figure 3]). Areas A and B are the only areas where CWM disposal was documented in the past. The majority of Areas A and B are covered with grass that is mowed regularly. Areas A and B are approximately 19 acres in size and the topography is characterized by flat to gently rolling slopes and hills.

The Depot is currently under the ownership Department of Army and is operated by the Defense Logistics Agency. Dunn Field will be transferred to the ownership of the Depot Redevelopment Corporation or sold through public sale for reuse.

#### **4. Release or Threatened Release Into the Environment of a Hazardous Substance, Pollutant, or Contaminant**

Soil and groundwater samples were collected during the EE/CA for Dunn Field. Soil samples were collected between 0 and 15 foot depths. Groundwater samples were collected from six new wells installed directly downgradient of the suspected burial pits and two existing wells. 45 soil samples and eight groundwater samples were collected and analyzed. The following paragraphs describe the laboratory results from these samples.

Twenty-two metals were detected in site surface soil samples. Thallium was the only metal not detected out of those for which analysis was conducted. These detections are comparable to natural background conditions. Three explosive compounds were detected at trace levels in surface soils. These included 2,4,6-trinitrotoluene, HMX (octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazorine), and RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine). These compounds were detected in two samples. No CWM or breakdown products were detected in any surface soil samples.

Twenty metals were detected in subsurface soil samples. These detections are comparable to natural background conditions. Of those metals analyzed, cadmium, silver, and thallium were the only metals not detected. Two explosive compounds were detected at trace levels in subsurface soils. These included 2,4,6-trinitrotoluene and RDX. The compound 2,4,6-trinitrotoluene was detected in three samples. RDX was detected in one sample. No CWM or breakdown products were detected in any of the subsurface soil samples.

Thirteen metals were detected in site groundwater samples collected from wells MW-56 to MW-61. These included: aluminum, antimony, arsenic, barium, chromium, cobalt, copper, iron, lead, manganese, nickel, vanadium, and zinc. These detections are comparable to natural background conditions. Due to the conservative nature of the data validation process, fourteen explosive compounds were estimated at the reporting limit in the sample from MW-56. These explosives may or may not have been present in the sample, but were certainly no higher than the reporting limit. These compounds were not detected in any other groundwater sample. No other constituents were detected in groundwater.

#### **5. NPL Status**

The Memphis Depot was placed on the National Priorities List (NPL) in October 1992, and must fulfill requirements under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP). The Depot is under the jurisdiction of the Tennessee Department of Environment and Conservation (TDEC) and EPA Region IV.



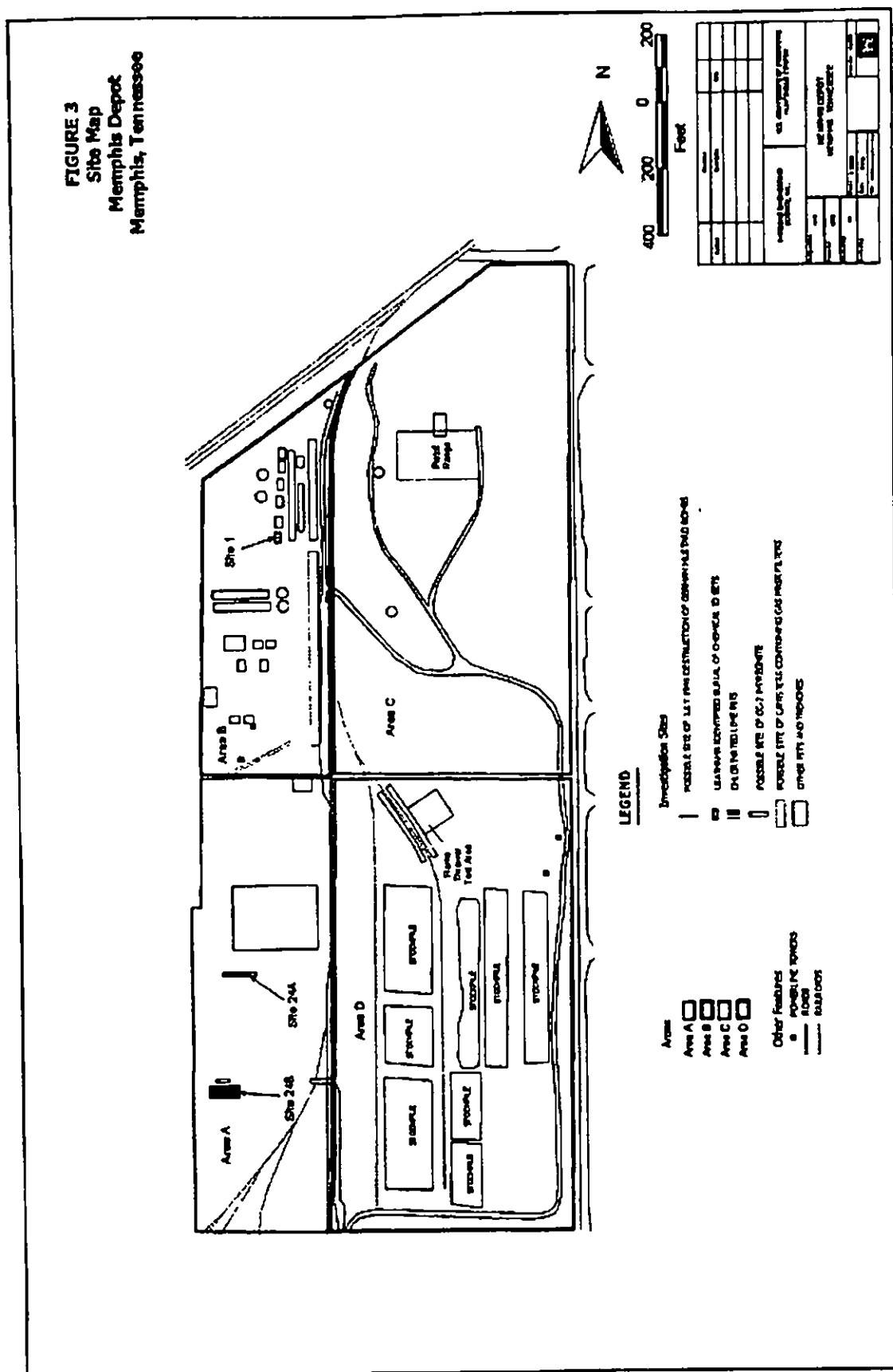


Figure 3. Site Map

A site wide Remedial Investigation and Feasibility Study (RI/FS) is currently being prepared for the Depot in accordance with CERCLA and NCP to evaluate human health and environmental risk, and to screen for potential remedial actions.

The proposed removal action outlined in this Action Memorandum, however, is proposed voluntarily by the Defense Logistics Agency to remove suspected CWM at Dunn Field to eliminate potential risks to human health and the environment and to facilitate property transfer. Further remedial action requirements for other sites on Dunn Field and other potential contaminants, if any, will be determined by a record of decision following the RI/FS. The proposed removal action will not preclude remedial actions, if any are required, for other environmental media or sites.

## **B. Other Actions**

### **1. Previous Actions**

No previous actions have been undertaken to address the suspected CWM at Dunn Field.

### **2. Current Actions**

Currently, a Remedial Investigation at Dunn Field is in progress and a groundwater recovery system is in operation along the western and northern edges of Area B. However, these actions are unrelated to the CWM investigation.

## **III. Threats to Public Health, Welfare, or the Environment**

### **A. Threats to Public Health or Welfare**

A streamlined risk evaluation was conducted for the areas directly adjacent to suspected CWM burial pits. The risk evaluation included a human health risk evaluation (HHRE) and an ecological preliminary risk evaluation (PRE). Potential exposure for both current and future human receptors to groundwater and soil at Dunn Field was evaluated in the HHRE. Chemicals that were found in soil and groundwater samples were evaluated as potential risks to these human and ecological receptors. Constituents of Concern (COCs) identified from the HHRE included lead in surface soil (0-1 foot); lead, chromium, and iron in mixed surface and subsurface soil (0-11 feet); and nitrobenzene, aluminum, iron, and manganese in groundwater. Based on the risk analysis that indicated safe levels and the fact that these COCs are not CWM related, none were identified as COCs to be removed. Therefore, adverse effects to current and future human receptors resulting from exposure to site media are not expected to occur in the areas directly adjacent to the suspected CWM burial pits.

### **B. Threats to the Environment**

An ecological PRE, including a site walk, a visual inspection, and soil screening, was conducted at Dunn Field. Chemical compounds in surface soil (0-1 foot) and mixed surface and subsurface soil (0-11 feet) were evaluated and the ecological site characterization indicated it is highly unlikely that wildlife populations would be sustained at Dunn Field or in the surrounding area. No significant impacts to ecological populations are expected from CWM or CWM byproducts in the areas directly adjacent to the suspected CWM burial pits.

## **IV. Endangerment Determination**

Although soil or groundwater samples were not collected directly beneath or within the suspected CWM burial pits, it is assumed that CWM exists in these areas and they are, by definition, toxic to human and ecological receptors. These wastes will result in an unacceptable risk if left in place. Therefore, removal actions are necessary to reduce or eliminate the potential CWM risk posed by these wastes. The locations of the removal areas are shown on Figure 4.

## **V. Proposed Actions and Estimated Costs**

### **A. Proposed Actions**

Four alternatives were evaluated for the removal action at Dunn Field. These alternatives include:

- **Alternative 1** - No further action;
- **Alternative 2** - Institutional controls;
- **Alternative 3** - Capping; and
- **Alternative 4** - Excavation and Removal of CWM.

Alternatives were evaluated in terms of effectiveness, implementability, cost, and the following removal action goals and objectives:

- Reduce or eliminate any chemical risk posed by CWM that remains at Sites 1, 24A, and 24B in Dunn Field;
- Remove any OE found in the suspected CWM burial pits;
- Recommend a response that is consistent with the intended future land use of the site;
- Have a reasonable and acceptable cost; and
- Be implemented in an expedited manner to meet BRAC parcel transfer and leasing schedules.

Alternative 4 is the only alternative that fully meets the removal action goals and objectives, including the Department of Defense Ammunition and Explosive Standard (DoD 6055.9).

### **1. Description of Proposed Action**

The proposed action (Alternative 4) includes the following elements:

- Excavating and off-site disposal of the material contained in the three areas shown on Figure 4; and
- Confirmatory soil sampling.

## 2. Contribution to Remedial Performance

The proposed removal action will remove the source of contamination (e.g., pit contents and contaminated soil) to the extent necessary to facilitate transfer of the property for further industrial or commercial reuse. It will also remove the potential risk of exposure to subsurface contamination in the areas of concern where such soils could present a hazard for future development or a potential source of groundwater contamination. Removal of the suspected CWM will support a No Further Action determination for Installation Restoration Program sites 1, 24A, and 24B.

## 3. Description of Alternative Technologies

On-site treatment of CWM contaminated soils was not evaluated due to the nature of the suspected contaminants and community issues. The objective of the removal action is to eliminate any potential exposure to CWM in the future. The proposed removal action, excavation and off-site disposal, may include either landfilling or treatment of contaminated soil at a regulator approved facility.

## 4. Engineering Evaluation/Cost Analysis (EE/CA)

The proposed removal action is based on removal action requirements and an alternatives evaluation documented in the *Engineering Evaluation/Cost Analysis (EE/CA), for the Removal of Chemical Warfare Materiel, Former Defense Distribution Depot, Memphis Tennessee*, dated June 1999, and information and decisions made subsequent to publication of that document. An information session/media day was held on September 19, 1998 in which the public and media were invited to a forum describing the findings of the field activities performed at Dunn Field and other areas of Memphis Depot. Approximately 40 citizens attended and concerns were mainly about the danger posed by CWM. A public notice/comment period on the EE/CA and the proposed removal action took place from June 10 to August 9, 1999. A public meeting to receive comments and a community information session were held on June 17, 1999. Approximately ten citizens attended this event. Appendix A, Responsiveness Summary, lists all comments made by the public during the 60-day public comment period and provides the agency's responses.

## 5. Applicable or Relevant and Appropriate Requirements (ARARs)

The following list of ARARs was developed on the basis of the proposed scope of work for the removal action and known or suspected conditions at the site:

- Contaminated soil and debris will be screened to determine if they are characterized as hazardous waste. Waste will be characterized as hazardous if the appropriate analysis determines that the wastes are reactive, ignitable, corrosive, or toxic as described in 40 CFR 261 Subpart D.
- Applicable Occupational Safety and Health Administration (OSHA) health and safety regulations will be followed during the removal operations. Workers performing the removal will be properly trained and under appropriate medical supervision. Appropriate personal protective equipment will be used and safe work practices will be followed.

- Water pollution control requirements of the federal Clean Water Act and National Pollutant Discharge Elimination System (NPDES) and applicable state and county requirements will be followed during all construction and decontamination operations.
- Applicable NCP requirements, including public comment period provisions, have been followed.

## **6. Project Schedule**

The U.S. Army Engineering Support Center, Huntsville, has procured a contractor for CWM cleanup actions at Sites 1, 24A, and 24B. Current projections indicate that the work will begin during the spring of 2000. It is estimated that three to six months will be required to complete the removal action once the contractor is on-site.

## **B. Estimated Costs**

The conceptual-level cost estimate for the proposed removal action ranges from \$3.2 to \$5.9 million. These costs are high and low estimates based on the amount of soil excavated and how it is characterized (i.e., CWM contaminated or HTRW contaminated). This cost estimate includes a direct capital cost (cost for transportation, and disposal) of \$1.8 to \$4.4 million and fixed costs (fees for subcontracts, travel and per diem and labor) of \$1.4 million.

Conceptual-level cost estimates are order-of magnitude cost estimates made without detailed engineering data and include estimates of major cost components and quantities as well as typical costs from similar work. It is normally expected that estimates of this type would be accurate to within plus 50 percent to minus 30 percent. The actual cost will be determined upon the award and completion of the removal action to a contractor.

No long-term operations and maintenance costs were included in the cost estimate because contaminants will be removed and no cap systems, treatment systems, etc., will be required after the removal action is complete.

## **VI. Expected Change in the Situation Should Action Be Delayed or Not Taken**

As long as suspected CWM remains in place at Dunn Field, there is a potential for exposure to the CWM in the burial pits and trenches and potential for migration of subsurface contaminants via infiltration and leaching of rainwater. However, recent sampling results indicate that migration of contaminants from the burial pits is not occurring. The Defense Logistics Agency can not absolutely prevent exposure to CWM after the property is transferred if the removal is not conducted.

## **VII. Outstanding Policy Issues**

The work is being funded fully by the Defense Logistics Agency. No policy issues concerning cost sharing or EPA funding are involved for the removal action.

## VIII. Enforcement

The proposed removal action is a non-time-critical removal action voluntarily being undertaken by the Defense Logistics Agency. It is not an enforcement action; however, review and oversight is provided by TDEC and EPA.

## IX. Decision

This Action Memorandum represents the selected removal action for Sites 1, 24A, and 24B, in Areas A and B of Dunn Field, part of the former Defense Distribution Depot Memphis, Tennessee. The United States Army Corps of Engineers is the lead respondent under the Defense Environmental Restoration Program and the Defense Logistics Agency is the lead agency for actions under the USEPA Federal Facilities Agreement. This Action Memorandum was developed in accordance with CERCLA as amended, and consistent with the NCP. The Department of Defense Ammunition and Explosive Standard (DoD 6055.9) requires the action. The decision is based on the information in the administrative record for the site.

Conditions at the site meet the NCP section 300.415(b)(2) criteria for a removal action and I approve the proposed removal action.



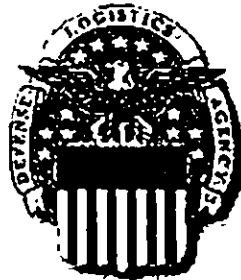
J. W. KENNEY  
Captain, SC, USN  
Commander

---

*Action Memorandum*

**Old Paint Shop and  
Maintenance Area,  
Parcels 35 and 28  
Former Defense Distribution  
Depot Memphis, Tennessee**

Defense Logistics Agency  
Defense Distribution Depot Susquehanna Pennsylvania  
Memphis Depot Caretaker Division  
Memphis, TN 38114-5210



September 1999

**ACTION MEMORANDUM**  
**Old Paint Shop and Maintenance Area**  
**Parcels 35 and 28**

**Former Defense Distribution Depot Memphis, Tennessee**

Site Status: Closed Industrial Area

Category of Removal: Non-Time-Critical Removal Action

CERCLIS ID: TN4 201 002 0570

Site ID: Sites 29, 32, 88, 89

## **I. Purpose**

The purpose of this Action Memorandum is to document approval of the proposed removal action described herein for the paint shop and maintenance area at the former Defense Distribution Depot Memphis, Tennessee (Memphis Depot or Depot) located along 2163 Airways Boulevard, Memphis, Tennessee 38114. The Depot is in Shelby County.

## **II. Site Conditions and Background**

### **A. Site Description**

#### **1. Removal Site Evaluation**

The Memphis Depot is a former Defense Department supply depot. The Depot operated from World War II until its closure in 1997. Since closure, the Depot has been operated by the Memphis Depot Caretaker, a division of the Defense Distribution Depot Susquehanna, Pennsylvania.

As part of Base Realignment and Closure (BRAC) activities, the Depot was divided into 36 parcels to facilitate assessment of the environmental condition of the property and to determine if it can be transferred from government ownership for private- or public-sector uses.

BRAC Parcels 35 and 28, located at the southwestern corner of the Depot, contain the former maintenance shop, grease rack, sandblast, paint shop, and storage facilities. The Depot Redevelopment Corporation plans to develop the area as part of BRAC activities for future commercial and industrial uses.

Chemical contamination identified in Parcel 35 and the southern portion of Parcel 28 primarily consists of contaminated surface soil, residue, and sediment remaining from past operations in the area. Historical information, on-site inspection, and the results of surface soil sampling from the parcels suggest that the following removal actions will be conducive to permit transfer of the parcels for the planned future reuse.

- Remove residue, dust, and sediment that have accumulated in buildings associated with past operations;



- Remove areas of contaminated surface soil identified by surface soil sampling inside the perimeter fence of the Main Installation; and
- Remove potentially contaminated soil related to a sump and underground storage tank (UST) locations at the former maintenance shop and grease rack facilities.

## 2. Physical Location

The Memphis Depot is a 642-acre area in the central section of Memphis, Tennessee, approximately 5 miles east of the Mississippi River, 4 miles from the central business district of Memphis, and approximately 1 mile north of the Memphis International Airport. Airways Boulevard borders the Depot on the east and is the primary access to the Main Installation. Dunn Road, Ball Road, and Perry Road serve as northern, southern, and western boundaries, respectively, of the Main Installation. Figure 1 shows the general location of the Depot within the Memphis area. Figure 2 shows the configuration of the Depot and its location with respect to the surrounding streets.

The Depot is located in an area of widely varying uses. Most of the land surrounding the Depot is intensely developed. To the north of the Depot are rail lines of the Frisco Railroad and Illinois Central Gulf Railroad. Large industrial and warehousing operations are located along the rail lines in this area. A triangular area immediately to the north of the Depot, bounded by Dunn Road, Castalia Road, and Frisco Avenue, also contains several industrial facilities. Formerly a residential neighborhood, the area is characterized by small commercial and manufacturing uses with some single-family residences remaining.

Airways Boulevard is the most heavily traveled thoroughfare in the vicinity and is developed with numerous small commercial establishments. Businesses along Airways Boulevard are typical of highway commercial districts. Other commercial establishments are located to the north, south, and west of the Depot. Most are small groceries or convenience stores that serve their immediate neighborhoods.

The Depot is surrounded by residential development, including single- and multiple-family residences. Numerous small church buildings and schools are located throughout the area.

## 3. Site Characteristics

Parcels 35 and 28 are located in the southwestern corner of the Depot (Figure 2). Approximately 7.5 acres of the 12-acre area contained in Parcels 35 and 28 are located within the perimeter fence surrounding the Main Installation (Figure 3). This area was industrial where maintenance and repair activities were undertaken. Except for the grassy area at its southern end, this portion of Parcels 35 and 28 consists of industrial buildings, concrete and asphalt pavements, and gravel surfacing.

Facilities within the Main Installation perimeter fence at this industrial area include:

- Building 1084 – A former maintenance shop, which also was used as a wood shop and a pesticide storage area;

- Building 1085 - A concrete slab from a former grease rack;
- Building 1086 - An industrial building formerly used as a preparation area, paint shop, and storage area;
- Building 1087 - An industrial building formerly used as a paint shop;
- Building 1088 - An industrial building with a former sandblast facility;
- Building 1089 - A partially enclosed warehouse where some sandblasting occurred; and
- Buildings 1090 and 1091 - Small Quonset huts formerly used to store paint and other supplies for paint shop operations.

The remaining 4.5 acres of Parcels 35 and 28 are located outside the perimeter fence. This area is a grassed utility corridor, which provides a buffer zone between the Main Installation perimeter fence and Perry Road.

The Depot is currently under the ownership of the Army and operational control of the Defense Logistics Agency. Parcels 35 and 28 will be transferred to the ownership of the Depot Redevelopment Corporation for reuse.

#### **4. Release or Threatened Release into the Environment of a Hazardous Substance, Pollutant, or Contaminant**

Surface soil samples (zero to 12 inches in depth) within the Main Installation perimeter fence at the industrial area have a variety of contaminants associated with the former functions of the area. The most frequently detected constituents were metals (copper, cadmium, lead, mercury, nickel, and zinc). Polycyclic aromatic hydrocarbons (PAHs) (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and phenanthrene) were also detected in significant quantities. In addition, the samples contained sparse concentrations of volatile organic compounds (VOCs) (acetone, methylene chloride, methyl ethyl ketone, and toluene); phthalates (bis(2-ethylhexyl)phthalate and di-n-butylphthalate); and pesticides (p,p'-DDE, p,p'-DDT, and dieldrin). The concentrations were distributed throughout the parcels and were not concentrated in a particular area.

Concentrations of PAHs and lead exceeding U.S. Environmental Protection Agency (EPA) Region III risk-based criteria for residential land use were detected in samples along Perry Road, within the utility corridor west of the Main Installation perimeter fence. PAHs and lead are common constituents of exhaust gases from motor vehicles. Concentrations of PAHs and lead from near-road samples adjacent to the paint spraying and sandblasting operations are elevated relative to other samples near the road but away from these operations. Therefore, although these constituents are commonly associated with burning of gasoline, it is possible that they are also associated with the paint spray and sandblasting operations. During the early stages of the removal action, additional sampling will be performed to determine if the lead and PAH in surface soil within Parcels 35 and 28 have been transported across the utility corridor toward Perry Road.

All of the industrial buildings within the fenced industrial area contain dust, residue, and sediment from their past operations. Although sampling has been minimal within the buildings, it is anticipated that constituents within the buildings will be similar to those

detected in the adjacent graveled areas. A 1993 survey of asbestos-containing materials (ACM) at the Depot identified the presence of asbestos-containing roof flashing materials on Building 1084 and asbestos-containing insulation for the heating system in Building 1087. Buildings 1086, 1087, 1088, and 1089 contained sandblast and/or paint booth facilities where lead-based paint residue may be present. Noticeable areas of scaling or peeling paint also are present in some buildings.

In addition, there are two subsurface areas within the fenced industrial area where known or suspected sources of contamination are present. The first area is the former underground storage tank (UST) location associated with the former grease rack, Building 1085. The UST, which was removed in 1989, contained waste oil, and also may have contained various other liquids containing petroleum hydrocarbons, pesticides, polychlorinated biphenyls (PCBs), and metals.

The second area is a gravel-filled sump beneath Building 1084 that drained a former maintenance pit. Potential contaminants in this area include petroleum hydrocarbons, solvents, and metals associated with the maintenance operations.

The potential release mechanisms for surface and near-surface contamination include transport of contaminated surface soil or residues by surface water runoff, off-site tracking of contaminated surface soil or residues by vehicles or personnel operating in the area, and suspension and migration of contamination as dust. There is also a potential for downward migration of contaminants from the previous UST and underground sump locations. The likely exposures to these potential release mechanisms are from dermal contact or ingestion by an on site worker. Exposure to dust from the suspension and migration of contamination is most likely when the site becomes disturbed during construction.

## 5. NPL Status

The Memphis Depot was placed on the National Priorities List (NPL) in October 1992, and must fulfill requirements under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP). The Depot is under the jurisdiction of the Tennessee Department of Environment and Conservation (TDEC) and EPA Region IV.

A sitewide remedial investigation and feasibility study (RI/FS) is currently being prepared for the Depot in accordance with CERCLA and NCP to evaluate human health and environmental risk, and to screen for potential remedial actions.

Proposed removal actions outlined in this Action Memorandum, however, are actions the Memphis Depot decided to voluntarily pursue to remove readily accessible chemical contamination in Parcels 35 and 28 to facilitate property transfer. Further remedial action requirements, if any, will be determined by a record of decision following the RI/FS. The proposed removal actions will not preclude remedial actions, if any are required, for other environmental media.

## B. Other Actions

### 1. Previous Actions

UST records at the Depot indicate that removal of a 1,000-gallon underground waste oil tank and in-place closure of the underground hydraulic fluid tank for the former hydraulic lift, were done in 1989 by the Memphis District, U.S. Army Corps of Engineers. No records of how the tanks were removed or closed are available. Observations of the vertical inlet pipe for the hydraulic fluid tank, however, suggest that the UST was closed by filling it with sand, a common practice at that time. However, this has not been confirmed.

### 2. Current Actions

No operational or remedial actions are currently ongoing in the vicinity of Parcels 35 and 28.

## III. Threats to Public Health, Welfare, or the Environment

### A. Threats to Public Health or Welfare

The expected land use of the area of Parcels 35 and 28 located within the Main Installation perimeter fence is industrial and commercial. Employees working within the industrial area of Parcels 35 and 28 will be the primary individuals encountering contamination within the area.

No risk assessment was conducted for the area. Instead, detected contaminant concentrations in Parcels 35 and 28 were compared with industrial screening criteria based on background concentrations, BRAC Cleanup Team (BCT) screening values, and EPA Region III risk-based concentrations (RBCs) corresponding to a Hazard Index (HI) of 1.0 and updated to current (October 1998) values. Contaminants that exceeded the industrial screening criteria were aluminum, antimony, arsenic, benzo(a)pyrene, iron, lead, and phenanthrene. Of these, arsenic and benzo(a)pyrene are carcinogens. The remaining contaminants are noncarcinogens.

### B. Threats to the Environment

There is no undisturbed natural habitat within the site. The land use is highly developed and industrial in nature, and little vegetation is present. According to the "Environmental Assessment for BRAC 95 Disposal and Reuse of the Defense Distribution Depot, Memphis, Tennessee" by Tetra Tech, no endangered species or wetlands are present in the area.

## IV. Endangerment Determination

Contamination has been detected in excess of industrial screening criteria within the industrial area contained in Parcels 35 and 28. The Memphis Depot has elected to perform the following removal actions to remove readily accessible contamination so that the property may be transferred for future industrial use:

- Remove residue, dust, sediment, and incidental ACM and lead-containing materials in readily accessible areas of existing industrial buildings in Parcels 35 and 28;

- Remove surface soil to a depth of 12 inches in areas within the Main Installation perimeter fence at the industrial area of Parcels 35 and 28 that had contaminant levels exceeding the industrial screening criteria for the Depot;
- If surface soils with PAH and lead concentrations exceeding residential risk-based criteria within the utility corridor are determined to be associated with operations within Parcels 35 and 28, remove to a depth of 12 inches; and
- Sample and remove contaminated soil related to a sump and UST locations at Buildings 1084 and 1085.

These locations are shown in Figure 4.

## V. Proposed Actions and Estimated Costs

### A. Proposed Actions

Three alternatives were developed for meeting the removal actions described above. These alternatives include:

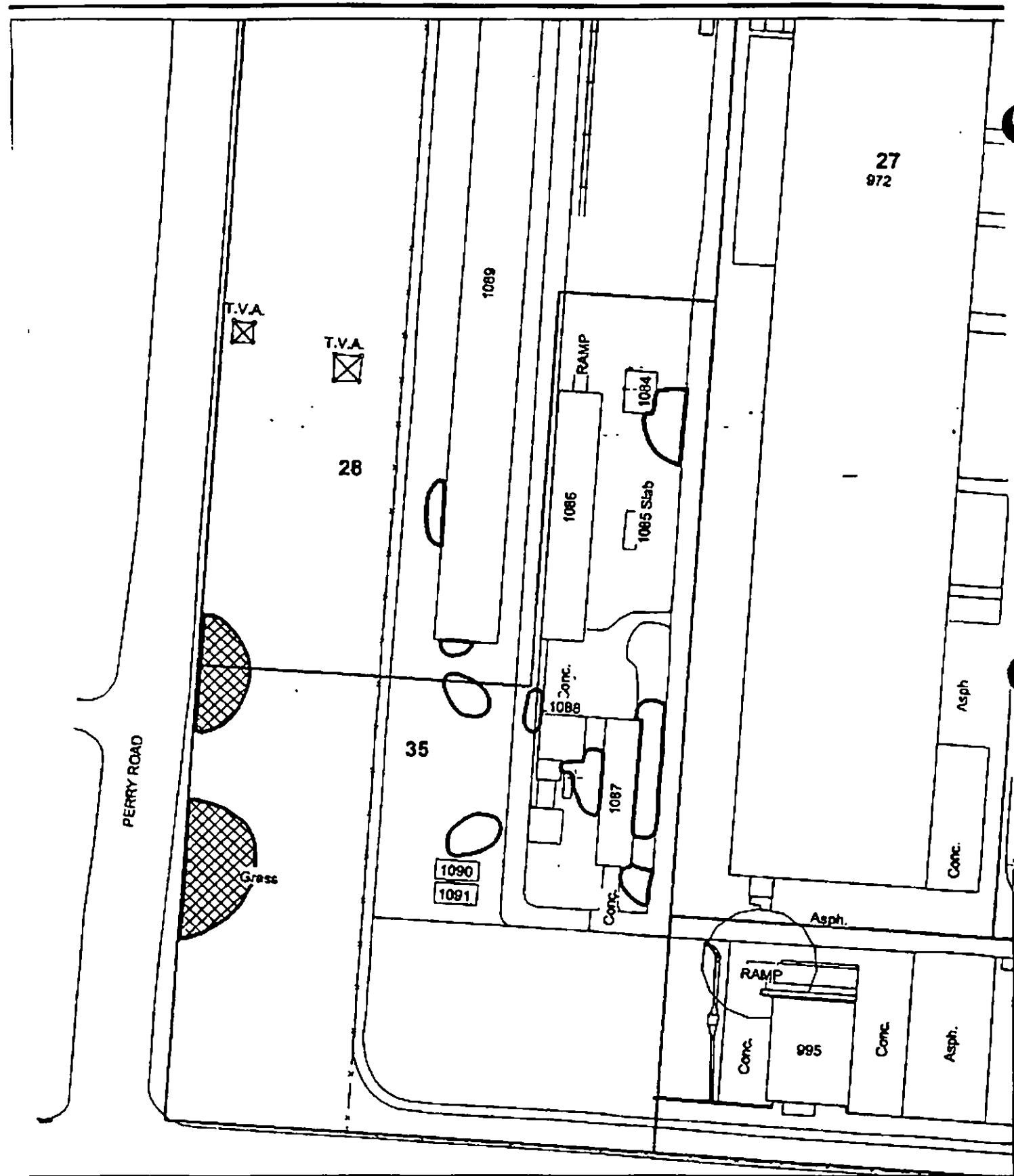
- Alternative 1 - Decontaminate Existing Metal and Masonry Buildings and Associated Equipment for In-Place BRAC Transfer; Remove and Dispose of Wooden Structures, Contaminated Soil, and Debris;
- Alternative 2 - Decontaminate Existing Metal and Masonry Buildings for In-Place BRAC Transfer; Decontaminate, Remove, and Dispose of Associated Equipment; and Remove and Dispose of Wooden Structures, Contaminated Soil, and Debris; and
- Alternative 3 - Decontaminate, Remove, and Dispose of All Above-Grade Buildings and Associated Equipment and Remove and Dispose of Contaminated Soil and Debris.

Alternatives were evaluated in terms of effectiveness, implementability, cost, and the following removal action goals and objectives:



- Reduce potential risk to long-term site users to a level deemed acceptable by EPA and TDEC;
- Be technically appropriate and feasible to accomplish using commonly accepted construction practices;
- Minimize, to the extent possible, the volumes of materials that must be removed and landfilled off-site;
- Have a reasonable and acceptable cost;
- Be implemented in an expedited manner to meet BRAC parcel transfer and leasing schedules; and
- Involve minimal post-removal operational, maintenance, or monitoring requirements.

All removal action alternatives can be implemented and all can meet the stated removal action goals and objectives. There is a potential for slightly greater effectiveness with

Alternatives 2 and 3, but this is offset by the increased work scope, disposal requirements, and cost.



SCALE (1" = 120') Note: Excavation limits shown are estimated limits for construction-estimating purposes. Actual limits will be determined by analytical sampling and testing during construction.

- LEGEND**
-  Excavation Limits (Industrial)
  -  Excavation Limits (Residential)

**Figure 4**  
**SITE CONFIGURATION WITH**  
**EXCAVATION AREAS**  
**BRAC PARCELS 35 & 28**  
**CH2MHI**

Alternative 2 was initially recommended because it provides, at a reasonable cost, open and fully decontaminated buildings that could be used for a variety of purposes. Upon further consultation with the Depot Redevelopment Corporation, Alternative 1 was selected because the proposed future use requires that the existing sandblast and paint booth facilities remain in place.

## 1. Description of Proposed Action

The proposed action (Alternative 1) includes the following elements:

- Remove all loose dust, debris, and surface residue from the exterior of sandblast and paint booth equipment to remain in place in Buildings 1086, 1087, and 1088. Collect confirmatory samples and compare analytical results with industrial screening criteria for the Depot.
- Remove all loose dust, debris, and surface residue from the interiors of Buildings 1086, 1087, 1088, 1089, 1090, and 1091, including slabs, sumps, and drainage structures. Collect confirmatory samples and compare analytical results with industrial screening criteria for the Depot.
- Clean all loose dust, debris, and surface residue and remove and dispose of Building 1084 wooden structure and slab.
- Remove contaminated surface soil to a depth of 12 inches and perform confirmatory sampling in areas inside the fenced industrial area where previous sampling indicated the presence of chemical contaminant levels exceeding the industrial screening criteria for the Depot. Collect confirmatory samples and compare analytical results with industrial screening criteria for the Depot.
- Conduct confirmatory sampling of surface soil outside the perimeter fence along Perry Road to confirm the belief that elevated PAH and lead levels are not associated with past industrial activities in Parcels 35 and 28. Remove contaminated soil outside the perimeter fence only if the confirmatory samples suggest that this is not the case. Soil exceeding residential risk-based criteria will be removed.
- Sample and remove contaminated soil related to the sump and UST locations at Buildings 1084 and 1085. Collect confirmatory samples and compare analytical results with industrial screening criteria for the Depot.

## 2. Contribution to Remedial Performance

The proposed removal action will remove residual contamination (e.g., contaminated surface soil, surface residues, debris, and dust) to the extent necessary to facilitate transfer of the property for further industrial or commercial reuse. It will also remove the potential risk of subsurface contamination in identified areas (e.g., sump area and UST location at Buildings 1084 and 1085) where such soils could present a hazard for future development in those areas or a potential source of groundwater contamination.

Removal of the soil will support a No Further Action determination for Installation Restoration Program sites in Parcels 35 and 28. Evaluation of potential groundwater remedial action will be performed as part of the CERCLA RI/FS for these sites.



### 3. Description of Alternative Technologies

On-site and off-site treatment alternatives to landfilling may be potentially viable from a technical perspective, but the relatively small volume of soil (less than 1,200 cubic yards) and the low cost of landfill disposal (approximately \$20 per cubic yard) at a local industrial landfill suggest that treatment options would not be cost-effective. As a result, no treatment alternatives to landfill disposal were considered.

### 4. Engineering Evaluation/Cost Analysis (EE/CA)

The proposed removal action is based on removal action requirements and an alternatives evaluation documented in the *Draft-Final Former Defense Distribution Depot Memphis, Tennessee, Engineering Evaluation/Cost Analysis (EE/CA), Old Paint Shop and Maintenance Area, Parcels 35 and 28*, dated April 1999, and information and decisions made subsequent to publication of that document. A final EE/CA document is currently being prepared to document these changes. Appendix A, Responsiveness Summary, lists all comments made by the public during the 60-day public comment period and provides the agency's responses.

### 5. Applicable or Relevant and Appropriate Requirements (ARARs)

The following list of ARARs was developed on the basis of the proposed scope of work for the removal action and known or suspected conditions at the site:

- Contaminated soil and debris will be screened to determine if they are characterized as hazardous waste. Waste will be characterized as hazardous if the appropriate analysis determines that the wastes are reactive, ignitable, corrosive, or toxic as described in 40 CFR 261 Subpart D.
- Applicable Occupational Safety and Health Administration (OSHA) health and safety regulations will be followed during the removal operations. Workers performing the removal will be properly trained and under appropriate medical supervision. Appropriate personal protective equipment (PPE) will be used and safe work practices will be followed.
- ACM will be packaged in leak-tight containers and disposed of in accordance with the appropriate OSHA, EPA, and Memphis/Shelby County Health Department/Pollution Control Division requirements.
- Lead-based paint will be managed in accordance with the appropriate OSHA and Memphis/Shelby County Health Department/Pollution Control Division requirements.
- PCB-contaminated materials, if any, will be managed in accordance with the Toxic Substances Control Act (TSCA). PCB-contaminated materials that contain a PCB concentration of 50 parts per million or greater will be disposed of at a TSCA-permitted incinerator or a TSCA-permitted chemical landfill.
- Soil surrounding former USTs will be removed to achieve the TDEC cleanup levels for petroleum contamination. In addition, soil will be subjected to the full scan of chemical analyses to identify other constituents that may be present. These constituents will be removed, as necessary, to the corresponding industrial cleanup standards.

- Water pollution control requirements of the federal Clean Water Act and National Pollutant Discharge Elimination System (NPDES) and applicable state and county requirements will be followed during all construction and decontamination operations.
- Applicable NCP requirements, including public comment period provisions, will be included as applicable.

## 6. Project Schedule

The Mobile District, U.S. Army Corps of Engineers, has procured a contractor for cleanup actions at the Depot. The removal action for Parcels 35 and 28 is scheduled to be the first action under the contract.

Current projections indicate that the work will begin during the fall of 1999. It is estimated that approximately 3 months will be required to complete the removal action once the contractor is on-site.

## B. Estimated Costs

The conceptual-level cost estimate for the proposed removal action is \$871,000. This cost estimate includes a direct capital cost (for example, cost for construction, construction oversight, transportation, and disposal) of \$792,000 and an indirect cost (for example, fees for engineering and design, legal, and licenses) of \$79,000. Indirect costs are assumed to be about 10 percent of the direct costs. Conceptual-level cost estimates are order-of magnitude cost estimates made without detailed engineering data and include estimates of major cost components and quantities, typical costs from similar work, cost curves, and scale-up and scale-down factors or ratios. It is normally expected that estimates of this type would be accurate to within plus 50 percent to minus 30 percent. The actual cost will be developed as the final design is completed and a better estimate of actual work items for the selected alternative has been developed.

No long-term operations and maintenance costs were included in the cost estimate because contaminants will be removed and no cap systems, treatment systems, etc., will be required to augment the removals.

## VI. Expected Change in the Situation Should Action Be Delayed or Not Taken

As long as surface soil contamination and debris and dust in the buildings remain, there is a potential for migration of surface contaminants via surface water drainage or dust. The presence of contaminant-laden dust and residue in the buildings poses a potential hazard to people entering those buildings.

The potential for downward migration of contaminants from the old UST location at Building 1085 is dependent upon the presence and concentrations of contaminants remaining in that area. The pit area beneath Building 1084 is currently covered with a concrete slab and roof. Little, if any, migration of contaminants from that area is anticipated.

The potential for downward migration of contaminants from the old UST location at Building 1085 is dependent upon the presence and concentrations of contaminants remaining in that area. The pit area beneath Building 1084 is currently covered with a concrete slab and roof. Little, if any, migration of contaminants from that area is anticipated.

## VII. Outstanding Policy Issues

The work is being funded fully by the Defense Logistics Agency. No policy issues concerning cost sharing or EPA funding are involved for the removal action.

## VIII. Enforcement

The proposed removal action is a non-time-critical removal action voluntarily being undertaken by DLA. It is not an enforcement action; however, review and oversight of the removal action by TDEC and EPA are expected. Because it is a voluntary action, an Enforcement Addendum is not required.

## IX. Decision

This decision document represents the selected removal action for Parcels 35 and 28 and the former Defense Distribution Depot Memphis, Tennessee, developed in accordance with CERCLA as amended, and is consistent with the NCP. The decision is based on the administrative record for the site.

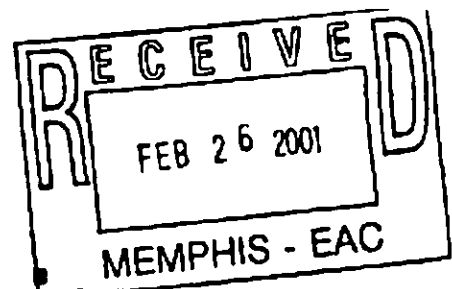
Conditions at the site meet the NCP section 300.415(b) (2) criteria for a removal action and I approve the recommended removal action.

  
\_\_\_\_\_  
J.W. KENNEY

- Captain, SC, USN

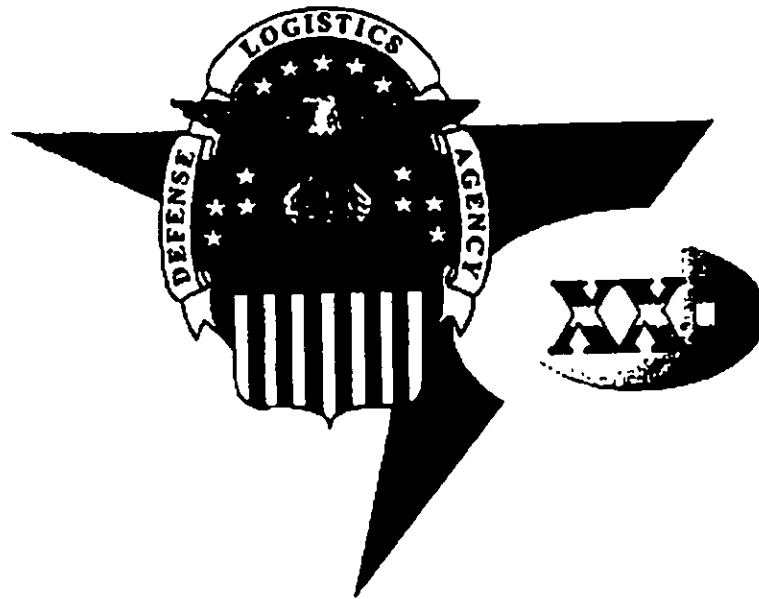
Commander

**Memphis Depot**  
Main Installation



710 313

# Record of Decision



**Memphis Depot Caretaker**  
February 2001 — Rev. 2



**CH2MHILL**



**U.S. Army Engineering  
and Support Center, Huntsville**

U.S. Army Engineering and Support Center, Huntsville  
Contract No. DACA87-94-D-0009  
Delivery Order No. 11

# 1.0 Declaration

---

## 1.1 Site Name and Location

Memphis Depot  
Main Installation, Functional Units (FUs) 1 through 7  
2163 Airways Boulevard  
Memphis, Shelby County, Tennessee  
U.S. Environmental Protection Agency (EPA) Identification Number (ID): TN4210020570

## 1.2 Statement of Basis and Purpose

This decision document presents the selected remedy for the Main Installation (MI) of the Memphis Depot, in Memphis, Tennessee. This action was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and, to the extent applicable, the National Oil and Hazardous Pollution Contingency Plan (NCP). This decision is based upon the Administrative Record for the MI, including EPA Policy, *Land Use in the CERCLA Remedy Selection Process* (OSWER Directive No. 9355.7-04). This policy provides for consideration of the likely future land use of the Memphis Depot when selecting the remedy.

The State of Tennessee Department of Environment and Conservation (TDEC) and EPA concur with the selected remedy.

## 1.3 Assessment of the Site

The response action selected in this Record of Decision (ROD) is necessary to protect human health and welfare, and the environment. The selected action will prevent imminent or substantial danger from actual or threatened releases from the MI of pollutants, contaminants, or hazardous substances.

## 1.4 Description of the Selected Remedy

The selected groundwater and surface soil remedy addresses the remediation of surface soil and groundwater contamination, which will allow the transfer or lease of the MI property for its intended land use (industrial and recreational). The selected surface soil remedy consists of land use controls for FUs 1 through 6, coupled with excavation, transport, and off-site disposal of an estimated 7,200-ft<sup>2</sup> area of surface soil in FU4. The selected groundwater remedy for FU7 is enhanced bioremediation, which includes land use controls and long-term monitoring. The selected remedy applies to the MI portion of the Memphis Depot and does not include Dunn Field (Operable Unit 1), located to the north of the MI.

The remedial investigation (RI) and feasibility study (FS) for Dunn Field are scheduled to be completed in 2001 and the final ROD in 2002.

The major components of the selected remedy include:

- Excavation, transportation, and off-site disposal at a permitted landfill of an estimated 7,200 ft<sup>2</sup> of surface soil containing lead concentrations equal to or greater than 1,536 milligrams per kilogram (mg/kg) near the southeast corner of Building 949 in FU4.
- Deed restrictions and site controls, which include the following:
  - Prevention of residential land use on the MI (except at the existing Housing Area).
  - Daycare restriction controls.
  - Production/consumptive use groundwater controls for the fluvial aquifer and for drilling into aquifers below the fluvial aquifer on the MI.
  - Elimination of casual access by adjacent off-site residents through maintenance of a boundary fence surrounding FU2.
- Enhanced bioremediation of chlorinated volatile organic compounds (CVOCs) in the most contaminated part of the groundwater plume.
- Long-term groundwater monitoring to document changes in plume concentrations and to detect potential plume migration to off-site areas or into deeper aquifers.
- 5-year reviews of the selected alternatives.

The land use controls (deed restrictions and site controls) that are included as part of the selected remedy provide additional layers of protection above the existing land use and groundwater controls as established by the: (1) City of Memphis and Shelby County zoning regulations; (2) Federal Property Management Regulations; and (3) Ground Water Quality Control Board for the City of Memphis and Shelby County.

No source materials on the MI are "principal threat wastes" as defined by EPA guidance. Surface and subsurface soils across the MI are not considered to be principal threats. No evidence of non-aqueous phase liquids (NAPL) has been discovered on the MI. Although contaminated groundwater poses a risk, it is not considered a principal threat.

## 1.5 Statutory Determinations

The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to the remedial action, is cost-effective, and utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable. The selected remedy allows the entire MI to be available for the anticipated future land use.

The selected remedy for groundwater contamination at the MI satisfies the statutory preference for treatment. The selected remedy for surface soil contamination at the MI does not satisfy the statutory preference for treatment as a principal element of the remedy. However, the remedy for surface soil was chosen for the following reasons:

- Deed restrictions and site controls can be implemented quickly.
- Deed restrictions and site controls provide additional layers of protectiveness above existing land use restrictions and controls.
- Excavation and off-site disposal provides permanent risk reduction at the MI through removal.
- The remedy will allow the property to be used for industrial and recreational land use, and does not preclude future response actions, if warranted.
- The remedy is cost-effective at achieving anticipated industrial (and recreational) land use criteria.

The remedy will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure; therefore, in accordance with Section 121(c) of CERCLA and NCP §300.430(f)(5)(iii)(c), a statutory review will be conducted within 5 years of initiation of remedial action, and every 5 years thereafter, to ensure that the remedy continues to be protective of human health and the environment.

Hazardous substances above health-based levels will remain in groundwater beneath the Memphis Depot after implementation of this remedy. Because hazardous substances are to remain, the Defense Logistics Agency (DLA), TDEC, and EPA recognize that Natural Resource Damage Assessment (NRDA) claims, in accordance with CERCLA, may be applicable. This document does not address restoration or rehabilitation of any natural resource injuries that may have occurred or whether such injuries have occurred. In the interim, neither DLA nor TDEC waives any rights or defenses each may have under CERCLA, Sect. 107(a)4(c).

## 1.6 ROD Data Certification Checklist

The following information is included in the *Decision Summary* section (Section 2) of this ROD. Additional information can be found in the Administrative Record for the MI.

- Current and reasonably anticipated future land use assumptions and current and potential future beneficial uses of groundwater used in the baseline risk assessment and ROD (page 2-15).
- Chemicals of concern (COCs) and their respective concentrations (page 2-17).
- Baseline risk represented by the COCs (page 2-21).
- Clean-up levels established for COCs and the basis for these levels (page 2-24).
- Key factor(s) that led to the selection of the remedy (page 2-40).
- Estimated capital costs, annual operation and maintenance (O&M) costs, total present worth costs, discount rate, and number of years over which the remedial cost estimates are projected (pages 2-46 to 2-47).


710 323

- Potential land and groundwater use that will be available at the MI as a result of the selected remedy (page 2-48).


There are no source materials constituting principal threats on the MI; therefore, this topic will not be addressed.

## 1.7 Authorizing Signatures


For this document, DLA is the prime signatory while EPA and TDEC concur with the findings of the ROD.

  
C.R. McKelvey  
Captain, SC, USN  
Commander

22 Feb 2001  
Date

  
Richard D. Green, Director  
Waste Management Division  
U.S. Environmental Protection Agency,  
Region 4

6 SEP 01  
Date

  
James W. Haynes, Director  
Division of Superfund  
Tennessee Department of Environment  
and Conservation

March 1, 2001  
Date



**FINDING OF SUITABILITY (FOSL)  
TO LEASE**

**DEFENSE DISTRIBUTION DEPOT MEMPHIS**

NOVEMBER 1996  
REVISED APRIL 1997

ENVIRONMENTAL PROTECTION AND SAFETY OFFICE  
DEFENSE DISTRIBUTION DEPOT MEMPHIS

**FINDING OF SUITABILITY TO LEASE  
(FOSL)  
DEFENSE DISTRIBUTION DEPOT MEMPHIS**

**APRIL 1997**

**1. INTRODUCTION**

In my capacity as Deputy Assistant Secretary of the Army for Environment, Safety, and Occupational Health, I have determined that certain parcels consisting of 48 buildings at Defense Distribution Depot Memphis, Tennessee (DDMT) are suitable for lease to the Memphis Redevelopment Agency (MDRA). This property is suitable for lease for like use without posing a threat to human health and the environment. The purpose of this Finding Of Suitability To Lease (FOSL) is to document environmentally-related findings for the proposed lease property and present use restrictions as specified in the attached environmental protection provisions.

**2. PROPERTY DESCRIPTION**

A site map of the proposed lease buildings is at enclosure 1. Information regarding each building addressed in this FOSL is included in Table 1, enclosure 2.

**3. REGULATORY COORDINATION**

The Tennessee Department of Environment and Conservation (TDEC) and the U.S. Environmental Protection Agency (EPA) Region IV were notified of the initiation of the FOSL. Regulatory comments received during the FOSL development were reviewed and incorporated into the document at enclosure 3. All comments received from TDEC and the EPA during review were resolved and incorporated into the FOSL.

**4. EXISTING ORDERS/AGREEMENTS**

On October 14, 1992, the EPA placed DDMT on the National Priority List (NPL) for environmental restoration. DDMT has since entered into a Federal Facilities Agreement (FFA) with the TDEC and the EPA. The FFA established regulatory coordination procedures and a schedule for environmental investigation and restoration activities.

**5. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE**

The environmental impacts associated with leasing the subject facilities have been adequately analyzed in accordance with the National Environmental Policy Act (NEPA). The results of this analysis have been documented in the Final Environmental Assessment for Master Interim Lease, Defense Distribution Depot Memphis, Tennessee, dated September 1996.

The proposed use of this property is consistent with the Defense Distribution Depot Memphis Reuse Plan. The environmental effects of the reuse activities anticipated under the proposed lease were determined to not be significant. The proposed lease will not have an adverse effect on human health and the environment.

## 6. ENVIRONMENTAL BASELINE SURVEY FINDINGS

A determination of the environmental condition of the facilities has been made in the form of a Community Environmental Response Facilitation Act (CERFA) evaluation, and Environmental Baseline Survey (EBS), dated September 1996. The information provided is a result of a complete search of agency files during the development of the EBS. The EBS documents the environmental condition of the property being offered for lease with regard to the storage, release, or disposal of hazardous substances and petroleum products.

### 6.1 Environmental Condition of Property Categories

The property addressed by this FOSL, is classified as Department of Defense (DoD) Environmental Condition of Property (ECP) Categories 1, 2, 3, and 4. The facilities are listed according to the appropriate ECP Categories.

Category 1<sup>1</sup>: Areas where storage, release, or disposal of hazardous substances or petroleum has occurred (including no migration of these substances from adjacent areas).

Category 2<sup>1</sup>: Areas where only storage of petroleum products has occurred, but no release, disposal, or migration has occurred.

Category 3: Areas where release, disposal, and/or migration of hazardous substances has occurred; and at concentrations that do not require a removal or remedial response.

Category 4: Areas where release disposal and/or migration of hazardous substances has occurred; and all removal or remedial actions to protect human health and the environment have been taken.

The EBS determined that the following 38 facilities are considered to be ECP Category 1: 1, 2, 7, 8, 9, 15, 22, 23, 24, 25, 129, 139, 144, 145, 155, 176, 178, 179, 181, 183, 184, 193, 195, 196, 198, 252, 270, 271, 360, 459, 727, 754, 755, 756, 787, 795, T860, S995.

### 6.2 Hazardous Substances

The EBS determined that 11 of the buildings being offered for lease contain areas considered as ECP Categories 2, 3, and 4. There is evidence that hazardous substances or petroleum products were stored and released at 12 areas within or outside buildings: 210, 470, 489, 490, 560, 670, 685, 689, 690, 753, and 756. Releases were the result of spills inside the buildings, except building 756 which had a fuel tank outside. The releases were remediated in accordance with federal, state, and local regulations. Although hazardous substances were stored or released in the subject facilities, these facilities can be leased without risk to human health or the environment and without interference to the environmental restoration process. Notification of hazardous substance and petroleum product storage, release, or disposal on the property shall be provided in the lease documents as required by DoD FOSL Guidance, and is at Table 2, enclosure 4.

<sup>1</sup> Changes in the FY97 Appropriations Act have since changed the definitions of Categories 1 and 2 to allow the inclusion of former hazardous substance and petroleum product storage areas

### 6.3 Asbestos

Asbestos surveys indicate asbestos containing materials are present in all of the buildings proposed for lease with the exception of Buildings 24, 25, 193, 360, and 560. The buildings meet all local, state, and federal regulations for asbestos and do not pose a threat to human health or the environment. The lease will include the asbestos warning and covenant included in the Environmental Protection Provisions of this FOSL.

### 6.4 Lead-Based Paint (LBP)

Based on their age (construction prior to 1978), all of the buildings proposed for lease are assumed to contain lead-based paint with the exception of Buildings 360 and 560. The lease will include the lead-based paint warning and covenant included in the Environmental Protection Provisions of this FOSL.


### 6.5 Unexploded Ordnance

None of the buildings or surrounding land proposed for lease are known to have unexploded ordnance present.

## 7. FINDING OF SUITABILITY TO LEASE

On the basis of the above results from the site-specific EBS and subsequent investigations, certain terms, conditions, reservations, restrictions, and notifications are required for the proposed lease. Environmental Protection Provisions are at enclosure 5 and will be included in all lease documents. The subject property may be used by the Lessee pursuant to the terms and conditions specified in the lease, including the use restrictions detailed in the enclosed Environmental Protection Provisions, without posing a threat to human health and the environment or interference with environmental remediation efforts. Notifications of hazardous substance storage, release, and disposal on the property shall be provided in the lease documents, as required under DoD FOSL Guidance.

Based on the information detailed in the EBS and references cited therein, I have concluded that all Department of Defense requirements to reach a Finding of Suitability to Lease have been fully met for the subject properties.

  
 Raymond J. Fatz  
 Deputy Assistant Secretary of the Army  
 (Environment, Safety, and Occupational Health)  
 OASA(I,L&E)

4 Enclosures

TABLE I

Gate 1	Sentry Station Gate #1	1	Sentry Post	Sentry Post	1959	280
Gate 2	Sentry Station Gate #2	1	Sentry Post	Sentry Post	1958	280
Gate 7	Sentry Station Gate #7	23	Sentry Post	Sentry Post	Unknown	67
Gate 8	Sentry Station Gate #8	23	Sentry Post	Sentry Post	1969	675
Gate 9	Sentry Station Gate #9	29	Sentry Post	Sentry Post	1946	420
Gate 15	Sentry Station Gate #15	15	Sentry Post	Sentry Post	1979	196
Gate 22	Sentry Station Gate #22	14	Sentry Post	Sentry Post	1942	67
Gate 23	Sentry Station Gate #23	13	Sentry Post	Sentry Post	1942	67
Gate 23	Sentry Station Gate #23	13	Sentry Post	Sentry Post	1961	100
Gate 24	Sentry Station Gate #24	13	Sentry Post	Sentry Post	1961	100
Gate 25	Sentry Station Gate #25	13	Sentry Post	Sentry Post	1961	100
Building 129	Waiting Shelter	1	Shelter	Shelter	1980	75
Building 139	Waiting Shelter	1	Shelter	Shelter	1959	144
Building 144	Depot Headquarters Building	1	Administration	Administration	1942	13500
Building S145	Security Building	1	Pass and Identification	Security	1943	860
Building 155	Waiting Shelter	1	Shelter	Shelter	1960	144
Building 176	Military Family Housing (MFH)	2	Residential	Residential	1948	4787
Building S178	Detached Garage-Family Housing	2	Automobile parking, maintenance	Automobile parking, maintenance	1948	1440
Building 179	Military Family Housing (MFH)	2	Residential	Residential	1948	4835
Building 181	Military Family Housing (MFH)	2	Residential	Residential	1948	4835
Building S183	Detached Garage-Family Housing	2	Automobile parking, maintenance	Automobile parking, maintenance	1948	1440
Building 184	Military Family Housing (MFH)	2	Residential	Residential	1948	4739
Building 193	Outdoor Swimming Pool	3	Recreation	Recreation	1948	426
Building S195	Community Club	3	Recreation	Recreation	1949	4254
Building 196	MWR Office/Public Toilet	3	Recreation	Recreation	1952	896
Building S198	Equipment Shed	3	Dry goods	Dry goods	1959	323
Building 210	Admin/Computer Center - General Purpose Warehouse	13	Offices, equipment storage	Offices, storage, small photo lab	1942	240000
Building 252	Physical Fitness Center	4	Recreation	Unknown	1942	8455
Building 270	Facility Installation Services	4	Administration	Maintenance shop	1945	14400
Building S271	Engineer Admin. Building (USACE)	4	Administration	Former Golf Course Club House	1958	1436
Building 360	General Purpose Warehouse	34	Unused	None (new building)	1996	174665
Building P459	Training Facility	17	Classrooms	Parking lot	1990	4,000
Building 470	General Purpose Warehouse	20	Equipment/clothing storage	Equipment/clothing storage	1954	218000
Building 489	General Purpose Warehouse	20	Equipment/clothing storage	Equipment/clothing storage	1954	218000
Building 490	General Purpose Warehouse	21	Central receiving facility	Microfiche developing, historic dipping of machine parts as preservation	1954	218000
Building 560	General Purpose Warehouse	18	Medical and general supplies	Unknown	1990	174665
Building 670	General Purpose Warehouse	20	Equipment/clothing storage	Equipment/clothing storage	1953	218000
Building 685	General Purpose Warehouse	21	Vehicle maintenance supplies	Unknown	1985	32000
Building 689	General Purpose Warehouse	21	Material handling equipment and materials awaiting shipment	Hazardous waste, Safety Kleen, unknown wastes	1953	228000
Building 690	General Purpose Warehouse	21	Material handling equipment and materials awaiting shipment	Unknown wastes, vehicle maintenance supplies	1953	218000
Building 727	Sentry Station	33	Vacant	None	1994	280
Building 733	Pump Station	33	Fire extinguisher	Pump station	1956	513

			refilling				
Building 754	Water Storage Tank	33	Water tank	Water tank	Unknown	1963	
Building 755	Sewage Pump	33	Sewage pump house	Sewage pump house	1953	237	
Building 756	Water Pump	33	Water distribution	Water distribution	Unknown	2400	
Building 787	General Purpose Warehouse	23	Recycling warehouse	Steel processing	1988	5038	
Building 795	Waiting Shelter	23	Shelter	Shelter	1974	240	
Building 7860	Admin. General Purpose	33	Administration	Administration	1944	800	
Building 3995	Transportation - Steel Building	23	Steel storage and handling	Unknown	Unknown	8000	

FINDING OF SUITABILITY TO LEASE  
(FOSL)

*Parcel 5.1, Parcel 5.2, Parcel 30.1*

Defense Distribution Depot Memphis, Tennessee

*(FOSL Number 2)*

November 5, 1997

## 1. PURPOSE

The purpose of this Finding Of Suitability To Lease (FOSL) is to document the environmental suitability of certain parcels of property at Defense Distribution Depot Memphis, Tennessee for leasing to the Depot Redevelopment Corporation consistent with the Department of Defense (DOD) and Army policy. In addition, this FOSL identifies use restrictions as specified in the text and attached Environmental Protection Provisions (enclosure 4) necessary to protect human health or the environment and to prevent interference with any existing or planned environmental restoration activities. Uses of the property will be restricted to light industry, storage, sorting operations, receiving, packaging and shipping, support activities, mechanical shop to support material handling equipment, recreation, welfare activities, training, education, and general office.

## 2. PROPERTY DESCRIPTION

The proposed property to be leased consists of 3.39 acres that include three buildings. The three buildings are identified as Building 274 ("J" Street Cafeteria), Building T272, and Building 925. A site map of the property proposed to be leased can be found at enclosure 1.

## 3. ENVIRONMENTAL CONDITION OF THE PROPERTY

A determination of the environmental condition of the facilities has been made based on the Community Environmental Response Facilitation Act (CERFA) Letter Report, dated December 5, 1996 and an Environmental Baseline Survey (EBS), dated November 6, 1996. The information provided is a result of a complete search of agency files during the development of the CERFA Letter Report and EBS. The following documents also provided information on environmental conditions of the property: Final Remedial Investigation Report (Law Environmental, August 1990), Final Environmental Assessment for Master Interim Lease (Tetra Tech, September 1996), Remedial Investigation Soil Sampling Letter Report (CH2M Hill, May 1997), OU - 3 and OU - 4 Field Sampling Plans (CH2M Hill, September 1995), RCRA Facilities Assessment (A.T. Kearney, Inc., January 1990), and the Installation Assessment (USAEHA, March 1981).

### 3.1 Environmental Condition of Property Categories

The properties that are being considered for lease are classified as (DOD) Environmental Condition of Property (ECP) Categories 3, 4, and 6. The ECP Categories for the specific buildings and/or parcels are as follows:

ECP Category 3:	Parcel 5.1 to include Building T272
ECP Category 4:	Parcel 30.1 that is Building 925
ECP Category 6:	Parcel 5.2 to include Building 274

A summary of the ECP Categories for specific buildings or parcels is provided in



Table 1 – Description of Property (enclosure 2).

### 3.2 Storage, Release, Treatment or Disposal of Hazardous Substances

It was determined that no hazardous substances were stored, released, or disposed in excess of the 40 CFR Part 373 reportable quantities in Building T272. Accordingly, there is no need for any notification of hazardous substance storage, release, treatment, or disposal for this building.

It was determined that even though no hazardous substances were released or disposed in Building 274 in excess of the 40 CFR Part 373 reportable quantities, there was a possible previous spill involved with this area. Building 274 was constructed on a former transformer storage area. Prior to construction of the cafeteria, a spill probably occurred in this area as evidenced by the information obtained from the CH2M Hill sampling conducted in 1997. One out of five samples taken indicate a level of PCB's in the grassy area immediately surrounding the cafeteria slightly above the Residential Risk Based Concentration (RBC) for soil ingestion (1.39 mg/kg vs 0.83 mg/kg). DDE, DDT, DDD, and Dieldrin levels found in the five samples were all below the RBC for soil ingestion.

It was determined that even though no hazardous substances were released or disposed in Building 925 in excess of the 40 CFR Part 373 reportable quantities, there was a previous spill involved with this area. The release of hazardous substances was remediated at the time of the release as an emergency response. Building 925 was previously known as X - 25, an open storage area where flammable materials and petroleum products were stored in an earthen and then concrete bermed area. At one time the concrete bermed area was covered with a fabric tension structure that was called a spandome. This building was labeled Building T925. On January 19, 1988, during a period of inclement weather (wind/rain), the spandome collapsed resulting in a release of hazardous substances in the bermed area. In order to safely remove the collapsed laminate roof and associated steel girders, the bermed area needed to be emptied. Two tanker trucks with pumps removed approximately 36,000 gallons of product and rain water that had accumulated. The following is a list of the impacted products and the 40 CFR Part 373 reportable quantity associated with them: Toluene (1,000 pounds), Xylene (100 pounds), Methyl Ethyl Ketone (5,000 pounds), Methyl IsoButyl Ketone (5,000 pounds), Acetone (5,000 pounds), and Isopropyl Alcohol (5,000 pounds). It was later determined that approximately 325 gallons of product had been spilled although the exact proportions are now unknown. Therefore, a worst case scenario would assume that it was possible for Xylene to exceed the 40 CFR Part 373 reportable quantity of 100 pounds (13.92 gallons) and/or Toluene to exceed the 40 CFR Part 373 reportable quantity of 1,000 pounds (137 gallons).

Temporary Building 925 was replaced in 1993/1994 with Building 925. While Building 925 stored hazardous materials (acetone, methyl ethyl ketone, methanol, ethanol) and petroleum products, it was determined that there was no evidence of any release or disposal in excess of 40 CFR Part 373 reportable quantities. A summary of the buildings in

which hazardous substances were stored, released, or disposed in excess of 40 CFR Part 373 reportable quantities is provided in Table 2 - Notification of Hazardous Substance and Petroleum Products, Storage, Release, or Disposal (enclosure 3).

### **3.3 Petroleum and Petroleum Products**

#### **3.3.1 Storage, Release, or Disposal of Petroleum or Petroleum Products**

There is no evidence that any petroleum or petroleum products were stored, released, or disposed at the properties listed in this FOSL except for the area involving Building 925. Building 925 was built on the former earthen and then concrete bermed area of X - 25 and Building T925. There is no evidence that any petroleum or petroleum products were released or disposed in this area. The January 19, 1988 spill did not contain petroleum products. A summary of the building or area in which petroleum or petroleum products were stored, released, or disposed is provided in Table 2 - Notification of Hazardous Substances and Petroleum Products Storage, Release, or Disposal (enclosure 3).

#### **3.3.2 Underground and Above-Ground Storage Tanks (UST/AST)**

The EBS and visual site inspection (VSI) reported or identified no underground storage tanks and no above-ground storage tanks on the property listed in this FOSL. There is no evidence of petroleum contamination at these sites.

### **3.4 Polychlorinated Biphenyls (PCB) Equipment**

There are no PCB containing transformers or other PCB containing equipment located on the property listed in this FOSL. However, Building 274 was built on the location of a former storage area for electrical transformers that contained PCB's. During the Installation Assessment conducted in March 1981, two transformers were observed in the storage area. Testing of the fluid in the transformers indicated concentrations of less than 50 parts per million of PCBs. The site's date of initial operations is unknown but assumed to be prior to 1981. Activities ceased in the mid-1980's because of the construction of the new DDMT cafeteria.

Surface soil sampling in the grassy areas surrounding Building 274 revealed one out of five samples indicating a slightly elevated level of PCB (Aroclor - 1260) above the residential risk-based concentration for soil ingestion (1.39 mg/kg vs 0.83 mg/kg). There is no surface exposure. This site is a candidate for an early removal action or Baseline Risk Assessment to support a Record of Decision for No Further Action. A restriction associated with this Building will be that no digging (soil disturbance) will be allowed in any of the grassy areas surrounding the "J" Street Cafeteria without the express permission of the Government.

The lease will include the PCB notification provision included in the Environmental Protection Provisions (enclosure 4).

### 3.5 Asbestos

The EBS and the Asbestos Identification Survey (Pickering, December 1993 and January 1994) indicate asbestos containing materials (ACM) are present in Building 274. The tile mastic contained 3% to 5% chrysotile. The ACM does not currently pose a threat to human health or the environment because there is no friable asbestos. The lease will include the asbestos warning and covenant included in the Environmental Protection Provisions (enclosure 4).

### 3.6 Lead-Based Paint (LBP)

Based on the age of Buildings 925 and 274 (constructed after 1978), they are presumed to contain no lead-based paint. The construction date of Building T272 (lumber storage shed) was 1942, and therefore it is presumed to contain lead-based paint.

No residential use is to be permitted under the terms of the lease.

The lease will include the lead-based paint warning and covenant included in the Environmental Protection Provisions (enclosure 4).

### 3.7 Radiological Sources or Contamination

There is no evidence that the Army or DDMT used or stored radioactive sources on the property listed in this FOSL.

### 3.8 Radon

In keeping with DOD policy to not perform radon assessment and mitigation prior to transfer of BRAC property unless otherwise required by applicable law, there were no radon surveys conducted in the buildings listed in this FOSL. Radon surveys were conducted in accordance with regulations in the following residential structures at DDMT: Buildings 176, 179, 181, and 184. Radon was not detected above the EPA residential action level of 4 picocuries per liter (pCi/L) in these buildings.

### 3.9 Unexploded Ordnance

Based on a review of existing records and available information, none of the buildings or surrounding land proposed for lease are known to contain unexploded ordnance.

### 3.10 Other Hazardous Conditions

There are no other known hazardous conditions that present a threat to human health or the environment

#### **4. REMEDIATION**

In October 1992, the U.S. Environmental Protection Agency (EPA) placed DDMT on the National Priorities List (NPL) for environmental restoration. DDMT has since entered into a Federal Facilities Agreement (FFA) with the Tennessee Department of Environment and Conservation (TDEC) and the EPA. Environmental contamination on the property does not present a hazard to leasing the property. In addition, environmental conditions on adjacent property do not present a hazard to the leasing of the property. Regulators have concurred with DDMT that the property does not pose risks above levels deemed protective provided that the property is used for the proposed purpose. The lease will include a provision reserving the Army's right to conduct remediation activities in the Environmental Protection Provisions (enclosure 4).

#### **5. REGULATORY COORDINATION**

TDEC and EPA Region 4 were notified of the initiation of the FOSL. Regulatory comments received during the FOSL development and the BRAC Cleanup Team meetings were reviewed and incorporated as appropriate. All comments received from TDEC and the EPA during the review process were resolved and incorporated into the FOSL. No written comments were received from the public.

#### **6. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE AND CONSISTENCY WITH LOCAL REUSE PLAN**

The environmental impacts associated with the proposed lease of the property have been adequately analyzed in accordance with the National Environmental Policy Act (NEPA). The results of this analysis have been documented in the Final Environmental Assessment for Master Interim Lease, Defense Distribution Depot Memphis, Tennessee, dated September 1996. The environmental effects of the activities anticipated under the proposed lease were determined not to be significant.

The proposed lease addressed by this FOSL is consistent with the reuse alternatives stated in the above referenced NEPA document and with the intended reuse of the property set forth in the Memphis Depot Redevelopment Plan dated May 1997.

#### **7. ENVIRONMENTAL PROTECTION PROVISIONS**

On the basis of the above results from the site-specific EBS, any subsequent or additional investigations, surveys, or studies identified in the FOSL, and in consideration of the intended use of the property, certain terms, conditions, reservations, and restrictions are required for the proposed lease. The Environmental Protection Provisions are at enclosure 4 and will be included in the proposed lease and all subleases.

APR-23-1988 13:49

P.02


are required for the proposed lease. The Environmental Protection Provisions are at enclosure 4 and will be included in the proposed lease and all subleases.

#### 8. FINDING OF SUITABILITY TO LEASE

Based on the information detailed in the EBS, the references cited therein, and this FINDING OF SUITABILITY TO LEASE, I have concluded that all Department of Defense requirements to reach a FINDING OF SUITABILITY TO LEASE have been fully met for the subject property. The subject property is suitable to lease by the Lessee for the intended purpose, subject to the terms, conditions, reservations, and restrictions set forth in the Environmental Protection Provisions attached to this FOSL, without posing an unacceptable risk to human health or the environment and without interference with the environmental remediation process at Defense Distribution Depot Memphis, Tennessee, and the uses contemplated for the lease are consistent with protection of human health and the environment.

As required by CERCLA section 120(h)(3)(B), I have determined that the Environmental Protection Provisions of the lease and the terms of the lease provide adequate assurances that the United States will take any additional remedial action found to be necessary to protect human health and the environment with respect to any hazardous substances remaining on the property on the date of the lease which has not been taken on the date of the lease.

Notification of hazardous substance or petroleum product storage, release, treatment, or disposal on the property, Table 2 - Notification of Hazardous Substance or Petroleum Product Storage, Release, Treatment or Disposal (enclosure 3) shall be provided in the lease documents, as required under the DOD FOSL Guidance.

  
Earl C. Richardson  
Colonel, GS  
Deputy Chief of Staff  
for Engineering, Housing,  
Environmental, and Installation  
Logistics

#### 4 Enclosures

- Encl 1 Site Map of Proposed Lease Area
- Encl 2 Table 1 - Description of Property
- Encl 3 Table 2 - Notification of Hazardous Substance or Petroleum  
Product Storage, Release, or Disposal
- Encl 4 Environmental Protection Provisions

**FINDING OF SUITABILITY TO LEASE**

**(FOSL)**

**Parcel 4.12 and Parcel 27.2**

**Defense Distribution Depot Memphis, Tennessee**

**(FOSL Number 3)**

**May 20, 1998**

710 338

## 1. PURPOSE

The purpose of this Finding Of Suitability To Lease (FOSL) is to document the environmental suitability of certain parcels of property at Defense Distribution Depot Memphis, Tennessee (DDMT) for leasing to the Depot Redevelopment Corporation (DRC) consistent with the Department of Defense (DOD) and Army policy. The expected reuse of the properties are as follows: Building 251 - Portion of a Police Department Precinct; Building 972 - Wood Pallet Production. Expected reuse includes light industry, storage or general office use. In addition, this FOSL identifies use restrictions as specified in the text and attached Environmental Protection Provisions (Enclosure 5) necessary to protect human health or the environment and to prevent interference with any existing or planned environmental restoration activities.

## 2. PROPERTY DESCRIPTION

The proposed property to be leased consists of 6.52 acres that include two BRAC parcels. The two parcels are identified as 4.12 (Building 251) and 27.2 (Building 972). A site map of the property proposed to be leased can be found at Enclosure 1.

## 3. ENVIRONMENTAL CONDITION OF THE PROPERTY

A determination of the environmental condition of the facilities has been made based on the Community Environmental Response Facilitation Act (CERFA) Letter Report, dated December 5, 1996 and an Environmental Baseline Survey (EBS), dated November 6, 1996. The information provided is a result of a complete search of agency files during the development of the CERFA Letter Report and EBS. The following documents also provided information on environmental conditions of the property: Draft Final BRAC Cleanup Plan Version 2 (DDSP-FB, November 1997), Asbestos Reinspection (DDC-WP, October 1996), Final Environmental Assessment for Master Interim Lease (Tetra Tech, September 1996), Remedial Investigation Soil Sampling Letter Report (CH2M Hill, May 1997), OU - 2 and OU - 3 Field Sampling Plans (CH2M Hill, September 1995), Asbestos Identification Survey (Pickering, December 1993 and January 1994), RCRA Facilities Assessment (A.T. Kearney, Inc., January 1990), Final Remedial Investigation Report (Law Environmental, August 1990) and the Installation Assessment (USAEHA, March 1981).

### 3.1 Environmental Condition of Property Categories

The properties that are being considered for lease are classified as DOD Environmental Condition of Property (ECP) Category 4. The ECP category for the specific buildings and/or parcels are as follows:

ECP Category 4: Parcel 4.12 Building 251 only

ECP Category 4: Parcel 27.2 Building 972 only

A summary of the ECP Categories for the specific building is provided in Table 1 - Identification of Property and Environmental Conditions (Enclosure 2).

### 3.2 Storage, Release, Treatment or Disposal of Hazardous Substances

It was determined that there is no evidence that hazardous substances were stored or disposed in Building 251. However, a one square foot floor drain was sampled and found to contain sediment with levels of concern for Lead and Poly Aromatic Hydrocarbons. In accordance with direction from the BCT, the sediment was removed from the floor drain. The floor drain was then filled with concrete.

Building 972 stored flammables, solvents, and waste oils. Known releases in this building are addressed in paragraph 3.3.1, Storage, Release, or Disposal of Petroleum or Petroleum Products.

A summary of the buildings in which hazardous substances were stored, released, or disposed in excess of 40 CFR Part 373 reportable quantities is provided in Table 2 - Notification of Hazardous Substance Storage, Release, or Disposal (Enclosure 3).

### 3.3 Petroleum and Petroleum Products

#### 3.3.1 Storage, Release, or Disposal of Petroleum or Petroleum Products

It was determined that petroleum products were used in Building 251. Building 251 housed a small engine/equipment shop area and a mechanic's work pit that contained a small sump. There is no evidence of any petroleum products being released or disposed in this area. The mechanic's work pit and sump were filled with concrete prior to 1976.

It was determined that petroleum products were stored in Building 972 and releases occurred. Operational spills were cleaned when they occurred. In addition, oil stained areas were observed during a visual inspection to facilitate the Screening Sites Field Sampling Plan (CH2M Hill 1995). Building 972 has been retrofitted with the floor being cleaned and sealed with new flooring material.

A summary of the buildings or areas in which petroleum or petroleum products were stored, released, or disposed is provided in Table 3 - Notification of Petroleum Products Storage, Release, or Disposal (Enclosure 4).

#### 3.3.2 Underground and Above-Ground Storage Tanks (UST/AST)

There was no evidence that any petroleum or petroleum products were stored in USTs/ASTs on the properties listed in this FOGL.



### 3.4 Polychlorinated Biphenyls (PCB) Equipment

There are no PCB containing transformers or other PCB containing equipment, except hermetically sealed fluorescent light bulb ballasts that may contain PCBs, located on the property listed in this FOSL. There is no evidence these ballasts have leaked. There is no evidence of unremediated releases of PCB equipment. The lease will include the PCB notification provision included in the Environmental Protection Provisions (Enclosure 5).

### 3.5 Asbestos

The EBS and the Asbestos Identification Survey (Pickering, December 1993 and January 1994) indicate asbestos containing materials (ACM) are present in Buildings 251 and 972.

**Asbestos findings in Building 251 were as follows:**

**Boiler/flue Insulation:** Material contained 35% amosite and 10% to 20% chrysotile. Material was in good condition with minimal damage due to natural deterioration and maintenance activity. Boiler/flue insulation removed in 1995.

**Thermal System Pipe Insulation:** Contained 35% to 40% amosite and 8% to 25% chrysotile. Material was in good condition with minimal damage due to natural deterioration and maintenance activity. Insulation removed in 1995.

**Boiler Door Insulation:** Contained 35% to 55% chrysotile. Material was in good condition with minor natural deterioration. Insulation removed in 1995.

**Exterior Window Putty:** Contained 4% to 7% chrysotile. Material was in fair to poor condition due to physical damage and natural deterioration.

**9 X 9 Floor Tile:** Tile and mastic in the restrooms contained 20% to 25% chrysotile. Material was non-friable and in good condition.

**Roof Flashing:** Material used to seal the roof perimeter and all roof penetrations contained 5% chrysotile. Material was non-friable and in good condition.

**Asbestos findings in Building 972 were as follows:**

**12 X 12/9 X 9 Floor Tile:** Two layers of asbestos containing floor tile installed in the office and break room contained 10% to 25% chrysotile. Material was in good condition.

**9 X 9 Beige Vinyl Floor Tile:** Vinyl floor tile installed in the office area of Bay 5 contained 30% chrysotile. Material was non-friable and in good condition.

**9 X 9 Floor Tile:** Vinyl floor tile and mastic installed in the office area of Bay 5 contained 25% chrysotile. Material was non-friable and in good condition.

**Cement Asbestos Products:** Cement asbestos board installed on the ceiling and wall area of the shop in Bay 6 contained 25% chrysotile. Material was in fair condition with moderate damage due to maintenance activity. Boards removed in 1998.

The ACM does not currently pose a threat to human health or the environment because there is no friable asbestos. The lease will include the asbestos warning and covenant included in the Environmental Protection Provisions (Enclosure 5).

### **3.6 Lead-Based Paint (LBP)**

Based on the age of Buildings 972 and 251 (constructed prior to 1978), they are presumed to contain lead-based paint. No residential use is to be permitted under the terms of the lease. The lease shall include the lead-based paint warning and covenant included in the Environmental Protection Provisions (Enclosure 5).

### **3.7 Radiological Sources or Contamination**

There is no evidence that the Army or DDMT used or stored radioactive sources on the property listed in this FOSL.

### **3.8 Radon**

In keeping with DOD policy to not perform radon assessment and mitigation prior to transfer of BRAC property, there were no radon surveys conducted in the buildings in this FOSL. Radon surveys were conducted in accordance with regulations in the following residential structures at DDMT: Buildings 176, 179, 181, and 184. Radon was not detected above the Environmental Protection Agency (EPA) residential action level of 4 picocuries per liter (pCi/L) in these buildings.

### **3.9 Unexploded Ordnance**

Based on a review of existing records and available information, none of the buildings or surrounding land proposed for lease are known to contain unexploded ordnance.

### **3.10 Other Hazardous Conditions**

There are no other known hazardous conditions that present a threat to human health or the environment.

710 342

#### 4. REMEDIATION

In October 1992, the U.S. EPA placed DDMT on the National Priorities List (NPL) for environmental restoration. DDMT has since entered into a Federal Facilities Agreement (FFA) with the Tennessee Department of Environment and Conservation (TDEC) and the EPA. Environmental contamination on the property does not present a hazard to leasing the property. In addition, environmental conditions on adjacent property do not present a hazard to the leasing of the property. Regulators have concurred with DDMT that the property does not pose risks above levels deemed protective provided that the property is used for the proposed purpose. No remediation is currently underway or planned. The lease will include a provision reserving the Army's right to conduct remediation activities in the Environmental Protection Provisions (Enclosure 5).

#### 5. REGULATORY COORDINATION

TDEC and EPA Region 4 were notified of the initiation of this FOSL. Regulatory comments received during the FOSL development and the BRAC Cleanup Team meetings were reviewed and incorporated as appropriate. The FOSL was discussed with public at the January 22, 1998 Restoration Advisory Board meeting. No verbal or written comments were received from the public.

#### 6. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE AND CONSISTENCY WITH LOCAL REUSE PLAN

The environmental impacts associated with the proposed lease of the property have been adequately analyzed in accordance with the National Environmental Policy Act (NEPA). The results of this analysis have been documented in the Final Environmental Assessment for Master Interim Lease, Defense Distribution Depot Memphis, Tennessee dated September 1996. The environmental effects of the activities anticipated under the proposed lease were determined not to be significant.

The proposed lease addressed by this FOSL is consistent with the reuse alternatives stated in the above referenced NEPA document and with the intended reuse of the property set forth in the Memphis Depot Redevelopment Plan dated May 1997.

#### 7. ENVIRONMENTAL PROTECTION PROVISIONS

On the basis of the above results from the site-specific EBS, any subsequent or additional investigations, surveys, or studies identified in the FOSL, and in consideration of the intended use of the property, certain terms, conditions, reservations, and restrictions are required for the proposed lease. The Environmental Protection Provisions are at Enclosure 5 and will be included in the proposed lease and all subleases.

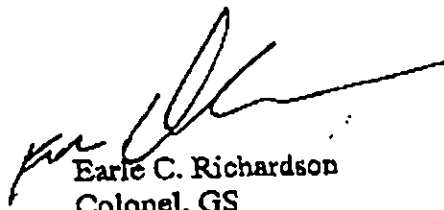
710 343

## 8. FINDING OF SUITABILITY TO LEASE

Based on the information detailed in the EBS, the references cited therein, and this FINDING OF SUITABILITY TO LEASE, I have concluded that all Department of Defense requirements to reach a FINDING OF SUITABILITY TO LEASE have been fully met for the subject properties. The subject property is suitable to lease by the Lessee for the intended purpose, subject to the terms, conditions, reservations, and restrictions set forth in the Environmental Protection Provision attached to this FOSL, without posing an unreasonable risk to human health or the environment and without interference with the environmental remediation process at Defense Distribution Depot Memphis, Tennessee, and the uses contemplated for the lease are consistent with protection of human health and the environment.

As required by CERCLA section 120(h)(3)(B), I have determined that the Environmental Protection Provisions of the lease and the terms of the lease provide adequate assurances that the United States will take any additional remedial action found to be necessary to protect human health and the environment with respect to any hazardous substances remaining on the property on the date of the lease which has not been taken on the date of the lease.

Notification of hazardous substance or petroleum product storage, release, treatment, or disposal on the property, Table 2 - Notification of Hazardous Substance Storage, Release, Treatment or Disposal (Enclosure 3) and Table 3 - Notification of Petroleum Products Storage, Release or Disposal (Enclosure 4) shall be provided in the lease documents, as required under the DOD FOSL Guidance.



Earle C. Richardson  
Colonel, GS  
Deputy Chief of Staff for Engineering, Housing,  
Environmental, and Installation Logistics

### 7 Enclosures

- Encl 1 Site Map of Proposed Lease Area
- Encl 2 Table 1 - Identification of Property and Environmental Condition
- Encl 3 Table 2 - Notification of Hazardous Substance Storage, Release, or Disposal
- Encl 4 Table 3 - Notification of Petroleum Product Storage, Release or Disposal
- Encl 5 Environmental Protection Provisions
- Encl 6 Regulatory/Public Comments and Responses
- Encl 7 References

FINDING OF SUITABILITY TO LEASE

(FOSL)

*Parcel 4.4, Parcel 4.5, Parcel 4.6, Parcel 4.7,  
Parcel 4.8, Parcel 4.9, Parcel 4.10, Parcel 4.11, Parcel 4.13*

Defense Distribution Depot Memphis, Tennessee

(FOSL number 4)

July 8, 1998

## 1. PURPOSE

The purpose of this Finding Of Suitability To Lease (FOSL) is to document the environmental suitability of Parcels 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.1 and 4.13 at the Defense Distribution Depot Memphis, Tennessee (DDMT) for leasing to the Depot Redevelopment Corporation (DRC) for light industry, storage or general office use consistent with Department of Defense (DOD) and Army policy. This FOSL has been developed in accordance with the DRC's Reuse Plan. In addition, the FOSL identifies use restrictions as specified in the attached Environmental Protection Provisions (Enclosure 5) necessary to protect human health or the environment and to prevent interference with any existing or planned environmental restoration activities.

## 2. PROPERTY DESCRIPTION

The proposed property to be leased consists of 5.93 acres that includes nine (9) parcels (4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11 and 4.13). Included in these parcels are nine (9) buildings (Buildings 253, 254, T256, 257, 260, T261, 263, 265 and 273), one pad (Pad 267) and one open area. The open land area contains Buildings T256 and T261. Site maps of the property proposed to be leased can be found at Enclosure 1.

## 3. ENVIRONMENTAL CONDITION OF THE PROPERTY

A determination of the environmental condition of the facilities has been made based on the Community Environmental Response Facilitation Act (CERFA) Letter Report dated December 5, 1996 and an Environmental Baseline Survey (EBS) dated November 6, 1996. The information provided is a result of a complete search of agency files during the development of these environmental surveys. The following documents also provided information on environmental conditions of the property: Draft Final BRAC Cleanup Plan Version 2 (DDSP-FE, November 1997), Asbestos Reinspection (DDC-WP, October 1996), Final Environmental Assessment for Master Interim Lease (Tetra Tech, September 1996), Remedial Investigation Soil Sampling Letter Report (CH2M Hill, May 1997), OU - 2 and OU - 3 Field Sampling Plans (CH2M Hill, September 1995), Asbestos Identification Survey (Pickering, December 1993 and January 1994), RCRA Facilities Assessment (A.T. Kearney, Inc., January 1990), Final Remedial Investigation Report (Law Environmental, August 1990) and the Installation Assessment (USAEHA, March 1981).

### 3.1 Environmental Condition of Property Categories

The Department of Defense (DOD) Environmental Condition of Property (ECP) Categories for the properties are as follows:

ECP Category 1: Parcel 4.11 - Building 253 only

ECP Category 3:	Parcel 4.8 - Building 263 only Parcel 4.4 - Building 260 only
ECP Category 4:	Parcel 4.13 - Building 265 only
ECP Category 6:	Parcel 4.6 - Building 254 and surrounding area Parcel 4.7 - Building 257 and surrounding area
ECP Category 7:	Parcel 4.10 - Building 273 and surrounding area Parcel 4.9 - Pad 267 and surrounding area Parcel 4.5 - consisting of Buildings T256 and T261 plus all land areas in Parcel 4 except those within Parcels 4.6, 4.7, 4.9 and 4.10

A summary of the ECP Categories for specific buildings or parcels is provided in Table 1 – Description of Property (Enclosure 2).

### **3.2 Storage, Release or Disposal of Hazardous Substances**

Hazardous substances were stored in Buildings 253, 254, 257, 260, 263, 265, 273, Pad 267 and the open areas of Parcel 4.5. It is assumed this storage was in excess of the 40 CFR Part 373 reportable quantities. Hazardous substances were released in Buildings 254, 257, 260, 273, Pad 267 and other areas in Parcel 4.5 surrounding Buildings 253, 263 and T256. It is assumed, unless otherwise noted, releases were in excess of the 40 CFR Part 373 reportable quantities. The release of hazardous substances was either remediated at the time of the release or is currently under evaluation as part of the installation restoration program. There is no risk to human health and the environment so long as the tenant adheres to the Environmental Protection Provisions (Enclosure 5) with particular reference to Provision 14 regarding ground disturbing activities. These activities shall not be allowed without prior written approval from the Government. A summary of the buildings or areas in which hazardous substances activities occurred is provided in Table 2 – Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3).

### **3.3 Petroleum and Petroleum Products**

#### **3.3.1 Storage, Release or Disposal of Petroleum Products**

Petroleum products were stored in Buildings 253, 254, T256, 257 and the open grassy area in Parcel 4.5 directly south of Building 257. It is assumed this storage was in excess of 55 gallons. Petroleum products were released in Building 257 and the surrounding area as well as the open grassy area in Parcel 4.5 directly south of Building 257. It is assumed, unless otherwise noted, these releases were in excess of 55 gallons. The release of petroleum products was either remediated at the time of the release or is currently under evaluation as part of the installation restoration program. There is no risk to human health and the environment so long as the tenant adheres to the Environmental

to human health and the environment so long as the tenant adheres to the Environmental Protection Provisions (Enclosure 5) with particular reference to Provision 14 regarding ground disturbing activities. These activities shall not be allowed without prior written approval from the Government. An underground storage tank removal project for Parcel 4.5 is scheduled for the summer of 1998 and will include all associated piping and any petroleum contaminated soil. A summary of the buildings or areas in which petroleum products were stored or released is provided in Table 3 – Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4).

### **3.3.2 Underground and Above-Ground Storage Tanks (UST/AST)**

There are two (2) underground storage tanks and two (2) aboveground storage tanks (UST/AST) on the property that were used for storage of petroleum products. There is no evidence of petroleum product releases at the following UST/AST sites: the 18,000-gallon UST gasoline tank (converted to diesel in 1995) and the 20,000-gallon UST gasoline tank installed in 1984 south of Building 257, the two (2) 1,000-gallon AST gasoline tanks (one was converted to diesel in 1995) located adjacent to Building 257. A summary of the buildings or areas in which petroleum product activities occurred is provided in Table 3 – Notification of Petroleum Products Storage, Release or Disposal (Enclosure 4).

### **3.4 Polychlorinated Biphenyls (PCB) Equipment**

There are no PCB containing transformers or other PCB containing equipment, except hermetically sealed fluorescent light bulb ballasts that may contain PCBs, located on the property listed in this FOSL. There is no evidence of unremediated PCB releases from these ballasts.

### **3.5 Asbestos**

The EBS and the Asbestos Identification Survey (Pickering, December 1993 and January 1994) indicate Asbestos Containing Materials (ACM) are present in the following buildings:

Building 260: Thermal System Pipe Insulation (to include joints)  
Cement Ceiling Panels  
Exterior Window Putty  
12 x 12 Floor Tiles and Mastic

Building 254: Cement Asbestos Panels  
Felt Paper Roofing Material

Building 257: 12 x 12 Vinyl Floor Tiles  
Asphalt Built Up Roofing and Roof Flashing



Building 253: Exterior Window Frame Putty  
12 x 12 Vinyl Floor Tile  
Thermal System Pipe Insulation

Building 265: Boiler Flue Insulation  
Thermal System Pipe Insulation (to include joints)  
Interior Boiler Door Insulation  
9 x 9 Floor Tile  
12 x 12 Floor Tile  
Roof Flashing

Building 273: No Survey Completed - Structure is a tin and wood shed;  
assumed no ACM present

Building T256: No Survey Completed - Structure is a tin and wood shed;  
assumed no ACM present

Building T261: No Survey Completed - Structure erected in 1993;  
assumed no ACM present

The ACM does not currently pose a threat to human health or the environment because all friable asbestos that posed an unacceptable risk to human health has been removed or encapsulated. The lease will include the asbestos warning and covenant included in the Environmental Protection Provisions (Enclosure 5).

### **3.6 Lead-Based Paint (LBP)**

Based on the age of the buildings (constructed prior to 1978), the following buildings are presumed to contain lead-based paint: Buildings 260, 254, 257, 253, 265, 273, T256, and 263. The lease will include the lead-based paint warning and covenant provided in the Environmental Protection Provisions (Enclosure 5).

### **3.7 Radiological Materials**

There is no evidence that the Department of Defense used or stored radioactive materials on the property.

### **3.8 Radon**

In keeping with DOD policy to not perform radon assessment and mitigation prior to transfer of BRAC property, there were no radon surveys conducted in the buildings in this FOSL.

### 3.9 Unexploded Ordnance

Based on a review of existing records and available information, none of the buildings or surrounding land proposed for lease are known to contain unexploded ordnance.

### 3.10 Other Hazardous Conditions

There are no other known hazardous conditions that present an unacceptable threat to human health or the environment on the property.

## 4. REMEDIATION

In October 1992, the U.S. Environmental Protection Agency (EPA) placed DDMT on the National Priorities List (NPL) for environmental restoration. DDMT has since entered into a Federal Facilities Agreement (FFA) with the Tennessee Department of Environment and Conservation (TDEC) and the EPA. Environmental contamination on the property described in this document does not present a hazard to leasing it. In addition, environmental conditions on adjacent property do not present a hazard to the leasing of the property. Table 2 - Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3) and Table 3 - Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4) provide details regarding environmental conditions for each individual parcel or building contained within this FOSL. Regulators have concurred with DDMT that Buildings 253, 260, 263 and 265 do not pose risks above levels deemed protective provided that the property is used for the proposed purpose and the lessee strictly adheres to the Environmental Protection Provisions (Enclosure 5). Buildings 254 and 257 and the surrounding areas shall be remediated during the Parcel 4.5 underground storage tank removal project scheduled for the summer of 1998 and will not pose risks above levels deemed protective provided the property is used for the proposed purpose. The remaining property consisting of Building 273 and surrounding area, Building T261, Building T256, Pad 267 and surrounding area as well as the remaining open areas do not pose risks above levels deemed protective provided that the property is use for the proposed purpose and the lessee strictly adheres to the Environmental Protection Provisions (Enclosure 5). The lease will include a provision reserving the Army's right to conduct remediation activities in the Environmental Protection Provisions (Enclosure 5).

## 5. REGULATORY/PUBLIC COORDINATION

The U.S. EPA Region 4, TDEC and the public were notified of the initiation of the FOSL. Regulators have reviewed this FOSL and provided comments. These comments have been reviewed and incorporated as appropriate. Regulatory/public comments and responses are provided in Enclosure 6.

## 6. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE AND CONSISTENCY WITH LOCAL REUSE PLAN

The environmental impacts associated with proposed lease of the property have been analyzed in accordance with the National Environmental Policy Act (NEPA). The results of this analysis have been documented in the Final Environmental Assessment for Master Interim Lease, Defense Distribution Depot Memphis, Tennessee, dated September 1996. The environmental effects of the activities anticipated under the proposed lease were determined not to be significant. In addition, the proposed use of the property is consistent with the intended reuse of the property set forth in the Depot Redevelopment Corporation Reuse Plan.

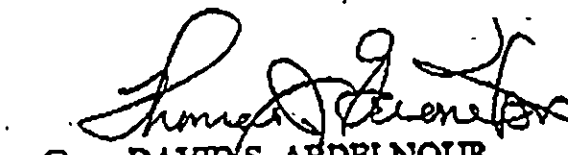
## 7. ENVIRONMENTAL PROTECTION PROVISIONS

On the basis of the above results from the site-specific EBS and other environmental studies and in consideration of the intended use of the property, certain terms and conditions are required for the proposed lease. These terms and conditions are set forth in the attached Environmental Protection Provisions (Enclosure 5) and will be included in the lease.

## 8. FINDING OF SUITABILITY TO LEASE

Based on the above information, I have concluded that all Department of Defense (DOD) requirements to reach a Finding of Suitability to Lease (FOSL) to the Depot Redevelopment Corporation for light industrial use have been fully met for the property subject to the terms and conditions in the attached Environmental Protection Provision (Enclosure 5). As required by CERCLA section 120(h)(3)(B), I have determined that the property is suitable for lease for the intended purpose, the uses contemplated for the lease are consistent with protection of human health and the environment, and there are adequate assurances that the United States will take any additional remedial action found to be necessary that has not been taken on the date of the lease.

As required under the DOD FOSL Guidance, notification of hazardous substance activities and petroleum product activities shall be provided in the lease documents. Refer to Table 2 - Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3) and Table 3 - Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4).

  
 DAVID S. ABDELNOUR  
 Acting Deputy Chief of Staff  
 For Engineering, Housing, Environment, and  
 Installation Logistics

7 Enclosures

FINDING OF SUITABILITY TO LEASE

(FOSL)

*Parcel 8.1, Parcel 8.2, Parcel 8.3*  
*Parcel 8.4, Parcel 8.5*

Defense Distribution Depot Memphis, Tennessee

(FOSL Number 5)

July 8, 1998

## 1. PURPOSE

The purpose of this Finding Of Suitability To Lease (FOSL) is to document the environmental suitability of Parcels 8.1, 8.2, 8.3, 8.4 and 8.5 at the Defense Distribution Depot Memphis, Tennessee (DDMT) for leasing to the Depot Redevelopment Corporation (DRC) for light industry, storage or general office use consistent with Department of Defense (DOD) and Army policy. This FOSL has been developed in accordance with the DRC's Reuse Plan. In addition, the FOSL identifies use restrictions as specified in the attached Environmental Protection Provisions (Enclosure 5) necessary to protect human health and the environment and to prevent interference with any existing or planned environmental restoration activities.

## 2. PROPERTY DESCRIPTION

The proposed property to be leased consists of 17.6 acres that includes five (5) parcels. Included in these parcels are four (4) buildings (Buildings 229, 230, 329 and 330) and the open land area surrounding these buildings. Site maps of the property proposed to be leased can be found at Enclosure 1.

## 3. ENVIRONMENTAL CONDITION OF THE PROPERTY

A determination of the environmental condition of the facilities has been made based on the Community Environmental Response Facilitation Act (CERFA) Letter Report dated December 5, 1996 and an Environmental Baseline Survey (EBS) dated November 6, 1996. The information provided is a result of a complete search of agency files during the development of these environmental surveys. The following documents also provided information on environmental conditions of the property: Draft Final BRAC Cleanup Plan Version 2 (DDSP-FE, November 1997), Asbestos Reinspection (DDC-WP, October 1996), Final Environmental Assessment for Master Interim Lease (Tetra Tech, September 1996), Ordnance and Explosive Waste/Chemical Warfare Materials Archives Search Report (U.S. Army Corps of Engineers, January 1995), Remedial Investigation Soil Sampling Letter Report (CH2M Hill, May 1997), OU - 2 and OU - 3 Field Sampling Plans (CH2M Hill, September 1995), Asbestos Identification Survey (Pickering, December 1993 and January 1994), RCRA Facilities Assessment (A.T. Kearney, Inc., January 1990), Final Remedial Investigation Report (Law Environmental, August 1990) and the Installation Assessment (USAEHA, March 1981).

### 3.1 Environmental Condition of Property Categories

The Department of Defense (DOD) Environmental Condition of Property (ECP) Categories for the property are as follows:

ECP Category 1:	Parcel 8.2 - Building 229 only
	Parcel 8.3 - Building 230 only
	Parcel 8.4 - Building 329 only
	Parcel 8.5 - Building 330 only

ECP Category 7: Parcel 8.1 - Open land areas surrounding the buildings in Parcel 8

A summary of the ECP Categories for specific buildings or parcels is provided in Table 1 - Description of Property (Enclosure 2).

### **3.2 Storage, Release or Disposal of Hazardous Substances**

Hazardous substances were stored in Buildings 229, 230, 329 and 330. It is assumed this storage was in excess of the 40 CFR Part 373 reportable quantities. Hazardous substances were released in the open area surrounding the four (4) buildings in Parcel 8. It is assumed, unless otherwise noted, these releases were in excess of the 40 CFR Part 373 reportable quantities. The release of hazardous substances was either remediated at the time of the release or is currently under evaluation as part of the installation restoration program. There is no risk to human health and the environment so long as the tenant adheres to the Environmental Protection Provisions (Enclosure 5) with particular reference to Provision 14 regarding ground disturbing activities. These activities shall not be allowed without prior written approval from the Government. A summary of the buildings or areas in which hazardous substance activities occurred is provided in Table 2 - Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3).

### **3.3 Petroleum and Petroleum Products**

#### **3.3.1 Storage, Release, or Disposal of Petroleum Products**

Petroleum products were stored in Buildings 229, 230, 329 and 330. It is assumed this storage was in excess of 55 gallons. There is no evidence that petroleum products were released in these buildings; therefore there is no risk to human health or the environment. A summary of the buildings or areas in which petroleum products were stored, released or disposed is provided in Table 3 - Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4).

#### **3.3.2 Underground and Above-Ground Storage Tanks (UST/AST)**

There is no evidence that petroleum products were stored in underground or aboveground storage tanks on the property.

### **3.4 Polychlorinated Biphenyls (PCB) Equipment**

There are no PCB containing transformers or other PCB containing equipment, except hermetically sealed fluorescent light bulb ballasts that may contain PCBs, located on the property listed in this FOSL. There is no evidence of unremediated PCB releases from these ballasts.

### **3.5 Asbestos**

The EBS and the Asbestos Identification Survey (Pickering, December 1993 and January 1994) indicate Asbestos Containing Materials (ACM) are present in the following buildings:

Building 229:	Thermal System Pipe Insulation (to include joints) Cement Asbestos Wall Board Cement Asbestos Transite Pipe Raised Roof Panel Putty 12 x 12 Floor Tiles and Mastic
Building 230:	Cement Asbestos Wall Board 12 x 12 Floor Tile Raised Roof Panel Putty Roof Flashing
Building 329:	Cement Asbestos Wall Board Floor Tile Mastic Raised Roof Panel Putty Roof Flashing
Building 330:	Cement Asbestos Wall Board Floor Tile Mastic Raised Roof Panel Putty Roof Flashing

The ACM does not currently pose a threat to human health or the environment because all friable asbestos that posed an unacceptable risk to human health has been removed or encapsulated. The lease will include the asbestos warning and covenant included in the Environmental Protection Provisions (Enclosure 5).

### **3.6 Lead-Based Paint (LBP)**

Based on the age of the buildings (constructed prior to 1978), the following buildings are presumed to contain lead-based paint: 229, 230, 329 and 330. The lease will include the lead-based paint warning and covenant provided in the Environmental Protection Provisions (Enclosure 5).

### **3.7 Radiological Materials**

There is no evidence that the Department of Defense used or stored radioactive materials on the property addressed in this FOSL.

### **3.8 Radon**

In keeping with DOD policy to not perform radon assessment and mitigation prior to transfer of BRAC property, there were no radon surveys conducted in the buildings in this FOSL.

### **3.9 Unexploded Ordnance**

Based on a review of existing records and available information, none of the buildings or surrounding land proposed for lease are known to contain unexploded ordnance.

### **3.10 Other Hazardous Conditions**

There are no other known hazardous conditions that present an unacceptable threat to human health or the environment on the property.

## **4. REMEDIATION**

In October 1992, the U.S. Environmental Protection Agency (EPA) placed DDMT on the National Priorities List (NPL) for environmental restoration. DDMT has since entered into a Federal Facilities Agreement (FFA) with the Tennessee Department of Environment and Conservation (TDEC) and the EPA. Environmental contamination on the property described in this document does not present a hazard to leasing it. In addition, environmental conditions on adjacent property do not present a hazard to the leasing of the property. Table 2 - Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3) and Table 3 - Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4) provide details regarding environmental conditions for each individual parcel or building contained within this FOSL. Regulators have concurred with DDMT that the open area surrounding buildings in Parcel 8 do not pose risks above levels deemed protective provided that the property is used for the proposed purpose and the lessee strictly adheres to the Environmental Protection Provisions (Enclosure 5)

## **5. REGULATORY/PUBLIC COORDINATION**

The U.S. EPA Region 4, TDEC and the public were notified of the initiation of the FOSL. Regulators have reviewed this FOSL and provided comments. These comments have been incorporated as appropriate. Regulatory/public comments and responses are provided in Enclosure 6.

## **6. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE AND CONSISTENCY WITH LOCAL REUSE PLAN**

The environmental impacts associated with proposed lease of the property have been analyzed in accordance with the National Environmental Policy Act (NEPA). The results of this analysis have been documented in the Final Environmental Assessment for Master Interim Lease, Defense Distribution Depot Memphis, Tennessee, dated September 1996. The environmental effects of the activities anticipated under the proposed lease were determined not to be significant. In addition, the proposed use of the property is consistent with the intended reuse of the property set forth in the Depot Redevelopment Corporation Reuse Plan.



## 7. ENVIRONMENTAL PROTECTION PROVISIONS

On the basis of the above results from the site-specific EBS and other environmental studies and in consideration of the intended use of the property, certain terms and conditions are required for the proposed lease. These terms and conditions are set forth in the attached Environmental Protection Provisions (Enclosure 5) and will be included in the lease.

## 8. FINDING OF SUITABILITY TO LEASE

Based on the above information, I have concluded that all Department of Defense (DOD) requirements to reach a Finding of Suitability to Lease (FOSL) to the Depot Redevelopment Corporation for light industrial use have been fully met for the property subject to the terms and conditions in the attached Environmental Protection Provision (Enclosure 5). As required by CERCLA section 120(h)(3)(B), I have determined that the property is suitable for lease for the intended purpose, the uses contemplated for the lease are consistent with protection of human health and the environment, and there are adequate assurances that the United States will take any additional remedial action found to be necessary that has not been taken on the date of the lease.

As required under the DOD FOSL Guidance, notification of hazardous substance activities and petroleum product activities shall be provided in the lease documents. Refer to Table 2 - Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3) and Table 3 - Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4).



P. S. MORRIS

Colonel, GS

Deputy Chief of Staff for Engineering, Housing,  
Environment and Installation Logistics

### 7 Enclosures

- Encl 1 Site Maps of Property
- Encl 2 Table 1 - Description of Property
- Encl 3 Table 2 - Notification of Hazardous Substance Storage, Release or Disposal
- Encl 4 Table 3 - Notification of Petroleum Product Storage, Release or Disposal
- Encl 5 Environmental Protection Provisions
- Encl 6 Regulatory/Public Comments and Responses
- Encl 7 Reference Materials

FINDING OF SUITABILITY TO LEASE

(FOSL)

*Parcel 1.8, Parcel 6.1, Parcel 9.1, Parcel 10.2, Parcel 10.3, Parcel  
16.1, Parcel 16.2, Parcel 17.2, Parcel 17.3*

Defense Distribution Depot Memphis, Tennessee

(FOSL Number 6)

July 8, 1998

## 1. PURPOSE

The purpose of this Finding Of Suitability To Lease (FOSL) is to document the environmental suitability of Parcels 1.8, 6.1, 9.1, 10.2, 10.3, 16.1, 16.2, 17.2 and 17.3 at the Defense Distribution Depot Memphis, Tennessee (DDMT) for leasing to the Depot Redevelopment Corporation (DRC) for light industry, storage or general office use consistent with Department of Defense (DOD) and Army policy. This FOSL has been developed in accordance with the DRC's Reuse Plan. In addition, the FOSL identifies use restrictions as specified in the attached Environmental Protection Provisions (Enclosure 5) necessary to protect human health and the environment and to prevent interference with any existing or planned environmental restoration activities.

## 2. PROPERTY DESCRIPTION

The proposed property to be leased consists of 52.35 acres that includes nine (9) parcels. Included in these parcels are two (2) buildings (Buildings 359 and 559) and the open land area surrounding these buildings as well as the open land area surrounding Buildings 250, 349, 350, 429, 430, 449, 450, 549, 550, 649 and 650. Site maps of the property proposed to be leased can be found at Enclosure 1.

## 3. ENVIRONMENTAL CONDITION OF THE PROPERTY

A determination of the environmental condition of the facilities has been made based on the Community Environmental Response Facilitation Act (CERFA) Letter Report dated December 5, 1996 and an Environmental Baseline Survey (EBS) dated November 6, 1996. The information provided is a result of a complete search of agency files during the development of these environmental surveys. The following documents also provided information on environmental conditions of the property: Draft Final BRAC Cleanup Plan Version 2 (DDSP-FE, November 1997), Asbestos Reinspection (DDC-WP, October 1996), Final Environmental Assessment for Master Interim Lease (Tetra Tech, September 1996), DDMT Radiological Survey (Administrative Support Center East, August 1996), Remedial Investigation Soil Sampling Letter Report (CH2M Hill, May 1997), OU - 2 and OU - 3 Field Sampling Plans (CH2M Hill, September 1995), Asbestos Identification Survey (Pickering, December 1993 and January 1994), RCRA Facilities Assessment (A.T. Kearney, Inc., January 1990), Final Remedial Investigation Report (Law Environmental, August 1990) and the Installation Assessment (USAEHA, March 1981).

### 3.1 Environmental Condition of Property Categories

The Department of Defense (DOD) Environmental Condition of Property (ECP) Categories for the property are as follows:

ECP Category 1: Parcel 16.2 - Building 559 only

ECP Category 4: Parcel 17.3 - Building 359 only

- ECP Category 7:**
- Parcel 1.8 - Open land area surrounding the buildings in Parcel 1, including the parking lots and grassy areas, the flagpole (Building 143), switch station building (Building 147) and the antenna tower (Building 146)
  - Parcel 6.1 - Open land area surrounding buildings in Parcel 6
  - Parcel 9.1 - Open land area surrounding buildings in Parcel 9
  - Parcel 10.2 - Open land area surrounding buildings in Parcel 10 except land in Parcel 10.3
  - Parcel 10.3 - Open land area between southern corners of Buildings 550 and 650 (reported spill area)
  - Parcel 16.1 - Open land area surrounding buildings in Parcel 16
  - Parcel 17.2 - Open land area surrounding buildings in Parcel 17

A summary of the ECP Categories for specific buildings or parcels is provided in Table 1 – Description of Property (Enclosure 2).

### **3.2 Storage, Release or Disposal of Hazardous Substances**

Hazardous substances were stored in Building 359. It is assumed this storage was in excess of the 40 CFR Part 373 reportable quantities. Hazardous substances were released in Building 359 as well as the open land area surrounding the buildings in Parcels 1, 6, 9, 10, 16 and 17. It is assumed, unless otherwise noted, these releases were in excess of the 40 CFR Part 373 reportable quantities. The release of hazardous substances was either remediated at the time of the release or is currently under evaluation as part of the installation restoration program. There is no risk to human health and the environment so long as the tenant adheres to the Environmental Protection Provisions (Enclosure 5) with particular reference to Provision 14 regarding ground disturbing activities. These activities shall not be allowed without prior written approval from the Government. A summary of the buildings or areas in which hazardous substance activities occurred is provided in Table 2 – Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3).

### **3.3 Petroleum and Petroleum Products**

#### **3.3.1 Storage, Release, or Disposal of Petroleum Products**

Petroleum products were stored in excess of 55 gallons in underground and above-ground storage tanks at Building 359. See Section 3.3.2 for more information regarding these tanks. There is no evidence that any petroleum or petroleum products in excess of 55 gallons at one time were released or disposed on the property. A summary of the buildings or areas in which petroleum products activities occurred is provided in Table 3 – Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4).

#### **3.3.2 Underground and Above-Ground Storage Tanks (UST/AST)**

There is one (1) above-ground storage tank at Building 359 that was used for the storage of petroleum products. There were seven (7) underground storage tanks at Building 359 that

were used for the storage of petroleum products. There is no evidence of petroleum product releases at the following Building 359 USTs/ASTs: 12,000-gallon fuel oil UST (closed in place); 500-gallon fuel oil UST (closed in place); 500-gallon blow down UST (closed in place); 500-gallon fuel oil UST (removed); 1,000-gallon fuel oil UST (removed); 12,000-gallon fuel oil UST (removed); 500-gallon fuel oil UST (removed); 500-gallon diesel fuel AST (currently in place).

A summary of the buildings or areas in which petroleum products were stored is provided in Table 3 - Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4).

### **3.4 Polychlorinated Biphenyls (PCB) Equipment**

There are no PCB containing transformers or other PCB containing equipment, except hermetically sealed fluorescent light bulb ballasts that may contain PCBs, located on the property listed in this FOSL. There is no evidence of unremediated PCB releases from these ballasts.

### **3.5 Asbestos**

The EBS and the Asbestos Identification Survey (Pickering, December 1993 and January 1994) indicate Asbestos Containing Materials (ACM) are present in the following buildings:

Building 359:	Thermal System Pipe Insulation (to include joints) Interior Window Putty Duct Tape 12 x 12 Floor Tiles and Mastic 9 x 9 Floor Tiles and Mastic
Building 559:	Cement Asbestos Wall Board Floor Tile Mastic Roof Flashing

The ACM does not currently pose a threat to human health or the environment because all friable asbestos that posed an unacceptable risk to human health has been removed or encapsulated. The lease will include the asbestos warning and covenant included in the Environmental Protection Provisions (Enclosure 5).

### **3.6 Lead-Based Paint (LBP)**

Based on the age of the buildings (constructed prior to 1978), the following buildings are presumed to contain lead-based paint: 359 and 559. The lease will include the lead-based paint warning and covenant provided in the Environmental Protection Provisions (Enclosure 5).

### **3.7 Radiological Materials**

There is evidence that the Department of Defense used or stored radioactive materials on the following properties included in this FOSL: Building 359, Section 3 - storage of items such as

watches and compasses containing tritium (H-3). There is no evidence that any releases of radiological materials occurred at these buildings. A radiological field survey was conducted at the site, and the survey concluded that this area was suitable for unrestricted use.

### **3.8 Radon**

In keeping with DOD policy to not perform radon assessment and mitigation prior to transfer of BRAC property, there were no radon surveys conducted in the buildings in this FOSL.

### **3.9 Unexploded Ordnance**

Based on a review of existing records and available information, none of the buildings or surrounding land proposed for lease are known to contain unexploded ordnance.

### **3.10 Other Hazardous Conditions**

There are no other known hazardous conditions that present an unacceptable threat to human health or the environment on the property.

## **4. REMEDIATION**

In October 1992, the U.S. Environmental Protection Agency (EPA) placed DDMT on the National Priorities List (NPL) for environmental restoration. DDMT has since entered into a Federal Facilities Agreement (FFA) with the Tennessee Department of Environment and Conservation (TDEC) and the EPA. Environmental contamination on the property described in this document does not present a hazard to leasing it. In addition, environmental conditions on adjacent property do not present a hazard to the leasing of the property. Table 2 - Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3) and Table 3 - Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4) provide details regarding environmental conditions for each individual parcel or building contained within this FOSL. Regulators have concurred with DDMT that the open area surrounding buildings in Parcels 1, 6, 9, 10, 16 and 17 does not pose risks above levels deemed protective provided that the property is used for the proposed purpose and the lessee strictly adheres to the Environmental Protection Provisions (Enclosure 5).

## **5. REGULATORY/PUBLIC COORDINATION**

The U.S. EPA Region 4, TDEC and the public were notified of the initiation of the FOSL. Regulators have reviewed this FOSL and provided comments. These comments have been incorporated as appropriate. Regulatory/public comments and responses are provided in Enclosure 6.

## 6. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE AND CONSISTENCY WITH LOCAL REUSE PLAN

The environmental impacts associated with proposed lease of the property have been analyzed in accordance with the National Environmental Policy Act (NEPA). The results of this analysis have been documented in the Final Environmental Assessment for Master Interim Lease, Defense Distribution Depot Memphis, Tennessee, dated September 1996. The environmental effects of the activities anticipated under the proposed lease were determined not to be significant. In addition, the proposed use of the property is consistent with the intended reuse of the property set forth in the Depot Redevelopment Corporation Reuse Plan.

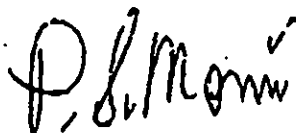
## 7. ENVIRONMENTAL PROTECTION PROVISIONS

On the basis of the above results from the site-specific EBS and other environmental studies and in consideration of the intended use of the property, certain terms and conditions are required for the proposed lease. These terms and conditions are set forth in the attached Environmental Protection Provisions (Enclosure 5) and will be included in the lease.

## 8. FINDING OF SUITABILITY TO LEASE

Based on the above information, I have concluded that all Department of Defense (DOD) requirements to reach a Finding of Suitability to Lease (FOSL) to the Depot Redevelopment Corporation for light industrial use have been fully met for the property subject to the terms and conditions in the attached Environmental Protection Provision (Enclosure 5). As required by CERCLA section 120(h)(3)(B), I have determined that the property is suitable for lease for the intended purpose, the uses contemplated for the lease are consistent with protection of human health and the environment, and there are adequate assurances that the United States will take any additional remedial action found to be necessary that has not been taken on the date of the lease.

As required under the DOD FOSL Guidance, notification of hazardous substance activities and petroleum product activities shall be provided in the lease documents. Refer to Table 2 - Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3) and Table 3 - Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4).



P. S. MORRIS

Colonel, GS

Deputy Chief of Staff for Engineering, Housing,  
Environment and Installation Logistics

### 7 Enclosures

Encl 1 Site Maps of Property

Encl 2 Table 1 - Description of Property

Encl 3 Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

## FINDING OF SUITABILITY TO LEASE

(FOSL)

*Parcel 2.7, Parcel 6.2, Parcel 6.3, Parcel 6.4, Parcel 7.1, Parcel 7.2,  
Parcel 9.2, Parcel 9.3, Parcel 9.4, Parcel 9.5, Parcel 10.1, Parcel 10.4,  
Parcel 10.5, Parcel 10.6, Parcel 11.1, Parcel 11.2, Parcel 11.3,  
Parcel 11.4, Parcel 12.1, Parcel 12.2, Parcel 24.3, Parcel 32.1,  
Parcel 32.2 and Parcel 33.11*

Defense Distribution Depot Memphis, Tennessee

(FOSL Number 7)

October 26, 1998



## **PURPOSE**

The purpose of this Finding of Suitability to Lease (FOSL) is to document the environmental suitability of Parcels 2.7, 6.2, 6.3, 6.4, 7.1, 7.2, 9.2, 9.3, 9.4, 9.5, 10.1, 10.4, 10.5, 10.6, 11.1, 11.2, 11.3, 11.4, 12.1, 12.2, 24.3, 32.1, 32.2 and 33.11 at the Defense Distribution Depot Memphis, Tennessee (DDMT) for leasing to the Depot Redevelopment Corporation (DRC) for light industry, storage, general office or residential (Parcel 2.7 only) use consistent with Department of Defense (DOD) and Army policy. This FOSL has been developed in accordance with the DRC's Reuse Plan. In addition, the FOSL identifies use restrictions as specified in the attached Environmental Protection Provisions (Enclosure 5) necessary to protect human health and the environment and to prevent interference with any existing or planned environmental restoration activities.

## **2. PROPERTY DESCRIPTION**

The proposed property to be leased consists of 66.90 acres which includes twenty-four (24) parcels. Included in these parcels are nineteen (19) buildings (Buildings 249, 250, 349, 350, 429, 430, 449, 450, 529, 530, 549, 550, 629, 630, 649, 650, 770, 771 and 835); the open land area in Parcel 2.7 surrounding the Family Housing units; the open land area in Parcel 7.1 surrounding Building 249; the open land area in Parcel 12.1 surrounding Building 629; the open land area in Parcel 11.1 surrounding Buildings 529, 530 and 630; the open land area in parcel 24.3 surrounding Buildings 770 and 771; the open land area in Parcel 32.1 surrounding Building 835; and the open land area in Parcel 33.11 that contains the 1,000-gallon diesel above ground storage tank outside Building 756. Site maps of the property proposed to be leased can be found at Enclosure 1.

## **3. ENVIRONMENTAL CONDITION OF THE PROPERTY**

A determination of the environmental condition of the facilities has been made based on the Community Environmental Response Facilitation Act (CERFA) Letter Report dated December 5, 1996 and an Environmental Baseline Survey (EBS) dated November 6, 1996. The information provided is a result of a complete search of agency files during the development of these environmental surveys. The following documents also provided information on environmental conditions of the property: Draft Final BRAC Cleanup Plan Version 2 (DDSP-FE, November 1997), Asbestos Reinspection (DDC-WP, October 1996), Final Environmental Assessment for Master Interim Lease (Tetra Tech, September 1996), DDMT Radiological Survey (Administrative Support Center East, August 1996), Remedial Investigation Soil Sampling Letter Report (CH2M Hill, May 1997), OU - 2 and OU - 3 Field Sampling Plans (CH2M Hill, September 1995), Asbestos Identification Survey (Pickering, December 1993 and January 1994), RCRA Facilities Assessment (A T. Kearney, Inc., January 1990), Final Remedial Investigation Report (Law Environmental, August 1990) and the Installation Assessment (USAEHA, March 1981).

### 3.1 Environmental Condition of Property Categories

The Department of Defense (DOD) Environmental Condition of Property (ECP) Categories for the property are as follows:

- ECP Category 1:** Parcel 6.3 - Building 349  
Parcel 9.2 - Building 429  
Parcel 9.4 - Building 449  
Parcel 9.5 - Building 450  
Parcel 10.4 - Building 549  
Parcel 10.6 - Building 650  
Parcel 11.3 - Building 530  
Parcel 11.4 - Building 630
- ECP Category 2:** Parcel 33.11 - Open land area containing the 1,000-gallon diesel above ground storage tank outside Building 756
- ECP Category 3:** Parcel 6.2 - Building 250  
Parcel 6.4 - Building 350  
Parcel 9.3 - Building 430  
Parcel 10.1 - Building 649  
Parcel 10.5 - Building 550  
Parcel 11.2 - Building 529  
Parcel 32.1 - Open land area in north and west of Building 835
- ECP Category 4:** Parcel 7.2 - Building 249  
Parcel 12.2 - Building 629  
Parcel 32.2 - Building 835
- ECP Category 5:** Parcel 2.7 - Open land area surrounding the Family Housing Units (Buildings 176, S178, 179, 181, S183 and 184)
- ECP Category 6:** Parcel 7.1 - Open land area surrounding Building 249
- ECP Category 7:** Parcel 11.1 - Open land area surrounding Buildings 529, 530 and 630  
Parcel 12.1 - Open land area surrounding Building 629  
Parcel 24.3 - Buildings 770 and 771 as well as the open land area surrounding Buildings 770 and 771

A summary of the ECP Categories for specific buildings or parcels is provided in Table 1 - Description of Property (Enclosure 2).

### **3.2 Storage, Release or Disposal of Hazardous Substances**

Hazardous substances were stored in Buildings 249, 250, 350, 430, 529, 550, 629, 649, 770 and 835 as well as the open land area north and west of Building 835 (Parcel 32.1). It is assumed this storage was in excess of the 40 CFR Part 373 reportable quantities. Hazardous substances were released in the following locations: Buildings 249, 250, 350, 430, 529, 550, 629, 649, 770 and 835; the open land area surrounding the Family Housing Units (Parcel 2.7); the open land area surrounding Building 249 (Parcel 7.1); the open land area surrounding Buildings 529, 530 and 630 (Parcel 11.1); the open land area surrounding Building 629 (Parcel 12.1); the open land area surrounding Buildings 770 and 771 (Parcel 24.3); and the open land area north and west of Building 835 (Parcel 32.1). Existing records do not support the determination that releases exceeded the 40 CFR Part 373 reportable quantities unless otherwise noted. The release of hazardous substances was either remediated at the time of the release or is currently under evaluation as part of the installation restoration program. There is no risk to human health and the environment so long as the tenant adheres to the Environmental Protection Provisions (Enclosure 5) with particular reference to Provision 14 regarding ground disturbing activities. These activities shall not be allowed without prior written approval from the Government. A summary of the buildings or areas in which hazardous substance activities occurred is provided in Table 2 – Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3).

### **3.3 Petroleum and Petroleum Products**

#### **3.3.1 Storage, Release, or Disposal of Petroleum Products**

Petroleum products were stored in excess of 55 gallons in underground and above-ground storage tanks at Building 770 and in Parcel 33.11 outside of Building 756. See Section 3.3.2 for more information regarding these tanks. There is evidence that petroleum or petroleum products were released at Building 770. It is assumed, unless otherwise noted, that the release was in excess of 55 gallons. The release of petroleum products was either remediated at the time of the release or is currently under evaluation as part of the installation restoration program. There is no risk to human health and the environment so long as the tenant adheres to the Environmental Protection Provisions (Enclosure 5) with particular reference to Provision 14 regarding ground disturbing activities. These activities shall not be allowed without prior written approval from the Government. A summary of the buildings or areas in which petroleum product activities occurred is provided in Table 3 – Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4).

#### **3.3.2 Underground and Above-Ground Storage Tanks (UST/AST)**

In Parcel 24.3, outside of Building 770, there were four (4) underground storage tanks (USTs) and two (2) above-ground storage tanks (ASTs) used for the storage of petroleum products. There is no evidence of petroleum product releases at the Building 770 USTs/ASTs. In Parcel 33.11, outside Building 756, there is a 1,000-gallon diesel above ground storage tank that replaced a 1,000-gallon diesel UST removed in 1994. A summary of the buildings or areas in

which petroleum products activities occurred is provided in Table 3 – Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4).

### 3.4 Polychlorinated Biphenyls (PCB) Equipment

There are no PCB containing transformers or other PCB containing equipment, except hermetically sealed fluorescent light bulb ballasts that may contain PCBs, located on the property listed in this FOSL. On July 9, 1990, a 50-gallon PCB-containing liquid spill was reported at Building 770. The Spill Team responded, applied absorbent, excavated all stained soil and removed soil and absorbent to the appropriate disposal facility. The lease will include the PCB notification provision contained in the Environmental Protection Provisions (Enclosure 5)

### 3.5 Asbestos

The EBS and the Asbestos Identification Survey (Pickering, December 1993 and January 1994) indicate Asbestos Containing Materials (ACM) are present in the following buildings:

Building 249:	<p>Raised Roof Putty and Roof Flashing  12 x 12 Gray Marble Floor Tiles and Mastic  12 x 12 Beige Marble Floor Tile and Mastic  9 x 9 Brown Vinyl Floor Tile and Mastic  Cement Asbestos Panels on Raised Roof</p>
Building 250:	<p>12 x 12 Floor Tiles and Mastic  Domestic Water Pipe Insulation (Including Joints)  Cement Asbestos Panels on Raised Roof  Raised Roof Putty and Roof Flashing  Asphalt Built-up Roofing</p>
Building 349:	<p>Domestic Water Pipe Joint Insulation  12 x 12 Floor Tile and Mastic  Cement Asbestos Panels on Raised Roof  Raised Roof Putty and Roof Flashing</p>
Building 350:	<p>Domestic Water Pipe Insulation (Including Joints)  Cement Asbestos Panels on Raised Roof  Raised Roof Putty and Roof Flashing</p>
Building 429:	<p>Domestic Water Pipe Joint Insulation  12 x 12 Vinyl Floor Tile  Exterior Window Frame Putty  Cement Asbestos Panels on Raised Roof  Raised Roof Putty and Roof Flashing</p>

**Building 430:** Domestic Water Pipe Joint Insulation  
Exterior Window Frame Putty  
Cement Asbestos Panels on Raised Roof  
Raised Roof Putty and Roof Flashing

**Building 449:** Domestic Water Pipe Insulation (Including Joints)  
12 x 12 Beige Vinyl Floor Tile and Mastic  
12 x 12 Brown Marble Floor Tile  
Concrete Sealant Putty  
Exterior Window Frame Putty  
Cement Asbestos Panels on Raised Roof  
Raised Roof Putty and Roof Flashing

**Building 450:** Domestic Water Pipe Insulation (Including Joints)  
12 x 12 Dark Brown Vinyl Floor Tile  
Exterior Window Frame Putty  
Cement Asbestos Panels on Raised Roof  
Raised Roof Putty and Roof Flashing

**Building 529:** Domestic Water Pipe Joint Insulation  
12 x 12 Dark Vinyl Floor Tile and Mastic  
Cement Asbestos Panels on Raised Roof  
Raised Roof Putty and Roof Flashing

**Building 530:** 12 x 12 Beige Vinyl Floor Tile and Mastic  
Cement Asbestos Panels on Raised Roof  
Raised Roof Putty

**Building 549:** Domestic Water Pipe Joint Insulation  
12 x 12 Dark Brown Vinyl Floor Tile  
Cement Asbestos Panels on Raised Roof  
Raised Roof Putty and Roof Flashing

**Building 550:** Domestic Water Pipe Insulation (Including Joints)  
12 x 12 Beige Vinyl Floor Tile and Mastic

**Building 629:** Domestic Water Pipe Joint Insulation  
12 x 12 Vinyl Floor Tile  
12 x 12 Beige Vinyl Floor Tile  
Cement Asbestos Panels on Raised Roof  
Raised Roof Putty

**Building 630:** Domestic Water Pipe Joint Insulation  
Interior and Exterior Window Frame Putty  
12 x 12 Vinyl Floor Tile

	Cement Asbestos Panels on Raised Roof Raised Roof Putty
Building 649:	Domestic Water Pipe Joint Insulation 12 x 12 Beige Vinyl Floor Tile Cement Asbestos Panels on Raised Roof Raised Roof Putty
Building 650:	Domestic Water Pipe Joint Insulation Exterior Window Frame Putty Cement Asbestos Panels on Raised Roof Raised Roof Putty
Building 770:	Thermal System Pipe Insulation (Includes Joints) Boiler/Flue Insulation and Boiler Rope Gasket 12 x 12 Brown Vinyl Floor Tile Mastic 12 x 12 Brown Vinyl Floor Tile Cement Asbestos Exterior Siding Cement Asbestos Ceiling Panels Roof Flashing
Building 771:	Cement Asbestos Exterior Siding Original Roofing Shingles Cement Asbestos Board on Restroom Walls

The ACM does not currently pose a threat to human health or the environment because all friable asbestos that posed an unacceptable risk to human health has been removed or encapsulated. The lease will include the asbestos warning and covenant included in the Environmental Protection Provisions (Enclosure 5).

### 3.6 Lead-Based Paint (LBP)

Based on the age of the buildings (constructed prior to 1978), the following buildings are presumed to contain lead-based paint: 249, 250, 349, 350, 430, 449, 450, 530, 549, 550, 630 and 650. Lead-based paint on the Family Housing Units, which are not in this FOSL is being abated. These units are surrounding by Parcel 2.7. Appropriate measures will be implemented during the abatement to ensure protection of the soil. The lease will include the lead-based paint warning and covenant provided in the Environmental Protection Provisions (Enclosure 5).

### 3.7 Radiological Materials

The following buildings were used for radiological activities:

- Building 629, Bay 2 - storage of wrist watches containing tritium (H-3) and radium-226 and compasses containing tritium (H-3); possible storage of lantern

mantles containing thorium-232; smoke detectors containing americium 241; electron tubes containing thorium-232, tritium (H-3) and radium-226; and indicator and toggle switches containing radium-226.

- Building 835, Section 6 (east side) - storage of lantern mantles containing thorium-232; smoke detectors containing americium 241; electron tubes containing thorium-232, tritium (H-3) and radium-226; wrist watches containing tritium (H-3) and radium-226; indicator and toggle switches containing radium-226; and compasses containing tritium (H-3).

There is no evidence that any releases of radiological materials occurred at these buildings. A radiological field survey was conducted at those sites having radiological activities, and the survey concluded that these areas were suitable for unrestricted use.

### **3.8 Radon**

In accordance with the Department of Defense Memorandum, Subject: Asbestos, Lead Paint and Radon Policies at BRAC Properties, dated October 31, 1994, no radon surveys were conducted in the buildings included in this FOSL as their intended use will not be residential.

### **3.9 Unexploded Ordnance**

Based on a review of existing records and available information, none of the buildings or land proposed for lease are known to contain unexploded ordnance.

### **3.10 Other Hazardous Conditions**

There are no other known hazardous conditions that present an unacceptable threat to human health or the environment on the property.

## **4. REMEDIATION**

In October 1992, the U.S. Environmental Protection Agency (EPA) placed DDMT on the National Priorities List (NPL) for environmental restoration. DDMT has since entered into a Federal Facilities Agreement (FFA) with the Tennessee Department of Environment and Conservation (TDEC) and the EPA. Environmental contamination on the property described in this document does not present a hazard to persons leasing it. In addition, environmental conditions on adjacent federal government property do not present a hazard to the leasing of the property. Table 2 - Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3) and Table 3 - Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4) provide details regarding environmental conditions for each individual parcel or building contained within this FOSL. Regulators have concurred with the Depot that the following areas and buildings do not pose risks above levels deemed protective provided that the property is used for the proposed purpose and the lessee strictly adheres to the Environmental Protection Provisions (Enclosure 5): Buildings 249, 250, 349, 350, 429, 430, 449, 450, 529, 530, 549, 550,

629, 630, 649, 650, 770, 771 and 835; the open land area surrounding the Family Housing Units (Parcel 2.7); the open land area surrounding Building 249 (Parcel 7.1); the open land area surrounding Buildings 529, 530 and 630 (Parcel 11.1); the open land area surrounding Building 629 (Parcel 12.1); the open land area surrounding Buildings 770 and 771 (Parcel 24.3); and the open land area north and west of Building 835 (Parcel 32.1) and open land area containing the 1,000-gallon diesel above ground storage tank outside Building 756 (Parcel 33.11).

## **5. REGULATORY/PUBLIC COORDINATION**

The U.S. EPA Region 4, TDEC and the public were notified of the initiation of this FOSL. EPA, Defense Logistics Agency and Army Materiel Command have reviewed this FOSL and provided comments. Regulatory/public comments and responses are provided in Enclosure 6.

## **6. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE AND CONSISTENCY WITH LOCAL REUSE PLAN**

The environmental impacts associated with proposed lease of the property have been analyzed in accordance with the National Environmental Policy Act (NEPA). The results of this analysis have been documented in the Final Environmental Assessment for Master Interim Lease, Defense Distribution Depot Memphis, Tennessee, dated September 1996. The environmental effects of the activities anticipated under the proposed lease were determined not to be significant. In addition, the proposed use of the property is consistent with the intended reuse of the property set forth in the Depot Redevelopment Corporation Reuse Plan.

## **7. ENVIRONMENTAL PROTECTION PROVISIONS**

On the basis of the above results from the site-specific EBS and other environmental studies and in consideration of the intended use of the property, certain terms and conditions are required for the proposed lease. These terms and conditions are set forth in the attached Environmental Protection Provisions (Enclosure 5) and will be included in the lease.

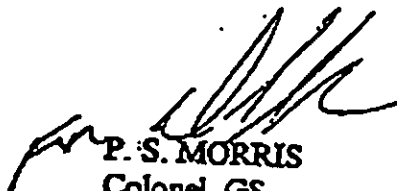
## **8. FINDING OF SUITABILITY TO LEASE**

Based on the above information, I have concluded that all Department of Defense (DOD) requirements to reach a Finding of Suitability to Lease (FOSL) to the Depot Redevelopment Corporation for light industrial and residential (Parcel 2.7 only) use have been fully met for the property subject to the terms and conditions in the attached Environmental Protection Provision (Enclosure 5). As required by CERCLA section 120(h)(3)(B), I have determined that the property is suitable for lease for the intended purpose, the uses contemplated for the lease are consistent with protection of human health and the environment, and there are adequate assurances that the United States will take any additional remedial action found to be necessary that has not been taken on the date of the lease.



710 372

As required under the DOD FOSL Guidance, notification of hazardous substance activities and petroleum product activities shall be provided in the lease documents. Refer to Table 2 - Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3) and Table 3 - Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4).

  
P. S. MORRIS  
Colonel, GS  
Deputy Chief of Staff  
for Engineering,  
Housing, Environment,  
and Installation Logistics

**Enclosures**

- Site Maps of Property
- Table 1 - Description of Property
- 3 Table 2 - Notification of Hazardous Substance Storage, Release or Disposal
- 4 Table 3 - Notification of Petroleum Product Storage, Release or Disposal
- 5 Environmental Protection Provisions
- 6 Regulatory/Public Comments and Responses
- 7 Reference Materials

## FINDING OF SUITABILITY TO LEASE

(FOSL)

*Parcel 3.5, Parcel 3.6, Parcel 3.7, Parcel 3.8, Parcel 3.9, Parcel 3.10,  
Parcel 3.11, Parcel 13.5, Parcel 14.2, Parcel 15.2, Parcel 15.3,  
Parcel 15.4, Parcel 15.5, Parcel 15.6, Parcel 18.2, Parcel 19.1,  
Parcel 19.2, Parcel 19.3, Parcel 20.1, Parcel 20.5, Parcel 20.6,  
Parcel 21.5, Parcel 22.1, Parcel 22.2, Parcel 23.6, Parcel 23.7,  
Parcel 23.8, Parcel 23.9, Parcel 23.10, Parcel 23.11, Parcel 24.1,  
Parcel 24.2, Parcel 25.1, Parcel 25.2, Parcel 26.1, Parcel 26.2,  
Parcel 27.1, Parcel 28.1, Parcel 28.2, Parcel 29.2, Parcel 29.3,  
Parcel 30.2, Parcel 30.3, Parcel 30.4, Parcel 30.5, Parcel 31.1,  
Parcel 32.3, Parcel 33.6, Parcel 33.7, Parcel 33.8, Parcel 33.9,  
Parcel 34.2, Parcel 35.1, Parcel 35.2, Parcel 35.3, Parcel 35.4  
and Parcel 35.5*

Defense Distribution Depot Memphis, Tennessee

(FOSL Number 8)

July 1999

## 1. PURPOSE

The purpose of this Finding of Suitability to Lease (FOSL) is to document the environmental suitability of Parcels 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 13.5, 14.2, 15.2, 15.3, 15.4, 15.5, 15.6, 18.2, 19.1, 19.2, 19.3, 20.1, 20.5, 20.6, 21.5, 22.1, 22.2, 23.6, 23.7, 23.8, 23.9, 23.10, 23.11, 24.1, 24.2, 25.1, 25.2, 26.1, 26.2, 27.1, 28.1, 28.2, 29.2, 29.3, 30.2, 30.3, 30.4, 30.5, 31.1, 32.3, 33.6, 33.7, 33.8, 33.9, 34.2, 35.1, 35.2, 35.3, 35.4 and 35.5 at the former Defense Distribution Depot Memphis, Tennessee (the Depot) for inclusion in the Interim Master Lease held by the Depot Redevelopment Corporation (DRC) for light industry, storage, general office and recreation use consistent with Department of Defense (DOD) and Army policy. This FOSL has been developed in accordance with the DRC's Reuse Plan. In addition, the FOSL identifies use restrictions as specified in the attached Environmental Protection Provisions (Enclosure 5) necessary to protect human health and the environment and to prevent interference with any existing or planned environmental restoration activities.

## 2. PROPERTY DESCRIPTION

The proposed property to be leased consists of 367.52 acres which includes fifty-seven (57) parcels. Included in these parcels are thirty-three (33) buildings (Buildings 194, 197, 211, 301, 308, 309, 319, 398, T416, T417, 465, 468, 469, 717, 720, 737, 783, 793, 801, 802, 863, 865, 873, 875, 949, 970, 1084, 1086, 1087, 1088, 1089, 1090 and 1091), concrete foundations remaining after the demolition of Buildings 209, 702 and 1085, open land areas surrounding these buildings and foundations and extending to Airways Boulevard, Dunn Road, Ball Road and Perry Road; open storage areas X01, X02, X03, X04, X05, X06, X07, X08, X09, X10, X11, X12, X17, X19, X20, X21, X23, X27, X30, Y10, Y50; spill area west of Building 737; spill area on the north dock of Building 489; spill area between Buildings 489 and 490; spill area east of Building 685; spill area between Buildings 925 and 949; spill area northwest of Building 995; former material recoupment area at southeast corner of Building 873; former waste material storage area west of Buildings 308 and 309; recreational area including the golf course, playground, softball field, volleyball and tennis courts, wading pool and open land area surrounding the community club complex; Lake Danielson and associated storm drain ditch; the golf course pond and associated storm drain ditch; open land area between east ends of Buildings 689 and 690; open land area surrounding Building 972; storm drain adjacent to Gate 9; former spray paint area south of Building 949; open land area surrounding Buildings 490, 689 and 690; open land area surrounding Buildings 470, 489 and 670; and a former aboveground storage tank east of Building 770. Site maps of the property proposed for lease can be found at Enclosure 1.

## 3. ENVIRONMENTAL CONDITION OF THE PROPERTY

A determination of the environmental condition of the facilities has been made based on the Community Environmental Response Facilitation Act (CERFA) Letter Report dated December 5, 1996 and an Environmental Baseline Survey (EBS) dated November 6, 1996. The information provided is a result of a complete search of agency files during the development of these environmental surveys. The following documents also provided information on environmental conditions of the property: Nuclear Regulatory Commission letter approving Building 319 for unrestricted use (April 16, 1999), Final Baseline Risk Assessment for Golf Course Impoundments (Radian International, May 1999), Final Streamlined Risk Assessment Parcel 3 Technical Memorandum (CH2M Hill, January 1999), BRAC Cleanup Plan Version 2

(DDSP-FE, October 1998), Revised BRAC Parcel Summary Reports (CH2M Hill, October 1998), Final Remedial Investigation Sites Letter Reports (CH2M Hill, May 1998), Final Screening Sites Letter Reports (CH2M Hill, March 1998), Environmental Baseline Study Radiological Survey for Defense Distribution Depot Memphis (ASCE-IW, August 1996), Termination Radiological Survey for Defense Distribution Depot Memphis Building 319, Bay 6 (ASCE-IW, April 1997), Asbestos Reinspection (DDC-WP, October 1996), Final Environmental Assessment for Master Interim Lease (Tetra Tech, September 1996), DDMT Radiological Survey (Administrative Support Center East, August 1996), Remedial Investigation Soil Sampling Letter Report (CH2M Hill, May 1997), OUs 2, 3 and 4 Field Sampling Plans (CH2M Hill, September 1995), Asbestos Identification Survey (Pickering, December 1993 and January 1994), RCRA Facilities Assessment (A.T. Kearney, Inc., January 1990), Final Remedial Investigation Report (Law Environmental, August 1990) and the Installation Assessment (USAEHA, March 1981).

### 3.1 Environmental Condition of Property Categories

The Department of Defense (DOD) Environmental Condition of Property (ECP) Categories for the property are as follows:

ECP Category 1	Parcel 30.4 - Building 949
ECP Category 2	Parcel 20.1 - Spill area on north dock of Building 489
	Parcel 23.9 - Spill area northwest of Building 995
	Parcel 26.2 - Building 970
	Parcel 33.6 - Spill area west of Building 737
ECP Category 3:	Parcel 15.2 - Building 308
	Parcel 15.4 - Building 702 concrete foundation
	Parcel 18.2 - Open land area surrounding Building 560
	Parcel 19.1 - Building 468 and open land area surrounding Buildings 465, 468 and 469 (Building 467, fabric tension structure, removed in 1996)
	Parcel 19.2 - Building 465
--	Parcel 23.6 - Open land area surrounding Buildings 783, 787 and 793, Gates 6, 7 and 8, and extending to Ball Road
	Parcel 23.7 - Building 783
	Parcel 23.8 - Building 793
	Parcel 23.10 - Open storage area X01
	Parcel 28.1 - Open storage area X04 and open land area extending to Perry Road
	Parcel 33.8 - Building 863
	Parcel 34.2 - Open land area surrounding Building 360
ECP Category 4:	Parcel 15.3 - Building 319
	Parcel 19.3 - Building 469
	Parcel 25.1 - Building 873
	Parcel 30.2 - Spill area between Buildings 925 and 949
ECP Category 5:	Parcel 24.1 - Former material recovery area at southeast corner of Building 873

- ECP Category 6.
- Parcel 15.5 - Former waste material storage area west of Buildings 308 and 309
  - Parcel 25.2 - Building 875 and open land area surrounding Buildings 873 and 875
  - Parcel 28.2 - Building 1089 and surrounding open land area extending to Perry Road
  - Parcel 35.1 - Building 1090
  - Parcel 35.2 - Building 1084, Building 1085 concrete foundation and surrounding open land area
  - Parcel 35.3 - Building 1086
  - Parcel 35.4 - Building 1087, metal-roofed shed south of Building 1088 and open land area surrounding south ends of these buildings
  - Parcel 35.5 - Buildings 1088 and 1091 and surrounding open land area extending to Perry Road
- ECP Category 7.
- Parcel 3.5 - Recreational area including the golf course, playground, softball field, volleyball and tennis courts, wading pool, Buildings 194, 197 and 398, and open land area surrounding the community club complex extending to Ball Road
  - Parcel 3.6 - Lake Danielson
  - Parcel 3.7 - Lake Danielson storm drain ditch
  - Parcel 3.8 - Golf course pond
  - Parcel 3.9 - Golf course pond storm drain ditch
  - Parcel 3.10 - Former pistol range near Hole 9
  - Parcel 3.11 - Former flamethrower test site west of Hole 9
  - Parcel 13.5 - Building 211, Gates 23, 24 and 25, and surrounding open land area extending to Airways Boulevard
  - Parcel 14.2 - Building 209 concrete foundation and surrounding open land area extending to Airways Boulevard and to Dunn Road
  - Parcel 15.6 - Open storage areas X09, Y10 and Y50, Buildings 301, 309, T416, T417, 701 and 717 and surrounding open land area extending to Dunn Road
  - Parcel 20.5 - Open land area surrounding Buildings 470, 489 and 670
  - Parcel 20.6 - Spill area between Buildings 489 and 490
  - Parcel 21.5 - Open land area surrounding Buildings 490, 689 and 690
  - Parcel 22.1 - Open land area between east ends of Buildings 689 and 690
  - Parcel 22.2 - Spill area east of Building 685
  - Parcel 23.11 - Open land area surrounding Building 995
  - Parcel 24.2 - Open storage area X03
  - Parcel 26.1 - Open land area surrounding Building 970
  - Parcel 27.1 - Open land area surrounding Building 972

- Parcel 29.2 - Open storage areas X27 and X30, Buildings 801 and 802, and surrounding open land area extending to Dunn Road and to Perry Road
- Parcel 29.3 - Storm drain ditch adjacent to Gate 9
- Parcel 30.3 - Open storage area X23 and open land area surrounding Buildings 925 and 949
- Parcel 30.5 - Former spray paint area south of Building 949
- Parcel 31.1 - Open storage areas X17, X19, X20 and X21
- Parcel 32.3 - Open storage area X02, Building 865 and surrounding open land area
- Parcel 33.7 - Former aboveground storage tank east of Building 770
- Parcel 33.9 - Open storage areas X05, X06, X07, X08, X10, X11 and X12, Buildings 720 and 737, and open land area surrounding Buildings 720, 737, 753, 755, 756, 860 and 863

A summary of the ECP Categories for specific buildings or parcels is provided in Table 1 – Description of Property (Enclosure 2).

### 3.2 Storage, Release or Disposal of Hazardous Substances

Hazardous substances were stored at the following locations: Buildings 194, 308, 319, 469, 720, 737, 783, 793, 865, 873, 875, 1084, 1086, 1087, 1089, 1090 and 1091; open storage areas X03, X07, X08, X10, X11, X12, X17, X19, X20, X21, X23, Y10 and Y50; former waste material storage area west of Buildings 308 and 309 (Parcel 15.5); former material recoupment area at southeast corner of Building 873 (Parcel 24.1); and open land area surrounding Buildings 925 and 949. It is assumed this storage was in excess of the 40 CFR Part 373 reportable quantities. Hazardous substances were also stored in Building 702 (Parcel 15.4/demolished in 1998), the officer's hobby shop, in small quantities for use by military officers. Hazardous substances were released at the following locations: inside Buildings 465, 469, 737, 863, 865, 873, 1086 and 1087, open storage area X10; Lake Danielson (Parcel 3.6) and associated storm drain ditch (Parcel 3.7); golf course pond (Parcel 3.8) and associated storm drain ditch (Parcel 3.9); former pistol range near Hole 9 (Parcel 3.10); former flamethrower test site west of Hole 9 (Parcel 3.11); storm drain ditch adjacent to Gate 9 (Parcel 29.3); spill area between Buildings 489 and 490 (Parcel 20.6); spill area east of Building 685 (Parcel 22.2); spill area between Buildings 925 and 949 (Parcel 30.2); former waste material storage area west of Buildings 308 and 309 (Parcel 15.5); former material recoupment area at southeast corner of Building 873 (Parcel 24.1); open land area surrounding Buildings 873 and 875 (Parcel 25.2); and former spray paint area south of Building 949 (Parcel 30.5).

In the past, all grassed areas (Parcels 3.5, 3.10, 3.11, 13.5, 14.2, 15.6, 18.2, 20.5, 21.5, 23.6, 23.10, 23.11, 28.1, 28.2, 29.2, 33.9, 34.2 and 35.5) were sprayed with pesticides and herbicides. In the past, all gravel areas (15.5, 15.6, 19.1, 20.5, 21.5, 22.1, 22.2, 23.6, 23.10, 23.11, 24.1, 24.2, 25.2, 26.1, 27.1, 28.1, 28.2, 29.2, 30.3, 32.3, 33.7, 33.9, 35.2, 35.4 and 35.5) were sprayed with pesticides, herbicides and waste oil containing pentachlorophenol (PCP). In the past, all gravel open storage areas (X01, X02, X03, X04, X05, X06, X07, X08, X09, X10,

X11, X12, X17, X19, X20, X21, X23, X27, X30, Y10 and Y50) were sprayed with pesticides, herbicides and waste oil containing pentachlorophenol (PCP). In the past, all railroad tracks (Parcels 13.5, 14.2, 15.6, 18.2, 19.1, 20.5, 23.6, 24.2, 25.2, 26.1, 29.2, 30.3, 31.1, 33.9 and 34.2) were sprayed with pesticides, herbicides and waste oil containing pentachlorophenol (PCP). Existing records do not support the determination that releases exceeded the 40 CFR Part 373 reportable quantities unless otherwise noted in Table 2. The release of hazardous substances was either remediated at the time of the release or is currently under evaluation as part of the installation restoration program. There is no risk to human health and the environment so long as the tenant adheres to the Environmental Protection Provisions (Enclosure 5) with particular reference to Provision 14 regarding ground disturbing activities. These activities shall not be allowed without prior written approval from the Government. A summary of the buildings or areas in which hazardous substance activities occurred is provided in Table 2 – Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3).

Results from the Preliminary Risk Evaluation (PRE) (CH2M Hill, April 1998) indicated industrial reuse scenario carcinogenic risks were within or below (i.e., even less risk) the acceptable exposure level [(40 CFR 300.430 (e)(2)(i)(A)(2))] as defined by the Environmental Protection Agency for the following parcels included in this FOSL: 13.5, 14.2, 15.2, 15.3, 15.4, 15.5, 15.6, 18.2, 19.1, 19.2, 19.3, 20.1, 20.5, 20.6, 21.5, 22.1, 22.2, 23.6, 23.7, 23.8, 23.9, 23.10, 23.11, 24.1, 24.2, 25.1, 25.2, 26.1, 26.2, 27.1, 28.1, 28.2, 29.2, 29.3, 30.2, 30.3, 30.4, 30.5, 31.1, 32.3, 33.6, 33.7, 33.8, 33.9, 34.2, 35.1, 35.2, 35.3, 35.4 and 35.5. Risk assessment information for the Parcel 3 is contained in subsequent paragraphs of this FOSL.

Results from the PRE (CH2M Hill, April 1998) indicated industrial reuse scenario non-carcinogenic risks were within or below (i.e., even less risk) the acceptable exposure level [(40 CFR 300.430 (e)(2)(i)(A)(1))] as defined by the Environmental Protection Agency for the following parcels included in this FOSL: 13.5, 14.2, 15.2, 15.3, 15.5, 15.6, 18.2, 19.1, 19.2, 19.3, 20.1, 20.5, 20.6, 21.5, 22.1, 22.2, 23.6, 23.7, 23.8, 23.9, 23.10, 23.11, 24.1, 24.2, 25.1, 25.2, 26.1, 26.2, 27.1, 29.2, 30.2, 30.3, 30.4, 31.1, 32.3, 33.6, 33.7, 33.8, 33.9, 34.2, 35.1, 35.2, 35.3, 35.4 and 35.5.

Results from the PRE (CH2M Hill, April 1998) indicated Parcels 15.4, 28.1, 28.2, 29.3, 30.5 and 35.4 industrial reuse scenario non-carcinogenic risks were above the acceptable exposure level [(40 CFR 300.430 (e)(2)(i)(A)(1))] as defined by the Environmental Protection Agency. One sample for Parcel 15.4 taken adjacent to the remaining concrete pad from the demolition of Building 702 was above acceptable exposure levels and will be further evaluated under the installation restoration program. One sample for Parcel 28.1 was taken adjacent to a railroad track and was on the threshold of the acceptable exposure level. All railroad tracks will be further evaluated under the installation restoration program. Samples for Parcel 30.5 were collected adjacent to Screening Site 83 and will be further evaluated under the installation restoration program. Parcel 28.2 and 35.4 include Remedial Investigation Site 32 and Screening Sites 31, 33 and 89 all of which are included in a proposed removal action that, if approved, is anticipated to occur in 1999. Parcel 29.3 is a concrete lined stormwater drainage ditch at which no beneficial occupancy will occur. There is no risk to human health and the environment so long as the tenant adheres to the Environmental Protection Provisions (Enclosure 5) with particular reference to Provision 14 regarding ground disturbing activities. These activities shall not be allowed without prior written approval from the Government.

In an effort to evaluate health risks associated with the historical use of pesticides at the recreational area of the Depot, which includes parcels 3.5, 3.6, 3.7, 3.8, 3.9, 3.10 and 3.11, the BRAC Cleanup Team had a streamlined risk assessment conducted. Results of this assessment are contained in the Final Streamlined Risk Assessment Parcel 3 Technical Memorandum (CH2M Hill, January 1999). The assessment is unique in that it has been expedited when compared to the typical "Superfund" process. From late 1996 through 1998, over fifty surface soil samples from throughout these parcels were collected, analyzed, and the results processed through several risk assessment scenarios reflected of intended, like reuse of the recreational area. The assessment concluded that risks associated with pesticides on the softball field or the playground for small children or adolescence youths were below the acceptable exposure level [(40 CFR 300.430 (e)(2)(i)(A)(2))] as defined by the Environmental Protection Agency. The assessment also concluded that risks associated with pesticides on the golf course for golfers were within the acceptable exposure level [40 CFR 300.430 (e)(2)(i)(A)(2)] as defined by the Environmental Protection Agency. When compared with other golf courses, pesticide levels at the Depot were typical. Golf courses in the city of Memphis usually notify course users about the application of pesticides by posting signs and flyers. Therefore, the Lessee is required to comply with Environmental Protection Provision 20 (Enclosure 5) regarding the posting of signs regarding historical and current pesticide use.

Health risks associated with surface water, sediments and aquatic animals in Lake Danielson (Parcel 3.6) and the Golf Course Pond (Parcel 3.8) were also assessed in an expedited manner. Final results are included in the final Baseline Risk Assessment for Golf Course Impoundments at the Defense Distribution Depot Memphis, Tennessee (Radian International, May 1999). The surface water, sediments and aquatic animals from these two impoundments were sampled, analyzed, and evaluated to determine the risk associated with consumption of the fish and the frog legs. It is important to note that the only aquatic animals collected from either impoundment were frogs, goldfish and a forage fish known as a shiner (*Notropis girardi*). Many different sample collection techniques were utilized to collect aquatic animals including angling, trapping and electroshocking. Frogs, goldfish and shiners were the only species collected. In correspondence from a certified Piscivarian Wildlife Biologist from the Tennessee Valley Authority (TVA), the Lessee was advised that no appreciable/viable populations of game fish species were within either impoundment. The assessment indicated risks associated with consumption of non-game fish and frog legs from the impoundments were below the acceptable exposure level [40 CFR 300.430 (e)(2)(i)(A)(2)] as defined by the Environmental Protection Agency. The assessment also indicates risks posed by exposure to surface water and sediments through swimming in the impoundments were below the acceptable exposure level [40 CFR 300.430 (e)(2)(i)(A)(2)] as defined by the Environmental Protection Agency. In 1986 due to unsupervised swimming and proximity to golf course fairways as well as preliminary sampling results, fishing and swimming in both impoundments was banned and signs to this effect were posted. Further sampling and risk assessments efforts have determined that there is no health risk reason from substances in surface water, sediments or aquatic life in the impoundments for this ban to continue. However, the Lessee should maintain the signage around the impoundments as the Lessee may decide to continue the ban on fishing and swimming for safety reasons.



### 3.3 Petroleum and Petroleum Products

#### 3.3.1 Storage, Release, or Disposal of Petroleum Products

Petroleum products were stored in excess of 55 gallons at following locations: Buildings 209 (Parcel 14.2/demolished in 1998), 465, 469, 865, 873, 875, 970, 1085 (in Parcel 35.2/demolished in 1988), 1090 and 1091; open storage areas X03, X07, X10, X11, X12, X17, X19, X20, X21, X23 and Y10; former waste material storage area west of Buildings 308 and 309 (Parcel 15.5); former material recoupment area at southeast corner of Building 873 (Parcel 24.1); former aboveground storage tank (Tank 765) east of Building 770 (Parcel 33.7); in Parcel 13.5 at the current aboveground storage tank for the emergency generator associated with Building 211; in Parcel 15.6 at a former underground storage tank adjacent to Building 319; in Parcel 33.9 at a former aboveground storage tank (Tank 721) adjacent to Building 720 and at a former underground storage tank adjacent to Building 754 (Building 754 is Parcel 33.2 and is not included in this FOSL). Small quantities of petroleum products were stored and used at former Building 702 (Parcel 15.4/demolished in 1998), the officer's hobby shop. See Section 3.3.2 for more information regarding underground and aboveground storage tanks.

There is evidence that petroleum or petroleum products were released at the following locations: inside Buildings 465, 468, 469, 863, 873 and 970; at open storage areas X03, X11, X27 and X30; the spill area on north dock of Building 489 (Parcel 20.1); spill area northwest of Building 995 (Parcel 23.9); spill area west of Building 737 (Parcel 33.6); former flamethrower test site west of Hole 9 (Parcel 3.11); open land area surrounding Buildings 689 and 690 (Parcel 21.5); in open storage area X03 between Buildings 771 and 873 (Parcel 24.2); open land area surrounding Buildings 873 and 875 (Parcel 25.2); open land area surrounding Building 972 (Parcel 27.1).

In the past, all gravel areas (15.5, 15.6, 19.1, 20.5, 21.5, 22.1, 22.2, 23.6, 23.10, 23.11, 24.1, 24.2, 25.2, 26.1, 27.1, 28.1, 28.2, 29.2, 30.3, 32.3, 33.7, 33.9, 35.2, 35.4 and 35.5) were sprayed with pesticides, herbicides and waste oil containing pentachlorophenol (PCP). In the past, all gravel open storage areas (X01, X02, X03, X04, X05, X06, X07, X08, X09, X10, X11, X12, X17, X19, X20, X21, X23, X27, X30, Y10 and Y50) were sprayed with pesticides, herbicides and waste oil containing pentachlorophenol (PCP). In the past, all railroad tracks (Parcels 13.5, 14.2, 15.6, 18.2, 19.1, 20.5, 23.6, 24.2, 25.2, 26.1, 29.2, 30.3, 31.1, 33.9 and 34.2) were historically sprayed with pesticides, herbicides and waste oil containing pentachlorophenol (PCP).

It is assumed, unless otherwise noted in Table 3 and with the exception of the waste oil sprayed on gravel areas and railroad tracks, that releases were in excess of 55 gallons. The release of petroleum products was either remediated at the time of the release or is currently under evaluation as part of the installation restoration program. There is no risk to human health and the environment so long as the tenant adheres to the Environmental Protection Provisions (Enclosure 5) with particular reference to Provision 14 regarding ground disturbing activities. These activities shall not be allowed without prior written approval from the Government. A summary of the buildings or areas in which petroleum product activities occurred is provided in Table 3 - Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4).

### 3.3.2 Underground and Aboveground Storage Tanks (UST/AST)

There were eight underground storage tanks (UST) and two aboveground storage tanks (AST) on the property that were used for storage of petroleum products. There is no evidence of release or disposal at the following UST/AST sites: In Parcel 14.2 on north side of Building 209: 12,000-gallon heating oil UST removed in July 1994, 500-gallon heating oil UST removed in July 1995, and 500-gallon boiler blow down UST removed in July 1995. In Parcel 13.5 west of Building 211: 500-gallon diesel fuel AST that remains active. In Parcel 15.6 north of Building 319: 4,000-gallon heating oil UST removed in July 1994. In Parcel 33.9 west of Building 720: 12,000-gallon AST removed in July 1997. In Parcel 33.9 on east side of Building 754: 200-gallon gasoline UST removed in 1986. In Parcel 25.2 on east side of Building 875: 1,000-gallon heating oil UST closed in place in 1994. In Parcel 35.2 on east side of former Building 1085 that was demolished by 1988: 1,000-gallon waste oil UST removed in 1988 and 100-gallon hydraulic fluid UST closed in place in 1995. A summary of the buildings or areas in which petroleum product activities occurred is provided in Table 3 – Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4).

### 3.4 Polychlorinated Biphenyls (PCB) Equipment

There are no PCB containing transformers or other PCB containing equipment, except hermetically sealed fluorescent light bulb ballasts that may contain PCBs, located on the property listed in this FOSL. There has been no evidence of release from this equipment. There is evidence that PCBs or PCB contaminated fluids were released from PCB-containing equipment, but it has since been removed, at Building 469.

On December 16, 1993, approximately 4 to 6 ounces of PCB (PCB-1242) contaminated fluid was spilled on a small portion of the southern interior wall and floor (2 square feet on wall and 2 square feet on floor) of Building 469. The Spill Team responded, applied absorbent and disposed of all residue in accordance with federal, state and local regulations. The sheet rock wall and concrete floor absorbed some of the fluid. According to the Spill Team Leader, the effected sheet rock and concrete floor were removed during sampling efforts. The BRAC Cleanup Team performed a visual inspection and identified no remaining contamination and determined no further action was required to address the spill. There is no risk to human health and the environment. The lease will include the PCB notification provision in the Environmental Protection Provisions (Enclosure 5)

### 3.5 Asbestos

The EBS and the Asbestos Identification Survey (Pickering, December 1993 and January 1994) indicate Asbestos Containing Materials (ACM) are present in the following buildings:

Building 308:	Roof flashing: non-friable
Building 309:	Roof flashing: non-friable
	Asphalt built-up roof: non-friable
	Cement asbestos wall panels: assessment does not indicate friability, indicates poor condition/heavy damage

Building 319:	Asphalt built-up roof: non-friable
Building 398:	Dry wall leveling compound: non-friable
Building T416:	Cement asbestos siding shingles: non-friable Interior window frame putty: non-friable Exterior door frame putty: non-friable
Building T417:	Cement asbestos siding shingles: non-friable Exterior window and door frame putty: non-friable
Building 717:	Window and door frame putty: non-friable
Building 720:	12 x 12 brown vinyl floor tile and mastic: non-friable Exterior window and door putty: non-friable Asphalt built-up roofing: non-friable Roof flashing: non-friable
Building 737:	Cement asbestos shingle siding/exterior gables: non-friable
Building 783	Mastic crack sealant: non-friable
Building 801:	Exterior window and door frame putty: non-friable
Building 873:	Asphalt built-up roofing: non-friable Roof flashing: non-friable
Building 875:	Cement asbestos wall board/breakroom heater: non-friable Cement asbestos shingles/Bay 4 office exterior: non-friable Restroom floor tile mastic: non-friable Thermal system pipe insulation: non-friable 12 x 12 brown floor tile and mastic in office: non-friable Boiler room pipe insulation: non-friable Boiler room pipe joint insulation: non-friable Boiler room tank insulation: non-friable Asphalt built-up roofing: non-friable Roof flashing: non-friable
Building 1084:	Roof flashing: non-friable
Building 1087:	Thermal system duct insulation/paint booth: non-friable
Building 1090:	Mastic/sealant coating roof bolts: non-friable
Building 1091:	Mastic/sealant coating roof bolts: non-friable

The ACM does not currently pose a threat to human health or the environment because all friable asbestos that posed an unacceptable risk to human health has been removed or encapsulated. The lease will include the asbestos warning and covenant included in the Environmental Protection Provisions (Enclosure 5).

### 3.6 Lead-Based Paint (LBP)

Based on the age of the buildings (constructed prior to 1978), the following buildings are presumed to contain lead-based paint: 194, 197, 301, 308, 309, 319, 398, T416, T417, 465, 468, 469, 717, 720, 783, 793, 801, 802, 863, 865, 873, 875, 970, 1084, 1086, 1087, 1088, 1089, 1090 and 1091. The lease will include the lead-based paint warning and covenant provided in the Environmental Protection Provisions (Enclosure 5).

### 3.7 Radiological Materials

The following buildings were used for radiological activities:

- Building 319, Bay 6 - storage of lantern mantles containing thorium-232; smoke detectors containing americium 241; electron tubes containing thorium-232, tritium (H-3) and radium-226; wrist watches containing tritium (H-3) and radium-226; indicator and toggles switches containing radium-226; and compasses containing tritium (H-3).

A radiological field survey was conducted in 1996 at those sites having radiological activities. The survey indicated Building 319 had several wall surfaces with alpha radiation above the alpha background radiation level and recommended additional characterization be performed to determine the cause of the slightly elevated alpha radiation before being released for unrestricted use. The characterization study was completed in April 1997 and concluded that the higher levels of alpha radiation resulted from naturally occurring radioactivity in the pre-cast concrete building materials. The characterization study concluded that Building 319 could be released for unrestricted use. In a letter dated April 16, 1999, the NRC approved the Defense Distribution Center's request to amend the Depot's license and released Building 319 for unrestricted use.

### 3.8 Radon

In accordance with the Department of Defense Memorandum, Subject: Asbestos, Lead Paint and Radon Policies at BRAC Properties, dated October 31, 1994, no radon surveys were conducted in the buildings included in this FOSL as their intended use will not be residential.

### 3.9 Unexploded Ordnance

Based on a review of existing records and available information, none of the buildings or land proposed for lease are known to contain unexploded ordnance.

### 3.10 Other Hazardous Conditions

There are no other known hazardous conditions that present an unacceptable threat to human health or the environment on the property.

#### 4. REMEDIATION

In October 1992, the U.S. Environmental Protection Agency (EPA) placed the Depot on the National Priorities List (NPL) for environmental restoration. The Depot has since entered into a Federal Facilities Agreement (FFA) with the Tennessee Department of Environment and Conservation (TDEC) and the EPA. Environmental contamination on the property described in this document does not present a hazard to persons leasing it. In addition, environmental conditions on adjacent federal government property do not present a hazard to the leasing of the property. Table 2 - Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3) and Table 3 - Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4) provide details regarding environmental conditions for each individual parcel or building contained within this FOSL. The EPA has concurred that the areas and buildings included in this Finding of Suitability to Lease are suitable to lease provided that the property uses are consistent with the Depot Redevelopment Plan and that the lessee strictly adheres to the Environmental Protection Provisions (Enclosure 5).

#### 5. REGULATORY/PUBLIC COORDINATION

The U.S. EPA Region 4, TDEC and the public were notified of the initiation of this FOSL. EPA and TDEC were provided copies of the draft for review and comment. EPA, DLA and the Department of Army have provided comments. All comments and responses are located at Enclosure 6.

#### 6. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE AND CONSISTENCY WITH LOCAL REUSE PLAN

The environmental impacts associated with proposed lease of the property have been analyzed in accordance with the National Environmental Policy Act (NEPA). The results of this analysis have been documented in the Final Environmental Assessment for Master Interim Lease, Defense Distribution Depot Memphis, Tennessee, dated September 1996. The environmental effects of the activities anticipated under the proposed lease were determined not to be significant. In addition, the proposed use of the property is consistent with the intended reuse of the property set forth in the Depot Redevelopment Corporation Reuse Plan.

#### 7. ENVIRONMENTAL PROTECTION PROVISIONS

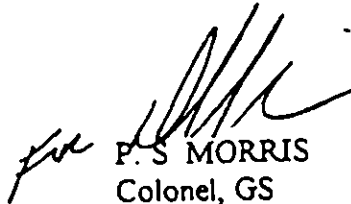
On the basis of the above results from the site-specific EBS and other environmental studies and in consideration of the intended use of the property, certain terms and conditions are required for the proposed lease. These terms and conditions are set forth in the attached Environmental Protection Provisions (Enclosure 5) and will be included in the lease.

#### 8. FINDING OF SUITABILITY TO LEASE

Based on the above information, I have concluded that all Department of Defense (DOD) requirements to reach a Finding of Suitability to Lease (FOSL) to the Depot Redevelopment Corporation for light industrial and recreational use have been fully met for the property subject to the terms and conditions in the attached Environmental Protection Provision (Enclosure 5). As required by CERCLA section 120(h)(3)(B), I have determined that the property is suitable for lease for the intended purpose, the uses contemplated for the lease are consistent with protection

human health and the environment, and there are adequate assurances that the United States will take any additional remedial action found to be necessary that has not been taken on the date of the lease.

As required under the DOD FOSL Guidance, notification of hazardous substance activities and petroleum product activities shall be provided in the lease documents. Refer to Table 2 - Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3) and Table 3 - Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4).

  
P. S. MORRIS  
Colonel, GS  
Deputy Chief of Staff  
for Engineering,  
Housing, Environment  
and Installation Logistics

7 Enclosures

- Encl 1 Site Maps of Property
- Encl 2 Table 1 - Description of Property
- Encl 3 Table 2 - Notification of Hazardous Substance Storage, Release or Disposal
- Encl 4 Table 3 - Notification of Petroleum Product Storage, Release or Disposal
- Encl 5 Environmental Protection Provisions
- Encl 6 Regulatory/Public Comments and Responses
- Encl 7 Reference Materials



DEPARTMENT OF THE ARMY  
HEADQUARTERS, U.S. ARMY MATERIEL COMMAND  
5001 EISENHOWER AVENUE, ALEXANDRIA, VA 22333-0001

REPLY TO  
ATTENTION OF

23 FEB 2001

AMCIS-R

MEMORANDUM THRU Commander, U.S. Army Engineers Division, South  
Atlantic, ATTN: CESAD-RE, Room 9M7, 60 Forsyth  
Street, SW, Atlanta, GA 30303-8801


FOR Commander, U.S. Army Corps of Engineer, Mobile District, ATTN:  
CESAM-RE-MM, New Federal Building, 109 Saint Joseph St.,  
Mobile, AL 36628-0001

SUBJECT: Finding of Suitability to Transfer (FOST-1), Revised for  
Transfer of Property at Defense Distribution Depot Memphis,  
Tennessee (DDMT)

1. Reference memorandum, DDSP-F, 31 Oct 00, SAB.
2. Enclosed for your action is a copy of the FOST-1, Revised documents for the transfer of approximately 6.51 acres that include seven (7) parcels at DDMT. The enclosed pages are to replace the corresponding pages on the previously approved FOST-1, 7 Jun 00.
3. Request a deed be executed in accordance with the enclosed approved documents.
4. Points of contact for this action are Mr. John Farrar, AMCIS-R, commercial (703) 617-0726, DSN 767-0726, and Mr. Joe Goetz, AMCIS-R, commercial (703) 617-9282, DSN 767-9282.
5. AMC - Army READINESS Command... Supporting Every Soldier Every Day.

FOR THE COMMANDER:

4 Encls  
as

  
CHRISTOPHER J. YOUNG  
COL, GS  
Deputy Chief of Staff  
for Installations

FINDING OF SUITABILITY TO TRANSFER  
(FOST)

#1

*(Parcel 2.1, Parcel 2.2, Parcel 2.3, Parcel 2.4,  
Parcel 2.5, Parcel 2.6, Parcel 2.7)*

at the former Defense Distribution Depot Memphis, Tennessee

January 2000  
(Corrected September 2000)



## PURPOSE

The purpose of this Finding Of Suitability To Transfer (FOST) is to document the environmental suitability of Parcels 2.1, 2.2, 2.3, 2.4, 2.5, 2.6 and 2.7 at the former Defense Distribution Depot Memphis, Tennessee (Depot) for transfer for residential use consistent with Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Section 120(h), Department of Defense (DOD) and Army policy. This FOST has been developed in accordance with the Depot Redevelopment Corporation's (DRC) Reuse Plan. In addition, this FOST identifies use restrictions as specified in the attached Environmental Protection Provisions necessary to protect human health or the environment after such transfer.

## 2. PROPERTY DESCRIPTION

The proposed property to be transferred consists of 6.51 acres that includes seven (7) parcels. Included in these parcels are six buildings and the open land area surrounding these buildings. Site maps of the property proposed for transfer can be found at Enclosure 1.

## 3. ENVIRONMENTAL CONDITION OF THE PROPERTY

A determination of the environmental condition of the facilities has been made based on the Post Removal Report Family Housing Memphis Depot Tennessee, the Comprehensive Environmental Response Facilitation Act (CERFA) letter to EPA dated December 5, 1997 and the Environmental Baseline Survey (EBS) dated November 6, 1996. The information provided is a result of a complete search of agency files during the development of these environmental surveys. The following documents also provided information on environmental conditions of the property: Revised BRAC Parcel Summary Reports (CH2M Hill, October 1998), Final BRAC Cleanup Plan Version 2 (DDSP-FE, October 1998), Asbestos Reinspection (DDRE-WP, October 1996), Final Environmental Assessment for BRAC 95 Disposal and Reuse (Tetra Tech, February 1998), Lead-Based Paint Risk Assessment for the Defense Distribution Depot Memphis, Tennessee (Barge, Waggoner, Sumner and Cannon, April 1996), Lead-Based Paint Survey Letter Report (Memphis/Shelby County Health Department, August 2, 1997), Asbestos Identification Survey (Pickering, December 1993 and January 1994).

### 3.1 Environmental Condition of Property Categories

The Department of Defense (DOD) Environmental Condition of Property (ECP) Categories for the property are as follows:

ECP Category 1:	Parcel 2.1 - Family housing unit Building 176
	Parcel 2.2 - Detached garage Building S178
	Parcel 2.3 - Family housing unit Building 179
	Parcel 2.4 - Family housing unit Building 181
	Parcel 2.5 - Detached garage Building S183
	Parcel 2.6 - Family housing unit Building 184

ECP Category 4:	Parcel 2.7 - Open land area surrounding these buildings and
-----------------	---

extending to the installation fenceline south of N Street.

A summary of the ECP Categories for specific buildings or parcels is provided in Table 1  
- Description of Property (Enclosure 2)

### **3.2 Storage, Release or Disposal of Hazardous Substances**

Hazardous substances were released or disposed of in excess of the 40 CFR Part 373 reportable quantities in the following area: northern portion of Parcel 2.7 - open land area surrounding the family housing units. The release or disposal of these hazardous substances was remediated as part of the installation restoration program. All necessary response actions have been taken at this site. A summary of the area in which hazardous substance activities occurred is provided in Table 2 - Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3).

### **3.3 Petroleum and Petroleum Products**

#### **3.3.1 Storage, Release, or Disposal of Petroleum Products**

There is no evidence that any petroleum or petroleum products in excess of 55 gallons at one time were stored, released or disposed of on the property. Accordingly, there is no need for any notification of petroleum product storage, release or disposal.

#### **3.3.2 Underground and Above-Ground Storage Tanks (UST/AST)**

There is no evidence that petroleum products were stored in underground or above-ground storage tanks on the property.

#### **3.4 Polychlorinated Biphenyls (PCB) Equipment**

There are no PCB containing transformers or other PCB containing equipment located on the property and no evidence of unremediated releases from PCB equipment.

### **3.5 Asbestos**

The EBS and the Asbestos Identification Survey (Pickering, December 1993 and January 1994) indicate Asbestos Containing Materials (ACM) are present in the following buildings:

Building 176 - Rolled flooring in kitchen areas - non-friable  
Thermal pipe insulation and pipe joint insulation  
in basement - non-friable/encapsulated  
Pipe insulation between basement ceiling and upstairs  
bathroom (Encased in exterior wall) - non-friable

Building S178 - Cement siding shingles - non-friable

Building 179 - Rolled flooring in kitchen areas - non-friable  
 Thermal pipe insulation and pipe joint insulation  
 in basement - non-friable/encapsulated  
 Pipe insulation between basement ceiling and upstairs  
 bathroom (Encased in exterior wall) - non-friable

Building 181 - Rolled flooring in kitchen areas - non-friable  
 Thermal pipe insulation and pipe joint insulation  
 in basement - non-friable/encapsulated  
 Pipe insulation between basement ceiling and upstairs  
 bathroom (Encased in exterior wall) - non-friable

Building 183 - Cement siding shingles - non-friable

Building 184 - Thermal pipe insulation and pipe joint insulation  
 in basement - non-friable/encapsulated  
 Pipe insulation between basement ceiling and upstairs  
 bathroom (Encased in exterior wall) - non-friable

The ACM does not currently pose a threat to human health or the environment because all friable asbestos that posed an unacceptable risk to human health has been either removed or encapsulated. The deed will include the asbestos warning and covenant included in the Environmental Protection Provisions (Enclosure 5).

### 3.6 Lead-Based Paint (LBP)

Based on the following LBP surveys, Lead-Based Paint Risk Assessment for the Defense Distribution Depot Memphis Tennessee, revised April 1996, and Memphis/Shelby County Health Department LBP Survey letter report dated August 2, 1997, the following buildings were determined to contain lead-based paint on the exterior and bathroom surfaces only: 176, 179, 181 and 183. Subsequent to these surveys, the exterior LBP was abated by removal of all painted trim pieces. The Lead-Based Paint Risk Assessment for the Defense Distribution Depot Memphis Tennessee, revised April 1996 indicated that the LBP present in the bathrooms was in good condition and posed no risk while in good condition. Subsequent to the exterior LBP abatement, an October 1999 inspection of the interior bathrooms found the painted surfaces remained in good condition. Only encapsulated LBP is on the garages, Building S178 and S183. The deed will include the lead-based paint warning and covenant provided in the Environmental Protection Provisions (Enclosure 5).

### 3.7 Radiological Materials

There is no evidence that radiological material or sources were used or stored on the property included in this FOST.

### 3.8 Radon

Radon surveys were conducted in the following buildings: 176, 179, 181 and 184. Radon was not detected at above the EPA residential action level of 4 picocuries per liter (pCi/L) in these buildings.

### 3.9 Unexploded Ordnance

Based on a review of existing records and available information, none of the buildings or surrounding land proposed for transfer are known to contain unexploded ordnance.

### 3.10 Other Hazardous Conditions

There are no other known hazardous conditions which required remediation or a response action for the property to be suitable for transfer for the intended use.

## 4. REMEDIATION

In October 1992, the U.S. Environmental Protection Agency (EPA) placed DDMT on the National Priorities List (NPL) for environmental restoration. The following environmental orders/agreements are applicable to the property: Federal Facilities Agreement (FFA) among the Defense Logistics Agency, the Tennessee Department of Environment and Conservation (TDEC) and the Environmental Protection Agency, Region IV. All necessary remediation activities on the property by such agreement or order are completed. A removal action to remove soil impacted by the pesticide dieldrin was completed in the winter of 1998. The Post Removal Reports for Family Housing Units are available at the Depot's Information Repositories. In addition, environmental conditions on adjacent government property do not present a hazard to the transfer of the property. Table 2 - Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3) and Table 3 - Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4) provide details regarding environmental conditions for each individual parcel or building contained within this FOST.

## 5. REGULATORY/PUBLIC COORDINATION

TDEC has provided comments and has generally concurred with this FOST. TDEC comments have been resolved and incorporated. EPA has provided comments. These comments have generally been resolved and incorporated. A portion of EPA comment #3 is no longer applicable. The public comment period began on December 9, 1999 and closed on January 17, 2000. All public comments are included and addressed in Enclosure 6.

## 6. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE AND CONSISTENCY WITH LOCAL REUSE PLAN

The environmental impacts associated with proposed transfer of the property have been analyzed in accordance with the National Environmental Policy Act (NEPA). The results of this analysis have been documented in the Final Environmental Assessment for BRAC 95 Disposal and Reuse, Defense Distribution Depot Memphis, Tennessee, dated February 1998. Any encumbrances or conditions identified in such analysis as necessary to protect human health and

environment have been incorporated into the FOST. Conditions are provided in Enclosures 3, 4, and 5 while encumbrances are detailed in Enclosure 5. In addition, the proposed transfer is consistent with the intended reuse of the property set forth in the Depot Redevelopment Corporation Reuse Plan.

## 7. ENVIRONMENTAL PROTECTION PROVISIONS

On the basis of the above results from the site-specific EBS and other environmental studies and in consideration of the intended use of the property, certain terms and conditions are required for the proposed transfer. These terms and conditions are set forth in the attached Environmental Protection Provisions (Enclosure 5) and will be included in the deed.


## 8. FINDING OF SUITABILITY TO TRANSFER

Based on the above information, I have concluded that all Department of Defense (DOD) requirements to reach a Finding of Suitability to Transfer (FOST) to the Depot Redevelopment Corporation for residential use have been fully met for the property subject to the terms and conditions in the attached Environmental Protection Provision (Enclosure 5). All removal or remedial actions necessary to protect human health and the environment have been taken and the property is transferable under CERCLA Section 120(h)(3).

In addition to the Environmental Protection Provisions, the deed for this transaction will contain:

- The covenant under CERCLA 120(h)(3)(A)(ii)(I) warranting that all remedial actions under CERCLA necessary to protect human health and the environment with respect to hazardous substances remaining on the property have been taken before the date of transfer.
- The covenant under CERCLA 120(h)(3)(A)(ii)(II) warranting that any remedial action under CERCLA found to be necessary after the date of transfer with respect to such hazardous substances remaining on the property shall be conducted by the United States.
- The clause as required by CERCLA 120(h)(3)(A)(iii) granting the United States access to the property in any case in which remedial action or corrective action is found to be necessary after the date of transfer.

As required under the CERCLA Section 120(h) and DOD FOST Guidance, notification of hazardous substance activities and petroleum product activities shall be provided in the deed. Refer to Table 2 - Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3) and Table 3 - Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4).

  
P.S. MORRIS  
Colonel, GS  
Deputy Chief of Staff  
for Engineering, Housing,  
Environment and Installation  
Logistics

**7 Enclosures**

- Encl 1 Site Maps of Property
- Encl 2 Table 1 - Description of Property.
- Encl 3 Table 2 - Notification of Hazardous Substance Storage, Release or Disposal
- Encl 4 Table 3 - Notification of Petroleum Product Storage, Release or Disposal
- Encl 5 Environmental Protection Provisions
- Encl 6 Regulatory/Public Comments
- Encl 7 References



DEPARTMENT OF THE ARMY  
HEADQUARTERS, U.S. ARMY MATERIEL COMMAND  
5001 EISENHOWER AVENUE, ALEXANDRIA, VA 22333-0001

710 394

REPLY TO  
ATTENTION OF

27 JUN 1998

AMCIS-R

MEMORANDUM THRU Commander, U.S. Army Engineers Division, South Atlantic  
(CESAD-ET-R), Room 9N15, 60 Forsyth Street, S.W., Atlanta, GA 30303-8801

FOR Commander, U.S. Army Corps of Engineer, Mobile District (CESAM-RE-MM),  
P.O. Box 2288, Mobile, AL 36628-0001

SUBJECT: Base Realignment and Closure (BRAC) Disposal Support Package-2 (BDSP-2) and  
Finding of Suitability to Transfer (FOST-2) for Transfer of Property at Defense Distribution Depot  
Memphis, Tennessee (DDMT)

1. References:

a. Memorandum, DDSP-F, 23 July 01, subject: FOST #2 (Parcel #1).

b. Approved Memorandum of Agreement (MOA) among U.S. Army, Tennessee State Historic  
Preservation Officer, and Advisory Council on Historic Preservation, dated 12 Jun 98.

2. Enclosed for your action is a copy of the BDSP-2, FOST-2 and Record of Non-Applicability  
Concerning the General Conformity Rule (RONA) for the transfer of approximately 15.55 acres that  
include seven (7) buildings at DDMT.


3. Request a deed be executed in accordance with the enclosed approved documents.

4. Points of contact for this action are Mr. John Farrar, AMCIS-R, commercial (703) 617-0726,  
DSN 767-0726, and Mr. Joe Goetz, AMCIS-R, commercial (703) 617-9282, DSN 767-9282.

5. AMC -- Army READINESS Command . . . Supporting Every soldier Every Day.

FOR THE COMMANDER:

Encls  
as

  
CHRISTOPHER J. YOUNG  
COL, GS  
Deputy Chief of Staff  
for Installations

**FINDING OF SUITABILITY  
TO TRANSFER  
(POST #2)**

**Former Defense Distribution Depot Memphis, Tennessee**

**Parcel 1.1, Parcel 1.2, Parcel 1.3, Parcel 1.4, Parcel 1.5, Parcel 1.6, Parcel 1.7, Parcel  
1.8**

**May 2001**



**FINDING OF SUITABILITY TO TRANSFER #2**  
**Former Defense Distribution Depot Memphis, Tennessee**  
**Parcels 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7 and 1.8**  
**May 2001**

## **1. PURPOSE**

The purpose of this Finding Of Suitability To Transfer (FOST) is to document the environmental suitability of certain parcels or property at the former Defense Distribution Depot Memphis, Tennessee (Depot) for transfer to the Depot Redevelopment Corporation (DRC) consistent with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 120(h) and Department of Defense policy

## **2. PROPERTY DESCRIPTION**

The property consists of 15.55 acres that includes eight (8) parcels. Within these parcels are seven (7) buildings, the open land area surrounding Building 144 and two paved parking lots. The property was previously used for administrative purposes. The property is intended to be transferred for industrial reuse and is consistent with the intended reuse of the property as set forth in the DRC's Memphis Depot Redevelopment Plan. A site map of the property is attached (Enclosure 1)

## **3. ENVIRONMENTAL DOCUMENTATION**

A determination of the environmental condition of the property has been made based on the Comprehensive Environmental Response Facilitation Act (CERFA) letter to EPA dated December 5, 1997 and the Environmental Baseline Survey (EBS) dated November 6, 1996. The information provided is a result of a complete search of agency files during the development of these environmental surveys. A complete list of documents that provide information on environmental conditions of the property is attached (Enclosure 2).

## **4. ENVIRONMENTAL CONDITION OF PROPERTY**

### **4.1 Environmental Condition of Property Categories**

The Department of Defense (DOD) Environmental Condition of Property (ECP) Categories for the property is as follows:

ECP Category 1:	Parcel 1.1 – Sentry Station Building 1
	Parcel 1.2 – Sentry Station Building 2

Parcel 1.3 ~ Waiting Shelter Building 129  
 Parcel 1.4 ~ Waiting Shelter Building 139  
 Parcel 1.5 ~ Administrative Building 144  
 Parcel 1.6 ~ Security Building 145  
 Parcel 1.7 ~ Waiting Shelter Building 155 (demolished in 1999)

ECP Category 3: Parcel 1.8 – Open land area surrounding the buildings in Parcel 1, including two parking lots and grassy areas, flagpole (Building 143), switch station building (Building 147) and the antenna tower (Building 146)

A summary of the ECP Categories for specific buildings, parcels, or study areas/operable units is provided in Table 1 – Description of Property (Enclosure 3).

## **4.2 Storage, Release, or Disposal of Hazardous Substances**

### **4.2.1 Hazardous Substance Storage, Release, or Disposal**

There was no evidence of hazardous substance storage for one year or more in excess of 40 CFR Part 373 reportable quantities on the property. In addition, there was no evidence of release or disposal of hazardous substances in excess of 40 CFR 373 reportable quantities on the property. Accordingly, there is no need for any notification of any hazardous substance storage, release, or disposal activities.

### **4.2.2 Investigation/Remediation Sites**

There were environmental investigations conducted on the property. A summary of the investigations is as follows:

- Screening Site 73. The Main Installation Remedial Investigation baseline risk assessment included Screening Site 73. Pesticides were applied to the grassed areas of the property (Parcel 1.8) as part of routine grounds maintenance activities. All grassed areas on the Depot were incorporated into Screening Site 73, and the pesticide dieldrin was investigated on a Depot-wide basis. Dieldrin levels on the property were not inconsistent with unrestricted reuse; therefore, no remediation (to include institutional controls) is required on the property.

There are no other investigation/remediation sites located on the property. In addition, there is no evidence of contaminated soil or groundwater on the property. A summary of the investigation site is provided on in Table 1 – Description of Property (Enclosure 3).

## **4.3 Petroleum and Petroleum Products**

#### **4.3.1 Underground and Above-Ground Storage Tanks (UST/AST)**

There was no evidence that petroleum products were stored in underground or aboveground storage tanks on the property. Accordingly, there is no need for any notification of any UST/AST petroleum product storage, release, or disposal.

#### **4.3.2 Non-UST/AST Storage, Release, or Disposal of Petroleum Products**

There was no evidence that any petroleum or petroleum products in excess of 55 gallons at one time were stored, released, or disposed on the property as the result of non-UST/AST petroleum activities. Accordingly, there is no need for any notification of non-UST/AST petroleum product storage, release, or disposal.

#### **4.4 Polychlorinated Biphenyls (PCB) Equipment**

The following PCB containing equipment is located on the property: hermetically sealed fluorescent light bulb ballasts that may contain PCBs. This equipment is operational and has been determined not to be leaking. There is no evidence of past releases from the fluorescent light bulb ballasts on the property.

#### **4.5 Asbestos**

There is asbestos containing material in the following buildings:

- Building 1: Roof flashing. Renovation accomplished without removing original roofing system
- Building 2: Roof flashing and 12 x 12 floor tile mastic
- Building 139: Window caulk and cement kick panels
- Building 144: 9 x 9 vinyl floor tiles, 12 x 12 vinyl floor tiles, window frame putty, rolled linoleum flooring in the BX restroom, and the mastic used to install the 12x12 acoustical ceiling tiles in the basement through second floors, with the exception of the BX area
- Building 145: 12 x 12 floor tile and mastic, vibration dampers (assumed/no analysis to confirm) and gypsum board leveling compound

The ACM does not currently pose a threat to human health or the environment because all friable asbestos that posed an unacceptable risk to human health has been removed or encapsulated. The deed will include the asbestos warning and covenant included in the Environmental Protection Provisions (Enclosure 4).

#### **4.6 Lead-Based Paint (LBP)**

Based on the age of the buildings (constructed prior to 1978), all of the buildings are presumed to contain lead-based paint. The property was not used for residential purposes and the transferee does not intend to use the property for residential purposes in the future. The deed will include the lead-based paint warning and covenant provided in the Environmental Protection Provisions (Enclosure 4).

#### **4.7 Radiological Materials**

There was no evidence that any radioactive material or sources were used or stored on the property.

#### **4.8 Radon**

Radon surveys were not conducted in the buildings proposed for transfer. Radon surveys were only conducted in the military family housing units, but those results indicated that radon was not detected at or above the EPA residential action level of 4 picocuries per liter (pCi/L) in these buildings.

#### **4.9 Unexploded Ordnance**

Based on a review of existing records and available information, none of the buildings or surrounding land proposed for transfer is known to contain unexploded ordnance. The open land area surrounding the buildings in Parcel 1 was either paved for parking lots or landscaped when the Depot opened and was never used for firing or testing military munitions. The buildings proposed for transfer were used for administrative, sentry and employee transportation purposes and were not used for ammunition storage purposes.

#### **4.10 Other Hazardous Conditions**

There are no other hazardous conditions that present an unacceptable risk to human health or the environment.

### **5. ADJACENT HAZARDOUS CONDITIONS**

There are the following hazardous conditions adjacent to the property:

**Groundwater contamination.** In the Groundwater Feasibility Study (July 2000), two distinct groundwater plumes were delineated in the fluvial aquifer on the main installation (MI), one in the southwest part of the MI and one in the southeast portion. The groundwater contaminants of concern are PCE and TCE. The selected groundwater remedy at the MI is enhanced bioremediation, which includes institutional controls and long-term monitoring.

These conditions do not make the property proposed for transfer unsuitable to transfer because the groundwater is currently not used as potable water and city and county zoning restricts use of the groundwater. In addition, the ground water hydrology is such that the adjacent contamination will not migrate to the property (Enclosure 6). The fluvial aquifer lies at a depth of 80 to 100 ft below ground surface and is believed to have been impacted by Depot operations. The groundwater plume located on the southeast portion of the MI is located down gradient of Parcel 1. Groundwater flows from northeast to southwest on this portion of the MI, away from Parcel 1, towards the center of the MI. Groundwater flow on the southwest portion of the MI flows from southwest to northeast, towards the center on the MI. Groundwater flow in the center portion of the MI appears to flow to the south.

## **6. ENVIRONMENTAL AGREEMENTS**

The following environmental orders/agreements are applicable to the property: Federal Facilities Agreement (FFA) among the Defense Logistics Agency, the Tennessee Department of Environment and Conservation (TDEC) and the Environmental Protection Agency, Region IV and Main Installation Record of Decision. The deed will include a provision reserving the Government's right to conduct remediation activities (See Enclosure 4).

## **7. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE AND CONSISTENCY WITH LOCAL REUSE PLAN**

The environmental impacts associated with proposed transfer of the property have been analyzed in accordance with the National Environmental Policy Act (NEPA). The results of this analysis have been documented in the Final Environmental Assessment for BRAC 95 Disposal and Reuse of Defense Distribution Depot Memphis, Tennessee. Any encumbrances or condition identified in such analysis as necessary to protect human health or the environment have been incorporated into the FOST.


## **8. REGULATORY/PUBLIC COORDINATION**

The U.S. EPA Region IV, the Tennessee Department of Environment and Conservation, and the public were notified of the initiation of the FOST. Regulatory and public comments received during the FOST development were reviewed and incorporated as appropriate. All regulatory comments were resolved. A copy of the regulatory/public comments is included in the FOST (Enclosure 5).

## **9. FINDINGS OF SUITABILITY TO TRANSFER**

Based on the above information, I conclude that all removal or remedial actions necessary to protect human health and the environment have been taken and the property is transferable under CERCLA section 120(h)(3). In addition, all Department of Defense requirements to reach a finding of suitability to transfer have been met subject to the terms

and conditions set forth in the attached Environmental Protection Provisions (Enclosure 4), which shall be included in the deed for the property. The Environmental Protection Provisions also include the CERCLA 120(b)(3) covenant and access provisions.

  
CHRISTOPHER J. YOUNG  
COL, GS  
Deputy Chief of Staff for Installations

**6 Enclosures**

**Encl 1 Site Map of Property**

**Encl 2 Environmental Documentation**

**Encl 3 Table 1 - Description of Property**

**Encl 4 Environmental Protection Provisions/Deed Restrictions**

**Encl 5 Regulatory/Public Comments**

**Encl 6 Groundwater Flow Directions Map**

**TABLE E-1**  
**ASBESTOS IDENTIFICATION SURVEY RESULTS**

SUBPARCEL	BUILDING	FACILITY USE	YEAR CONSTRUCTED	RESULTS
1 4	139	Bus Stop/Waiting Shelter	1959	A
1 5	144	Office Space	1942	A
1 8	145	Main Security Office	1943	A
1 8	147	Switch Gear Station	1981	N
1 7	155	DEMOLISHED	1960	NA
2 1	176	Military Family Housing	1948	A
2 2	178	Garage	1948	A
2 3	179	Military Family Housing	1948	A
2 4	181	Military Family Housing	1948	A
2 5	183	Garage	1948	A
2 6	184	Military Family Housing	1948	A
3 5	194	Pool Pump House	1948	N
3 2	195	Golf Clubhouse	1949	A
3 3	196	Office Space	1952	A
3 5	197	Golf Cart Shed	1959	N
3 4	198	Cooler Shed	1959	A
14 2	209	DEMOLISHED	1942	NA
13 4	210	Warehouse/Office Space	1942	A
13 5	211	Generator/Uninterrupted Power Supply	1988	N
8 2	229	Warehouse Space	1942	A
8 3	230	Warehouse Space	1942	A
7 2	249	Warehouse Space	1942	A
6 2	250	Warehouse Space	1942	A
4 12	251	DEMOLISHED	1942	NA
4 1	252	DEMOLISHED	1942	NA
4 11	253	DEMOLISHED	1952	NA
4 6	254	DEMOLISHED	1944	NA
4 7	257	DEMOLISHED	1942	NA
4 4	260	Paint Shop	1952	A
4 8	263	Garage	1964	N
4 13	265	Shop Building	1942	A
4 9	267	DEMOLISHED	NA	NA
4 2	270	Engineering	1945	A
4 3	271	Former Golf Pro Shop	1958	A
5 1	272	Lumber Shed	1942	N
5 2	274	Cafeteria	1989	A
5	275	DEMOLISHED	NA	NA
15 6	304	Electric Switchgear	NI	N

TABLE E-1

710 403

## ASBESTOS IDENTIFICATION SURVEY RESULTS

SUBPARCEL	BUILDING	FACILITY USE	YEAR CONSTRUCTED	RESULTS
15 2	308	Warehouse/Storage	1944	A
15 6	309	Warehouse/Storage	1944	A
15 3	319	Warehouse/Storage	1942	A
8 4	329	Warehouse Space	1942	A
8 5	330	Warehouse Space	1942	A
6 3	349	Warehouse Space	1942	A
6 4	350	Warehouse Space	1942	A
17 3	359	DEMOLISHED	1942	NA
3 5	398	Restroom	1962	A
15 6	T416	DEMOLISHED	1943	NA
15 6	T417	DEMOLISHED	1943	NA
9 2	429	Warehouse Space	1942	A
9 3	430	Warehouse Space	1942	A
9 4	449	Warehouse Space	1942	A
9 5	450	Warehouse Space	1942	A
19 2	465	Forklift Wash Rack (Shop Building)	1984	N
19 1	468	Warehouse/Storage	1960	N
19 3	469	Maintenance Shop	1960	N
20 3	470	Warehouse Space	1954	A
20 4	489	Warehouse Space	1954	A
21 2	490	Warehouse Space	1954	A
11 2	529	Warehouse Space	1942	A
11 3	530	Warehouse Space	1942	A
10 4	549	Warehouse Space	1942	A
10 5	550	Warehouse Space	1942	A
16 2	559	DEMOLISHED	1942	NA
18 1	560	Warehouse Space	1990	N
12 2	629	Warehouse Space	1942	A
11 4	630	Warehouse Space	1942	A
10 1	649	Warehouse Space	1953	A
10 6	650	Warehouse Space	1942	A
20 2	670	Warehouse Space	1953	A
21 4	685	Shipping Office	1985	A
21 3	689	Warehouse Space	1953	A
21 1	690	Warehouse/Shipping	1953	A
15 4	702	DEMOLISHED	NA	NA
15 6	717	Ice House/Public Restroom	1951	A
33 9	720	Maintenance Shop	1942	A
33 9	737	Pesticide Storage	1961	A



**TABLE E-1**  
**ASBESTOS IDENTIFICATION SURVEY RESULTS**

SUBPARCEL	BUILDING	FACILITY USE	YEAR CONSTRUCTED	RESULTS
33 10	753	Fire Pump House	1956	A
33 3	755	San Sewer Pump Station	1953	A
33 4	756	Fire Pump House	NI	A
24 3	770	Base Maintenance Shop	1952	A
24 3	771	Restroom/Storage Space	1945	A
23 7	783	DEMOLISHED	1942	NA
23 3	787	DEMOLISHED	1988	NA
23 8	793	Underground Bunker (Shop Space)	1942	N
23	795	Gate B Guard Shelter	1974	N
29 2	801	FE Storage Shop	1956	A
29 2	802	Waiting Shelter	1981	N
32 2	835	Hazardous Materials Warehouse	1988	N
33 5	860	DEMOLISHED	1944	NA
33 8	863	DEMOLISHED	1943	NA
32 3	865	Hazardous Recoup Facility	1988	N
25 1	873	DEMOLISHED	1942	NA
25 2	875	DEMOLISHED	1942	NA
26 2	970	Open Storage	1942	A
27 2	972	Open Storage	1942	A
35 2	1084	DEMOLISHED	1953	NA
35 2	1085	Abandoned Concrete Grease Rack	NI	N
35 3	1086	Paint Shed	1959	N
35 4	1087	Paint Booth	1952	A
35 4	1088	Sand Blasting Shed	1953	N
35 1	1090	Paint Storage Warehouse	1952	A
35 5	1091	Paint Storage Warehouse	1953	A
36 14	1184	Storage Building	1956	N
36 14	1185	Firing Range	NI	N
1 1	1	Guard Station	1959	A
1 2	2	Guard Station	1958	A
23 1	7	Guard Station	NI	N
23 2	8	Guard Station	1969	A
29 1	9	Communication/ Restroom	1946	A
15 1	15	Guard Station	1979	A
14 1	22	Guard Station	1942	A
13 1	23	Guard Station	1942	A
13 2	24	Guard Station	1961	N
13 3	25	Guard Station	1961	N

**TABLE E-1**  
**ASBESTOS IDENTIFICATION SURVEY RESULTS**

SUBPARCEL	BUILDING	FACILITY USE	YEAR CONSTRUCTED	RESULTS
<b>Buildings not included in the Asbestos Identification Survey</b>				
1 3	129	Waiting Shelter	1980	A(P)
4 7	256	DEMOLISHED	1943	NA
4 5	261	Vehicle Storage	1994	A(P)
4 10	273	Shed	1942	A(P)
34 1	360	Warehouse	1996	A(P)
17.2 (moved to 30 5)	459	Portable Building	1990	NA
19 1	467	DEMOLISHED	1987	NA
25 2	874	Sewage Pump Station	1949	A(P)
30 4	949	Portable Storage Structure	1987	NA
23 5	995	Metal Handling	1985	NA
28 2	1089	General Purpose Warehouse	1960	A(P)

**Notes**

A ACM test results positive

A(P) ACM possible based on the year of construction

ACM Asbestos-containing materials

N Negative Building surveyed for ACM If suspect materials were found, ACM test results were negative or less than 1%, no further action required

NA Not applicable (Building was built after survey or has been demolished since survey)

# ADMINISTRATIVE RECORD INDEX

Document	Year	Author
Installation Assessment of Defense Depot Memphis, Tennessee Report No 191	1981	U S Army Toxic and Hazardous Materials Agency
Geohydrologic Study No 38-26-0195-83	1982	U S Army Environmental Hygiene Agency
Environmental Audit No 43-21-1387-86	1985	U S Army Environmental Hygiene Agency
Water Quality Biological Study No 32-0733-86, Investigation of Fire Reservoir	1986	U S Army Environmental Hygiene Agency
Ground Water Consultation No 38-26-0815-87, Collection and Analysis of Ground Water Samples	1986	U S Army Environmental Hygiene Agency
Summary Report, On-Site Remedial Activities at the Defense Depot Memphis	1995	O H Materials Company
Remedial Investigation Final Report and Appendices	1990	Law Environmental, Inc
Feasibility Study Final Report Law Environmental, Inc	1990	Law Environmental, Inc
Pumping Test Technical Memorandum	1992	Engineering-Science, Inc
Final Focused Feasibility Study Dunn Field	1994	Engineering-Science, Inc
Environmental Assessment, Removal Action for Groundwater	1994	Engineering-Science, Inc
Final Proposed Groundwater Action Plan	1994	CH2M Hill
Groundwater Monitoring Results Report for Defense Depot Memphis, Tennessee, Volumes 1 through 9	1994	Environmental Science & Engineering Inc
Record of Decision Interim Remedial Action for Groundwater at Dunn Field	1994	U S Army Corps of Engineers and CH2M Hill
Ordnance and Explosive Waste Chemical Warfare Materials, Archives Search Report for Memphis Defense Depot	1995	U S Army Corps of Engineers - St Louis
Federal Facilities Agreement	1995	Environmental Protection Agency, Tennessee Department of Environment and Conservation, and Defense Depot Memphis, Tennessee
Sediment Sampling Analysis Report	1996	U S Army Space and Strategic Defense Command
Record of Decision for Interim Remedial Action of the Groundwater at Dunn Field (OU-1) at the Defense Distribution Depot Memphis, Tennessee	1996	U S Army Corps of Engineers and CH2M Hill
Concurrence Letters for the Record of Decision on the Interim Remedial Action for Groundwater at Dunn Field	1996	Environmental Protection Agency and the Tennessee Department of Environment and Conservation

# ADMINISTRATIVE RECORD INDEX

Document	Year	Author
Interim Remedial Action for Groundwater at Dunn Field	1996	U S Army Corps of Engineers and CH2M Hill
Environmental Baseline Survey	1996	Woodward-Clyde, Inc
BRAC Cleanup Team (BCT) Meeting Minutes	1996 until Present	Memphis Depot Caretaker and CH2M Hill
Quarterly Groundwater Monitoring Report, Second and Third Quarters 1997	1997	U S Army Corps of Engineers and CH2M Hill
Final Groundwater Characterization Data Report	1997	U S Army Corps of Engineers and CH2M Hill
Termination Radiological Survey for Defense Distribution Depot Memphis, Building 319, Bay 6	1997	Defense Distribution Center Radiological Health Group, Safety and Occupational Health Office
Groundwater Monitoring Report	1998	U S Army Corps of Engineers and CH2M Hill
Revised BRAC Parcel Summary Reports	1998	U S Army Corps of Engineers and CH2M Hill
Final Background Sampling Program Report	1998	U S Army Corps of Engineers and CH2M Hill
Final Preliminary Risk Evaluation	1998	U S Army Corps of Engineers and CH2M Hill
Final Remedial Investigation Sites Letter Reports	1998	U S Army Corps of Engineers and CH2M Hill
Final Screening Sites Letter Reports	1998	U S Army Corps of Engineers and CH2M Hill
Final Field Sampling Plan Addendum for Operable Units 2, 3 and 4	1998	U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill
Final Field Sampling Plan Addendum for Operable Unit 1	1999	U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill
Final Baseline Risk Assessment for Golf Course Impoundments	1999	U S Army Corps of Engineers and Radian International
Final Streamlined Risk Assessment Parcel 3 Technical Memorandum	1999	U S Army Corps of Engineers and CH2M Hill
Post Removal Report Contaminated Soil Remediation Family Housing Area, Memphis Depot, Tennessee, Volumes I and II	1999	U S Army Corps of Engineers Mobile and OHM/IT Remediation Services Inc.
Post Removal Report Contaminated Soil Remediation Cafeteria Building, Memphis Depot, Tennessee	1999	U S Army Corps of Engineers Mobile and OHM/IT Remediation Services Inc.

# ADMINISTRATIVE RECORD INDEX

Document	Year	Author
Final Engineering Evaluation and Cost Analysis (EE/CA), Old Paint Shop and Maintenance Area, Parcels 35 and 28	1999	U S Army Engineering Support Center Huntsville and CH2M Hill
Final Engineering Evaluation and Cost Analysis (EE/CA) for the Removal of Chemical Warfare Materiel, Former Defense Distribution Depot Memphis, Tennessee and Addendum 1	1999	U S Army Corps of Engineers Mobile and Parsons Environmental Science, Inc
Final Community Relations Plan for the Memphis Depot	1999	Memphis Depot Caretaker and Frontline Corporate Communications
Interim Remedial Action Groundwater Extraction System, Project Documentation, Volumes I and II	1999	Memphis Depot Caretaker, U S Army Corps of Engineers Mobile District and OHM Remediation Services Corp
Action Memorandum for Removal Action at Parcels 35 and 28	1999	Memphis Depot Caretaker, U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill
Action Memorandum for Removal of Chemical Warfare Materiel, Parcel 36	2000	Memphis Depot Caretaker, U S Army Engineering and Support Center Huntsville, AL, and Parsons Environmental Science, Inc
Final Main Installation Remedial Investigation Report, Volumes I through IV	2000	U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill
Remedial Field Sampling Plan Addendum II for Dunn Field	2000	U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill
Final Main Installation Feasibility Study for Groundwater	2000	U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill
Final Main Installation Feasibility Study for Soils	2000	U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill
Final Main Installation Proposed Plan	2000	U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill
Remediation Report, Removal Action in Parcels 28 and 35 (Old Paint Shop and Maintenance Area)	2000	U S Army Corps of Engineers, Mobile, AL, and Jacobs/Sverdrup Engineering Group
Annual Operations Report, Groundwater Interim Remedial Action, Dunn Field	2000	U S Army Corps of Engineers, Mobile, AL, and OHM Remediation Services Corp
Quarterly Groundwater Quality Report, Groundwater Interim Remedial Action,	2000	U S Army Corps of Engineers, Mobile, AL, and

# ADMINISTRATIVE RECORD INDEX

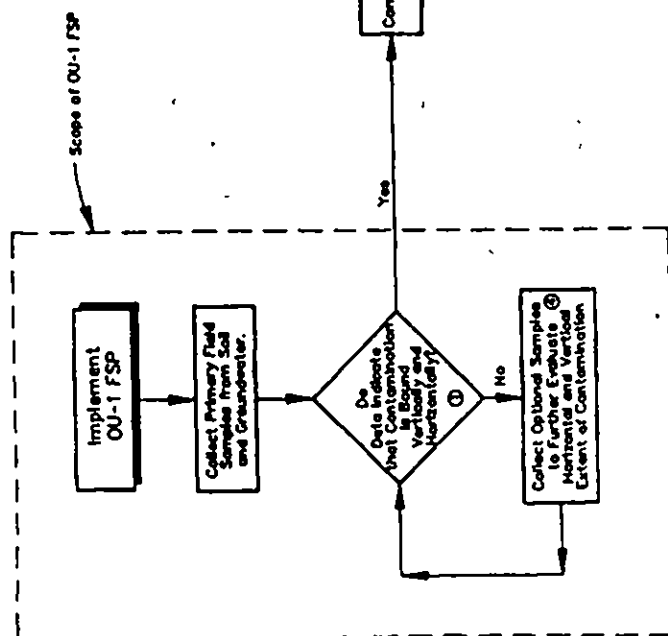
Document	Year	Author
Dunn Field (Year Two, Quarters One, Two, and Three)		Jacobs/Sverdrup Engineering Group and IT
Final Main Installation Record of Decision	2001	U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill
Data Collection Plan for Long-Term Operational Areas (LTOAs), Main Installation	2001	U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill
Well Construction and Sampling Techniques for LTOA Monitoring Wells Associated with SS42/SS43, NE6 (Building T702) and SS80	2001	U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill
Soil Vapor Extraction Treatability Study Work Plan	2001	U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill
Decontamination and Closure of Permitted Container Storage Facility (Building 308) and Removal of Lead Impacted Soil at Building 949	2001	U S Army Corps of Engineers, Mobile, AL, and Jacobs Engineering Group
Decontamination Report and Certification for Closure of Permitted Container Storage Facility (Building T308)	2001	U S Army Corps of Engineers, Mobile, AL, and Jacobs Engineering Group
Final Report Chemical Warfare Materiel Investigation and Removal Action at Defense Depot Dunn Field	2001	U S Army Engineering and Support Center Huntsville, AL, and UXB International
Annual Operation and Maintenance Summary Report for Year 2000, Groundwater Interim Remedial Action, Dunn Field	2001	U S Army Corps of Engineers, Mobile, AL, and Jacobs Engineering Group
Semi-Annual Groundwater Quality Report Groundwater Interim Remedial Action, Dunn Field (Year Three, First Half)	2001	U S Army Corps of Engineers, Mobile, AL, and Jacobs Engineering Group
Dunn Field Remedial Investigation Report, Rev 2	2002	U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill
Main Installation Remedial Design Workplan, Rev 2	2002	U S Army Engineering and Support Center Huntsville, AL, and CH2M Hill

# Acronyms

DOOs - Data Quality Objectives  
 TSOs - Tennessee Soil Cleanup Levels  
 RHBC - Region III Health Based Criteria  
 GWPC - Groundwater Protection Criteria  
 FBL - Field-Based Laboratory  
 FSP - Field Sampling Plan  
 FRL - Field Remediation Level  
 PRG - Preliminary Remediation Goal  
 IRA - Interim Remedial Action  
 RAL - Remedial Action Level  
 FS - Feasibility Study

## DOOs

- o Collect the specified samples for each exposure pathway (site specific) to conduct a statistically based comparison to PRGs and FRLs.
- o Use Level 2 (field & lab) data to collect data quickly and economically.
- o Use Level 3 FBL data to confirm results of Level 2 data.
- o Characterize horizontal and vertical extent of contamination.



## NOTES:

- The bounds of contamination refer to the extent of contamination equal to or less than background and/or PRGs.
- Background data set will be established by using criteria identified in the RI/FS WP. Comparison criteria are developed using TSOs, RHBC and GWPC and other applicable regulatory criteria. These criteria are used as PRGs based on a conservative approach from the standpoint of risk (exposure and assessment criteria). Section 3 of this FSP discusses the comparison criteria. Statistical comparison will be limited by the amount of data collected during the field investigation.
- The RALs will be established based on acute criteria of risks and economic factors.
- Optional work will not be initiated without prior approval of CEHND. Optional samples will be collected only after a field charge request form is signed by CEHND.

FIGURE 3-1

OU-1 LOGIC DIAGRAM

Defense Depot Memphis, Tennessee

**CAAE**

IN REPLY  
REFER TO

DEFENSE LOGISTICS AGENCY  
HEADQUARTERS  
8725 JOHN J. KINGMAN ROAD, SUITE 2533  
FORT BELVOIR, VIRGINIA 22060-6221

WP

[illegible]

MEMORANDUM FOR COMMANDERS, INVENTORY CONTROL POINTS  
COMMANDERS, SERVICE CENTERS  
COMMANDER, DEFENSE DISTRIBUTION CENTER  
COMMANDERS, DEFENSE CONTRACT MANAGEMENT  
DISTRICTS  
COMMANDER, DLA EUROPE  
COMMANDER, DLA PACIFIC  
ADMINISTRATOR, DEFENSE AUTOMATED PRINTING AND  
SUPPORT CENTER  
DLA EXECUTIVE TEAM

**SUBJECT: DLA Compliance with Executive Order 12898 on Environmental Justice**

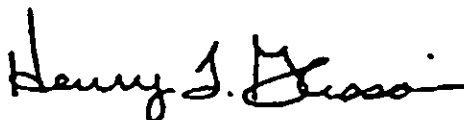
Presidential Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations, directs Federal agencies to consider "disproportionate impacts on minority and low-income groups." My policy is to act in an open and fair manner when considering an action that may impact human health and the environment. While it does not create any new rights for specific individuals or groups, I expect DLA managers and commanders to review proposed actions to identify disproportionately high adverse impacts on minority and low-income populations. If you determine these will occur, mitigating measures may be necessary to reduce the impacts of those actions.

DLAR 1000.22, Environmental Considerations of DLA Actions in the United States, contains guidance on assessing the impacts of your actions on human health and the environment. Environmental Assessments (EA) and Environmental Impact Statements (EIS) are the documents we generate to identify adverse impacts to human health and the environment and appropriate mitigating measures. Where practical and appropriate, you must gather data to assess impacts on minority and low-income populations. This will allow you to evaluate that information, along with all other considerations, when deciding on a course of action. I expect you to apply your individual judgment, with the assistance of environmental and legal professionals, to reach a case-specific solution.

I also want you to ensure there is sufficient dialog with potentially impacted groups during the scoping process (outlined in DLAR 1000.22) when preparing environmental documents. For actions such as environmental restoration where preparation of an environmental document is not required, other forums may be used such as Restoration Advisory Boards, Technical Review Committees, public notices in local papers, meetings with PTA and church groups, community leaders, etc. This will assure that you have the input you need to make an informed decision.



Please make sure we execute our environmental and public health responsibilities in a manner which is fair, open, unbiased, and fully consistent with the President's direction. Contact Mr. Dennis Lillo, Director, Environmental Quality, CAAE, at DSN 427-6241, or Col Frank Esposito, Associate General Counsel for Environment, GC, at DSN 427-6079 for any additional information regarding the DLA environmental justice policy.



HENRY T. GLISSON  
Lieutenant General, USA  
Director



*H file*

710 413

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

345 COURTLAND STREET, N.E.  
ATLANTA, GEORGIA 30365  
March 13, 1997

4WD-FFB

Certified Mail

Return Receipt Requested

Colonel Michael J. Kennedy, Commander  
Defense Distribution Depot Memphis  
2163 Airways Boulevard  
Memphis, Tennessee 38114-5210

SUBJ: Concurrence on CERFA Uncontaminated Parcels  
Defense Distribution Depot Memphis, Tennessee (DDMT)

Dear Col. Kennedy:

Under CERFA (Public Law 102-426), federal agencies are required to expeditiously identify real property that can be immediately reused and redeveloped. Satisfying this objective requires the identification of real property where no hazardous substances or petroleum products were released or disposed. At National Priorities List sites such as DDMT, the U.S. Environmental Protection Agency (EPA) must concur with such determinations.

EPA Region IV has reviewed the determination of uncontaminated parcels at DDMT as detailed in your letter of December 5, 1996 and the Environmental Baseline Survey (final revisions received by EPA December 20, 1996). EPA concurs that the following (BRAC) parcels are uncontaminated (qualified or unqualified) and ready for immediate reuse: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1, 3.3, 3.4, 4.1, 4.2, 4.3, 13.1, 13.2, 13.3, 14.1, 15.1, 17.1, 23.1, 23.2, 23.3, 23.4, 23.5, 29.1, 33.1, 33.2, 33.3, 33.4, 33.5, and 34.1.

EPA does not concur with the determination that Parcel 3.2 (Building 195) is uncontaminated because of the evidence, at that location, of groundwater contamination at levels above background and ARARs.

If you have any questions please contact me at 404.562.8552.

Sincerely,

Dann Spariosu, Ph.D  
Remedial Project Manager



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

710 414



October 20, 1998

4WD-FFB

Mr. Shawn Phillips  
BRAC Environmental Coordinator  
Defense Distribution Center Memphis  
2163 Airways Blvd.  
Memphis, TN 38114 - 5210

SUBJECT: Concurrence with CERFA Category 1 Properties.

Dear Mr. Phillips:

The United States Environmental Protection Agency (USEPA), Region 4, has reviewed the CERFA Letter Report from the Defense Depot Memphis Tennessee (DDMT) dated July 28, 1998. Based on the information presented in Table 2a, and at your request, the USEPA hereby concurs with the designations as proposed.

If you have any questions, please call me at 404/562-8553.

Sincerely yours,

Wm. Turpin Ballard, CHMM  
Remedial Project Manager

cc: file

File:

D.C. 660.420

710 415



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

April 16, 1999

Docket No. 030-33261  
Control No. 125947

License No. 37-30062-01

Phyllis Campbell  
Deputy Commander  
Defense Logistics Agency  
Defense Distribution Center  
2001 Mission Drive  
New Cumberland, PA 17070-5000

Dear Deputy Commander Campbell:

This refers to your license amendment request. Enclosed with this letter is the amended license. The facility at Defense Distribution Depot Memphis, Tennessee may be released for unrestricted use.

Please review the enclosed document carefully and be sure that you understand and fully implement all the conditions incorporated into the amended license. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region I Office, Licensing Assistance Team, (610) 337-5093 or 5239, so that we can provide appropriate corrections and answers.

Thank you for your cooperation.

Sincerely,

Pamela J. Henderson  
Nuclear Materials Safety Branch 2  
Division of Nuclear Materials Safety

Enclosure:  
Amendment No. 5

cc:  
Allen Hilsmeier, Radiation Safety Officer



DEFENSE LOGISTICS AGENCY  
DEFENSE DISTRIBUTION CENTER  
2001 MISSION DRIVE  
NEW CUMBERLAND, PA 17070-5000

710 416

Mike  
Dobbs  
DDC-TW

PLY  
FER TO

DDC-AH

received  
AUG 20 1998

Ms Pamela J. Henderson  
Nuclear Materials Safety Branch 2  
Division of Nuclear Materials Safety  
Nuclear Regulatory Commission, Region I  
475 Allendale Road  
King of Prussia, PA 19406-1415

Dear Ms Henderson:

Reference our March 6, 1997 memorandum that provided notification of our intent to conduct a termination radiological survey at the Defense Distribution Depot Memphis, TN (DDMT). Forwarded herewith are the radiological survey reports recommending that DDMT be released for unrestricted use.

All radiological activities have ceased and no radioactive material is on the premises at DDMT. We request that DDMT be removed from the Defense Distribution Center (formerly the Defense Distribution Region East) license 37-30062-01.

Point of contact for any additional information is Mr. Allen Hilsmeier, Radiation Safety Officer, (717) 770-4762, e-mail: [ahilsmeier@ddc.dla.mil](mailto:ahilsmeier@ddc.dla.mil).

Sincerely,



PAUL OKUM  
Director of Administration

Enclosures:

cc:  
CAA EH  
DDMT-D  
DDC-T(BRAC)

**DEFENSE DISTRIBUTION CENTER**

**TERMINATION RADIOLOGICAL SURVEY  
FOR  
DEFENSE DISTRIBUTION DEPOT MEMPHIS  
BUILDING 319, BAY 6**

**RADIOLOGICAL HEALTH GROUP  
SAFETY & OCCUPATIONAL HEALTH OFFICE  
DIRECTOR OF ADMINISTRATION**

**SURVEY CONDUCTED  
APRIL 7-11, 1997**

## EXECUTIVE SUMMARY

This document encompasses a historical search, the sampling protocol to conduct a termination radiological survey and the survey results for Building 319, Bay 6, at the Defense Distribution Depot Memphis, Tennessee (DDMT). The historical search involved discussions with key persons who were directly knowledgeable of the past radiological operations at DDMT. The radiological survey protocol was developed utilizing the guidance contained in reference 1, Appendix A. The survey results indicate that Building 319 can be released for unrestricted use.

The historical review of radiological activities at DDMT revealed that lantern mantles that contain naturally occurring radioactive thorium were primarily stored in Bay 6, Building 319. Discussion with current and former radiation protection officers and employees did not indicate any destruction of the mantles or contamination of any facility surfaces or the environment. A radiological environmental baseline study conducted at DDMT in August 1996 (see Appendix A, reference 4), concluded that all facilities could be released for unrestricted use with the exception of Building 319, Bay 6. The baseline data indicated that Building 319 had several wall surfaces with alpha radiation above the alpha background radiation level. The report recommended that additional characterization be performed to determine the cause of the slightly elevated alpha radiation in the facility.

The characterization study was completed on April 11, 1997. This report provides the data analysis of the study which concludes that the higher levels of alpha radiation are a result of naturally occurring radioactivity in pre-cast concrete.

## BACKGROUND

This characterization survey report is a continuation of the Environmental Baseline Study referenced in Appendix A. This Environmental Baseline Study identified a slight but elevated amount of alpha radiation on the South wall in Bay 6, Building 319. The study indicated that the alpha radiation level exceeded release criteria specified in Appendix A, reference 2, but was well below the release criteria specified in Appendix A, reference 3.

Reference 2 in the Study, Table B-1, specified a surface concentration limit of 114 dpm/100 cm<sup>2</sup> for Thorium 232 (Th-232) in equilibrium with its daughter products for unrestricted release of a building. This value corresponds to a dose rate for building occupancy of 3 mRem/year. The dose rate value has subsequently been superseded by a value of 25 mRem/year (Appendix A, reference 6). This new value corresponds to a surface concentration release limit of about 950 dpm/100 cm<sup>2</sup>, which is essentially the same limit that NRC adopted in their release criteria stated in reference 3, Appendix A, i.e., 1000 dpm/100 cm<sup>2</sup>.

The walls for Building 319 were pre-formed and then layered into place. The concrete sections are about 8 inches wide and 8 feet long. Natural background radioactivity in the concrete could vary if the ingredients came from different geographical locations. To test this potentiality, radiation measurements were taken on an exterior wall where no contamination could have occurred. Elevated alpha radiation readings were recorded at isolated spots which were similar to

the readings inside the building. Further, wipe tests on surfaces indicated that the radioactive material (RAM) was not removable. Reference 7, Appendix A, stated that Tennessee has a significantly higher Uranium concentration than most of the United States, i.e., 50-80 parts per million (ppm) to 1-2 ppm, respectively.

No maintenance work took place at DDMT that may have involved the alteration or destruction of RAM from the time of manufacture. Also, no repackaging or unwrapping of RAM occurred. Based upon this background information, DDC determined that Building 319 would be classified as an unaffected area as described in reference 1, Appendix A.

## **SITE DESCRIPTION**

Persons interviewed stated that Building 319, Bay 6 was primarily used to store lantern mantles but watches, electron tubes, smoke detectors and toggle switches were also stored in the facility. They stated that most items were stored in the Southeast corner which prompted biased sampling to take place there. One interviewee stated that lantern mantles at one time were stored throughout the bay. The East wall was believed to be installed sometime after RAM was already being stored. Furthermore, there was evidence that a wall was originally installed on the West side between Bays 6 and 7 but is now removed. Epoxy material was applied over the floor at some time after the RAM was present and probably after the RAM had been removed from the facility for subsequent storage of hazardous chemicals.

## **HISTORICAL REVIEW**

The historical review of Building 319 operations involving RAM indicated that NRC generally licensed and license exempt radioactive sources were stored in the building. Interviews were documented in Appendix A, reference 4. Interviewees stated that radiation surveys had not been conducted in the past.

## **TRAINING**

The persons performing this survey were trained on the use of the instrumentation and the procedures to follow during the survey prior to beginning work. The DDC Health Physicist was responsible overall for the accuracy and adequacy of the data. He was assisted by the DDMT RPO.

## **SURVEY PROCEDURES**

### **OVERVIEW**



Building 319, Bay 6, was treated as an unaffected area as defined in NUREG-5849. It was considered a single survey unit. After the slightly elevated alpha radiation measurements were observed during the environmental baseline study, the bay was reevaluated to determine if it should be reclassified to an affected area. The characterization data supported the position that the radioactive material was within the concrete walls and the bay could be treated as an unaffected area.

Stationary measurements were taken in the facility using a "box and X" pattern, i.e., 5 measurements were taken in each 1 square meter grid "box." Measurements were taken in each grid corner and in the center of the grid. For floor measurements, at least a 100 square centimeter area was sanded before the alpha/beta survey meter was placed on the surface. A gamma radiation scan was also made over the surface of the grid as recommended in reference 1, Appendix A.

Alpha radiation measurements were conducted using two techniques. Wall surfaces where the alpha radiation exceeded 3 times background as determined by the audio and ratemeter response, were counted for 1 minute using an integrated count. This type of measurement improved the Minimum Detectable Activity (MDA) and accuracy. Surfaces that indicated only background radiation were counted over at least 2 time constants, i.e., 8 seconds, in the ratemeter mode to expedite the survey. The MDA was higher but still below acceptable limits by a factor of 10.

Beta radiation measurements were conducted by using the ratemeter mode of the survey meter. The size of the detector, i.e., 100 cm<sup>2</sup>, provided an optimum MDA. Surfaces that indicated only background radiation were counted over at least 2 time constants, i.e., 8 seconds, in the ratemeter mode to expedite the survey.

Gamma radiation measurements were conducted by using the audio response and reading the meter of the survey meter. Readings were taken on contact with the surface and at one meter. A scan was also made of floor and wall surfaces. Particular attention was given to cracks in surfaces.

The guideline values specified in reference 3, Appendix A, could be observed using the instrumentation described below. Each instrument's MDA for various surfaces are provided in the Instrumentation Section.

Wipe tests were taken throughout the facility. Each alpha/beta-gamma wipe test was conducted by taking a 1.75 inch diameter filter paper and wiping about a 10 inch surface in an 'S' pattern. This test resulted in an area wiped of about 100 cm<sup>2</sup>. These wipe tests were counted in a scaler capable of measuring both alpha and medium energy beta radiation.

## **INSTRUMENTATION**

Instrumentation used for the surveys included a zinc sulfide scintillator for alpha detection, a plastic scintillator for beta detection and a sodium iodide crystal for gamma detection. Each instrument underwent standard quality assurance checks such as a daily source check, background

and efficiency determinations, establishment of a MDA and a flag value. Instruments were calibrated by a certified U.S. Army calibration facility on a six month basis.

Specific information on the types of instruments used are:

I. Fixed Contamination:

- a. Alpha Radiation Ludlum Survey Meter, Model 2224, Serial Number 125598  
 Ludlum Detector, Model 43-89, Serial Number 134011  
 Calibration Date January 22, 1997  
 Background at site  
     Floor 11 dpm/ 100 cm<sup>2</sup>, (2.0 CPM)  
     Inner Concrete Block Wall 13 dpm/ 100 cm<sup>2</sup>, (2.3 CPM)  
     Pre-Cast Concrete Wall 35 dpm/ 100 cm<sup>2</sup>, (6.25 CPM)  
     Tile Wall 21 dpm/ 100 cm<sup>2</sup>, (3.8 CPM)  
 Efficiency 18 % for Th-230  
 Detector surface area 100 cm<sup>2</sup>  
 MDA  
     Floor 100 dpm/ 100 cm<sup>2</sup>  
     Inner Concrete Block Wall 107 dpm/ 100 cm<sup>2</sup>  
     Pre-Cast Concrete Wall 80 dpm/ 100 cm<sup>2</sup>  
     Tile Wall 138 dpm/ 100 cm<sup>2</sup>
- b. Beta Radiation Ludlum Survey Meter, Model 2224, Serial Number 125598  
 Ludlum Detector, Model 43-89, Serial Number 134011  
 Calibration Date January 22, 1997  
 Background at site  
     Floor 2,071 dpm/ 100 cm<sup>2</sup> (290 CPM)  
     Inner Wall 1,628 dpm/ 100 cm<sup>2</sup> (228 CPM)  
     Concrete Wall 1,614 dpm/ 100 cm<sup>2</sup> (226 CPM)  
     Tile Wall 3,745 dpm/ 100 cm<sup>2</sup> (524 CPM)  
 Efficiency 14 % for Tc-99  
 Detector surface area 100 cm<sup>2</sup>  
 MDA  
     Floor 1,550 dpm/ 100 cm<sup>2</sup>  
     Inner Wall 1375 dpm/ 100 cm<sup>2</sup>  
     Concrete Wall 519 dpm/ 100 cm<sup>2</sup>  
     Tile Wall 2,085 dpm/ 100 cm<sup>2</sup>
- c. Gamma Radiation Ludlum Survey Meter, Model 19, Serial Number 104568  
 Ludlum Detector, Model 19, Internal Mounted  
 Calibration Date January 22, 1997  
 Background at site

Floor Surface 6 uRem/hr; 1 Meter 6 uRem/hr  
Inner Wall Surface 6 uRem/hr; 1 Meter 6 uRem/hr  
Concrete Wall Surface 5 uRem/hr; 1 Meter 6 uRem/hr  
Tile Wall Surface 12 uRem/hr; 1 Meter 10 uRem/hr

710 422

MDA about 1 uR/hr static measurement\*

MDA about 3 uR/hr scanning monitoring\*

\* Defined in Appendix A, reference 1, Table 5-6.

## II. Removable Contamination

Alpha/Beta Radiation Ludlum Dual Scaler Model 2929 Serial Number 39100  
Ludlum Detector Model 43-10-1 Serial Number 133993  
Calibration Date April 24, 1997  
Background  
Alpha 1.0 dpm/ 100 cm<sup>2</sup> (0.35 CPM)  
Beta 434 dpm/ 100 cm<sup>2</sup> (138 CPM)  
Efficiency  
Alpha 34 %  
Beta 31 %

### MDA

Alpha 5.5 DPM/ 100 cm<sup>2</sup>  
Beta 132 DPM/ 100 cm<sup>2</sup>

## QUALITY ASSURANCE CHECK

A daily check for portable survey instruments consisted of a source check and comparison of the measurement to a reading determined after calibration. Measurements conducted before and at the end of the day's survey were within  $\pm 20\%$  of the initial value. Additionally, the physical condition of the instrument, to include battery, cables and probes were checked. A daily background check was performed.

The laboratory instrument's efficiency value and MDA were determined using National Institute of Standards and Technology traceable standards. The standards were measured just prior to the wipe tests being counted.

## SURVEY TECHNIQUES

This second phase, the characterization study, involved confirming the original slightly elevated alpha readings in the Environmental Baseline Study. Once the readings were confirmed, an area was sanded rigorously with a mechanical sander. Health physics precautions were implemented which included: donning of a full face respirator and protective outer garments; and covering the floor with plastic to collect the concrete dust. Measurements were retaken to determine if the alpha readings had been reduced. These data are presented in Appendix D.

Stationary surveys for alpha radiation were performed by holding the probe in contact with the surface surveyed for at least 2 time constants, i.e., 8 seconds. The time period was reasonable

and ensured that the MDA values were below the guideline value. As stated earlier, wall surfaces where the alpha radiation exceeded 3 times background were counted for 1 minute using an integrated count.

Stationary surveys for beta radiation were performed by holding the probe in contact with the surface surveyed for at least 2 time constants, i.e., 8 seconds. The MDAs for the various surfaces were slightly above the guideline value for Th-232 but below the guideline value for beta-gamma emitting radioisotopes, i.e., 1,000 dpm/100 cm<sup>2</sup> and 5,000 dpm/ 100 cm<sup>2</sup>, respectively.

Stationary surveys for gamma radiation were performed by holding the survey meter in contact with the surface and at a distance of 1 meter for about 8 seconds. This amount of time ensured that the meter had stabilized. The MDA, 1 uR/hr, is below the guideline value for gamma emitting radioisotopes, i.e., 5 uR/hr as stated in the Acceptance Criteria section below.

Scanning surveys for gamma radiation was performed by walking slowly through the area obtaining exposure rate readings on surfaces. The highest reading obtained at a survey point was recorded.

### **BACKGROUND DETERMINATION**

Background determinations for gamma dose rate and alpha, beta count rate surveys were made prior to the beginning of the survey. Measurements were made in Building 319 in an adjoining room where RAM had not been stored but of similar construction as the facilities to be surveyed. Further, alpha radiation measurements were taken on the West exterior wall of Bay 6 to determine if any localized, elevated alpha radiation readings might be present. A total of 342 measurements were made using alpha, beta and gamma survey meters. The readings are shown in Appendix C.

The alpha measurements ranged from 0 to 1 counts per 8 seconds for the floor and inner wall. The alpha measurements for the concrete wall ranged from 2 to 5 CPM. The number of measurements required to be statistically accurate was about the same as the actual number of measurements taken. The background was verified each day the survey occurred.

Background readings were made prior to use of laboratory equipment. These measurements were used to determine the MDA for the several isotopes.

### **WIPE TESTS**

Because of the nature of the RAM stored in Building 319, the possibility of finding loose contamination was small. Nevertheless, wipe tests of the facilities were taken to determine if any residual contamination was present. Eighty two wipe tests were taken on the floor and walls. These wipe tests were counted in a scaler capable of measuring both alpha and medium energy beta radiation.

### **ACCEPTANCE CRITERIA**

The current standards for unrestricted use are contained in Appendix A, reference 3. These standards formed the basis for the acceptance criteria used by DDC in the evaluation of Building 319.

The acceptance criteria are detailed in the table below:

**Table 1: Acceptance Criteria**

Radionuclide	Exposure Rate (mRem/Hr) <sup>3</sup>	Ave. Gross Contamination <sup>1</sup>	Max. Gross Contamination <sup>2</sup>	Removable <sup>1</sup>
U-nat, U-235, U-238, and associated decay products	N/A	5,000 DPM $\alpha$ /100 cm <sup>2</sup>	15,000 DPM $\alpha$ /100 cm <sup>2</sup>	1,000 DPM $\alpha$ /100 cm <sup>2</sup>
Transuranic, Ra-226, Ra-228, Th-230, Pa-231, Ac-227, I-125, I-129	N/A	100 DPM/100 cm <sup>2</sup>	300 DPM/100 cm <sup>2</sup>	20 DPM/100 cm <sup>2</sup>
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	N/A	1,000 DPM/100 cm <sup>2</sup>	3,000 DPM/100 cm <sup>2</sup>	200 DPM/100 cm <sup>2</sup>
Beta-gamma emitters except Sr-90 and other noted above	0.005 mrem/hr	5,000 DPM/100 cm <sup>2</sup>	15,000 DPM/100 cm <sup>2</sup>	1,000 DPM/100 cm <sup>2</sup>

<sup>1</sup> As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

<sup>2</sup> The maximum contamination level applies to an area of not more than 100 cm<sup>2</sup>.

<sup>3</sup> The exposure rate criteria of 0.005 mrem/hr (5.0  $\mu$ R/hr) was obtained from a Nuclear Regulatory Commission internal memo dated October 29, 1986, from S. Block, Health Physicist, Region V to Peter Erickson, Special and Standardization Project, NRR, subject: Conversion of Regulatory Guide 1.86 Surface Contamination Limits Into Exposure Rate For Release For Unrestricted Use.

## SURVEY DATA ANALYSIS

Data obtained for Building 319, Bay 6 are provided in Appendix D.

Regarding the direct measurement for alpha contamination in Bay 6 of Building 319, all measurements were well below the guideline value, i.e., 1,000 dpm/100 cm<sup>2</sup>. All but one reading were at least a factor of 10 below the acceptance criteria. All individual readings were at least a factor of 10 below the maximum allowable limit, i.e., 3,000 dpm/100 cm<sup>2</sup>.

The readings obtained during this characterization study patterned the original data obtained for the Environmental Baseline Study. The areas where there were slightly elevated alpha readings continued to show readings at the same level and areas where no elevated alpha readings occurred were reconfirmed as not having readings above background. One area that had a slightly elevated alpha reading was sanded and resurveyed. The results, tabulated in Appendix D, show that the

readings taken before and after sanding were essentially unchanged. Two wall chips were sent to an independent laboratory for alpha/beta measurement and a gamma spectrum analysis. The laboratory confirmed the slightly elevated alpha reading on the South wall chip but no alpha reading on the West wall chip. A similar slightly elevated reading was measured for beta radiation. The gamma spectrum analysis did not reveal any peaks for thorium-230 or thorium-232 by analyzing for bismuth-214 and actinium-228, respectively. The data indicate that no significant, if any, fixed contamination was present from the storage of gas lantern mantles. The alpha readings were a result of natural background radioactivity in the concrete.

Regarding the direct measurement for beta contamination in the facility, only one average reading taken at the North Interior Wall, location NE1, slightly exceeded the guideline value for Th-232. This reading, 5 % over the limit, was attributed to the closeness of the guideline value to the statistical variation of background radiation. All individual readings were well below the maximum guideline value for Th-232, i.e., 3,000 dpm/100 cm<sup>2</sup>. The data indicate that no significant, if any, fixed contamination was present from beta emitting radioisotopes or Th-232.

Regarding the direct measurement for gamma contamination in the facility, the highest net value at any location was 4 uRem/hr, which is less than the acceptance criteria, i.e., 5 uRem/hr. The data indicate that no significant, if any, fixed contamination was present that emits gamma radiation.

Regarding the removable net alpha contamination measurements in the facility, all readings were well below the acceptance criteria for natural thorium, i.e., 200 dpm/ 100 cm<sup>2</sup>. The removable net beta contamination measurements were also well below the acceptance criteria. The data indicate that no significant removable contamination was present.

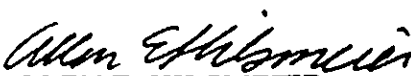
## CONCLUSION

The data indicate that Building 319, Bay 6, had several wall locations that had slightly elevated alpha radiation readings. These readings are attributed to the natural radioactivity found in building materials and is consistent with soil levels in the area. Regardless, the readings were well below the guideline values for unrestricted release of a facility. There is no internal or external radiation hazard in the facility. The data indicate that Building 319 can be released for unrestricted use.

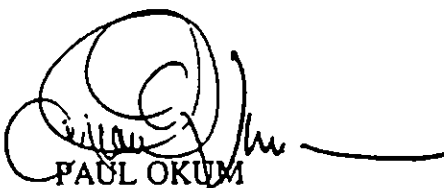
**RECOMMENDATION**

It is recommended that Building 319, Bay 6, be released for unrestricted use.

Submitted by:

  
ALLEN E. HILSMEIER  
DDC Health Physicist

Approved:

  
PAUL OKUM  
Director of Administration



DEFENSE LOGISTICS AGENCY  
ADMINISTRATIVE SUPPORT CENTER EAST  
14 DEDICATION DRIVE, SUITE 3  
NEW CUMBERLAND, PENNSYLVANIA 17070-5011

710 427



15 AUG 1996

ASCE-IW

MEMORANDUM FOR DDMT-D

THROUGH: ASCE-I

*9/15/96*  
*ASCE-I*

SUBJECT: DDMT Radiological Survey

Two copies of the environmental baseline radiological survey report are forwarded for dissemination. Recommend placing one copy of the report in the archives for DDMT and a copy retained by DDMT.

We would like to commend Mr. Paul Blake, Radiation Protection Officer for DDMT for the invaluable assistance he rendered to the survey officer. He made significant contributions in the coordination, preparation and accumulation of data contained in this report.

This report recommends that the DDMT facilities where radioactive material was previously stored, be released for unrestricted use with the exception of Building 319, Bay 6. This building will require decontamination of the South wall and a thorough radiological survey of the entire bay area before we could recommend its release for unrestricted use.

POC for any additional information is Mr. Allen Hilsmeier, DSN 977-4762 or COM (717) 770-4762.

*Allen Hilsmeier*  
JOHN STAMATELLOS  
Regional Safety & Occupational Health Manager  
ASCE-IW

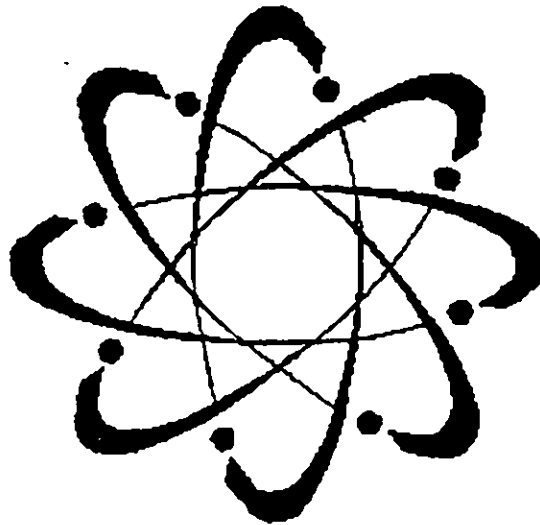
Attachment:

cc:  
DDRE-D/DD  
CAAEH  
ASCE-D  
ASCE-WP



**DEFENSE DISTRIBUTION REGION EAST**

**ENVIRONMENTAL BASELINE STUDY  
RADIOLOGICAL SURVEY  
FOR  
DEFENSE DISTRIBUTION DEPOT MEMPHIS**



**DDRE RADIOLOGICAL HEALTH GROUP  
SAFETY & OCCUPATIONAL HEALTH OFFICE**

**SURVEY CONDUCTED  
AUGUST 5-9, 1996**

---

## EXECUTIVE SUMMARY

This document encompasses a historical search, the sampling protocol to conduct an environmental baseline radiological survey and the survey results for the Defense Distribution Depot Memphis, Tennessee (DDMT). The historical search involved discussions with key persons who were directly knowledgeable of the past radiological operations at DDMT. The radiological survey protocol was developed utilizing the guidance contained in various references that are listed in Appendix A. Also utilized were good health physics practices, and protocols developed by the Department of the Army during previous base closures. The survey results indicate that not all facilities that stored radioactive material can be released for unrestricted use at this time. Remediation of low level contamination in Building 319 must be accomplished before that facility can be released for unrestricted use.

The historical review of radiological activities at DDMT revealed that lantern mantles that contain naturally occurring radioactive thorium were the primary items in storage. Discussion with current and former radiation protection officers and employees did not indicate any evidence of breakage or contamination of any facilities surfaces or the environment. However, this survey identified the South interior wall of Building 319 as having alpha contamination present that was slightly above the release criteria for unrestricted use.

The three other buildings identified by previous and current employees at DDMT were found to be free of any residual contamination. The employees collectively stated that the bulk of the radioactive material was stored over the years in a conex container alongside Building 319. An attempt to locate the conex container was unsuccessful.

## BACKGROUND

DDMT was targeted for closure during a Base Realignment and Closure (BRAC) action. DDMT must remove all radioactive material currently in storage and ensure that facilities where radioactive material was stored can be released for unrestricted use.

The radioactive material (RAM) at DDMT was transferred to other DDRE depots. Further, action is underway to direct line item managers to no longer ship their radioactive commodities to DDMT. Any RAM forwarded to DDMT in the future will be regarded as a transshipment and immediately redirected to another Defense Logistics Agency (DLA) depot. They will perform no processing or repackaging of the RAM received.

The primary RAM stored at DDMT were lantern mantles that contain naturally occurring Thorium-232 (Th-232). The lantern mantles are exempt from licensing and control by the Nuclear Regulatory Commission (NRC) because of their low level of radioactivity.

Other radioactive commodities identified as having been stored at DDMT are:

1. Smoke detectors containing generally licensed amounts of americium 241 (Am-241).
2. Electron tubes containing non-licensed amounts of Th-232, tritium (H-3), and radium-226 (Ra-226).
3. Wrist watches containing generally licensed amounts of H-3 and Ra-226.

4. Indicator and toggle switches containing Ra-226.
5. Compasses containing H-3.

No maintenance work took place at DDMT that may have involved the removal of radioactive material from the commodities and no repackaging or unwrapping of RAM occurred. Based upon this background information, DDRE determined that all areas identified as having stored radioactive commodities will be classified as unaffected areas as described in reference 1.

Appendix A. - - - - -

## SITE DESCRIPTION

DDMT was first activated as the Memphis General Depot in January 1942 under the U.S. Army. It became a DLA depot in January 1964. It was a primary distribution site for clothing and textiles. It is located in the extreme Southwestern corner of Tennessee in the southern part of the city of Memphis. DDMT occupies 630 acres with 6 million square feet of covered storage.

The four buildings located at DDMT that stored RAM consists of a concrete floor and concrete precast or reinforced concrete walls. Two of the buildings, i.e., Buildings 319 and 629, had an epoxy material covering the floors. The epoxy was probably added after the RAM was no longer stored in the buildings to accommodate other hazardous substances such as corrosives. A radiological survey of the floor for these two buildings would not detect any alpha or beta contamination.

## HISTORICAL REVIEW

The historical review of DDMT operations involving RAM indicated that NRC generally licensed and license exempt radioactive sources were stored at the Depot. Interviews were conducted on August 6-7, 1996, with Mr. Woodward Thomas, Radiation Protection Officer (RPO), from 1975 to 1983; Mr. Paul Blake, RPO from 1995 to the present; Mr. Harry Hartwig, Physical Scientist, from 1985 to the present; Mr. William Lovejoy, Chief, Recyclable Materials Branch, from 1981 to 1984 and 1986 to 1987; and Mr. Skip Wallace, Chief, Fire Inspection, from 1982 to the present. In addition, interviews were conducted with Mr. John Tibbels, RPO from 1983 to 1989; Mr. David Luscavage, RPO from 1989 to 1993; and Mr. Charles Crouch, Safety & Occupational Health Manager, from 1979 to 1987.

The interviewees stated that the RAM was primarily stored in a conex container near Building 319 and that no disassembly of items occurred to, in, or from the conex container. The conex container was removed long ago and could not be located. The surface below the conex container had been resurfaced with asphalt. Although the interviewees stated that they could not remember any incidents involving RAM, they had not conducted a radiation survey to verify their statement.

Interviewees stated that radiation surveys had not been conducted in the past because they did not have the necessary equipment. Also, the items were all generally licensed and license exempt which did not require any radiation surveys in accordance with NRC regulations.

At the time of this survey, the storage cage in Building 359 housed about 4000 watches that contained tritium. The watches were removed from the cage immediately and shipped to another DLA depot.

## TRAINING

The persons performing this survey were trained on the use of the instrumentation and the procedures to follow during the survey prior to beginning work. The DDRE Health Physicist was responsible overall for the accuracy and adequacy of the data. He was assisted by the DDRE alternate Radiation Safety Officer and the current DDMT RPO.

## SURVEY PROCEDURES

### OVERVIEW

The facilities identified as having stored radioactive commodities were treated as unaffected areas as defined in NUREG-5849. Each location was considered a separate survey unit. Walls were monitored only if they were in contact with the RAM.

Regarding Building 319, Bay 6, it was used to primarily store lantern mantles but watches, electron tubes, smoke detectors and toggle switches were also stored in the facility. The interviewees indicated that the RAM was mainly stored in the Southeast corner. One interviewee stated, however, that lantern mantles at one time was stored throughout the bay area. The East wall was believed to be installed sometime after RAM was already being stored. Furthermore, there was evidence that a wall was originally installed between Bays 6 and 7 but is now removed. Epoxy material was applied over the floor at some time after the RAM was present and probably after the RAM had been removed from the facility. Even though the area was categorized as an "unaffected area," one square meter grids were drawn on the floor and 2 meters up the wall at the Southeast corner to accurately measure any residual contamination. If no contamination was detected, ten square meter grids or less would be used for the remaining area in Bay 6.

Regarding Building 629, Bay 2, it served as an overflow facility when the conex container or Building 319 was full. The RAM was stored on pallets at least 5 meters from the nearest wall. Epoxy material was applied over the floor at some time after the RAM was present and probably after the RAM had been removed from the facility. The interviewee who remembered that RAM was stored in Building 629 also stated that only lantern mantles were stored there. The surface area was sectioned off in 3 meter grids and monitored for beta and gamma contamination even though it is recognized that the beta radiation would probably not penetrate the epoxy material.

Regarding Building 835, Section 6, a small room was used at one time to store small amounts of radioactive commodities. It was not used regularly and only the East side of the room was needed. Nevertheless, the entire room was monitored for residual alpha, beta, and gamma contamination.

Regarding Building 359, Section 3, the security vault and wire cage were used to store pilferable items such as watches and compasses. These radioactive commodities contained tritium. Reference 6 was a special survey of the vault to detect the presence of any tritium contamination.

The survey was performed in May 1988 by the U.S. Army Environmental Hygiene Agency. Survey results indicated tritium contamination exceeding the release limit, i.e., 5000 DPM/ 100 cm<sup>2</sup> on the outside of storage boxes but the floor, pallets and tables were well below the release limits. The items were removed and shipped to another depot. At the time of this survey, watches containing tritium were stored in the wire cage only and these items were removed before the conclusion of the survey.

Several interviewees indicated that watches containing RAM were stored in Building 360 at one time. This building has since been torn down. Sampling of the ground surface below and around the former facility was not considered necessary because of the unlikeliness of finding contamination.

Stationary measurements were taken in the facilities using a "box and X" pattern, i.e., 5 measurements were taken in each grid "box." Measurements were taken in each grid corner and in the center of the grid. A scan was also made over the surface of the grid as recommended in reference 1, Appendix A.

Alpha radiation measurements were conducted by using the audio response of a survey meter and counting the total number of clicks over a 30 second time period. This technique was used to reduce the Minimum Detectable Activity (MDA) to as low as possible and yet provide a reasonable time frame to collect the data. The surface was also scanned at a rate of about one detector width per second, i.e., 4 inches per second.

Beta radiation measurements were conducted by reading the meter of the survey meter. The size of the detector, i.e., 100 cm<sup>2</sup>, precluded taking an integrated count because of the relatively high background. The large detector provided, however, the optimum MDA. A scan was also made of the surface at the rate of about 4 inches per second.

Gamma radiation measurements were conducted by reading the meter of the survey meter. Readings were taken on contact with the surface and at one meter. A scan was also made of floor and wall surfaces and on stationary equipment such as shelves, conveyors, etc. Particular attention was given to cracks in surfaces. The audio was used to determine if any elevated contamination levels were present.

The guideline values specified in reference 3, Appendix A, could be observed using the instrumentation described below. The instruments used to measure alpha, beta and gamma radiation had MDAs of 70 DPM/ 100 cm<sup>2</sup>, 1,900 DPM/ 100 cm<sup>2</sup>, and 1 uR/hr, respectively.

At least one wipe test was taken within each grid. For small rooms, numerous wipe tests were taken to provide statistically meaningful results. Random wipe tests were taken on shelves where RAM was previously stored.

## **INSTRUMENTATION**

Instrumentation used for the surveys included a zinc sulfide scintillator for alpha detection, a plastic scintillator for beta detection and a sodium iodide crystal for gamma detection. Each instrument underwent standard quality assurance checks such as a daily source check, background and efficiency determinations, establishment of a MDA and a flag value. Instruments were calibrated by a certified U.S. Army calibration facility on a six month basis.

Specific information on the types of instruments used are:

710 433

**I. Fixed Contamination:**

a. Alpha Radiation Ludlum Survey Meter, Model 2224, Serial Number 125598  
Ludlum Detector, Model 43-89, Serial Number 134011  
Calibration Date July 29, 1996  
Background at site  
Floor 6 DPM/ 100 cm<sup>2</sup>, (1.0 CPM)  
Wall 16 DPM/ 100 cm<sup>2</sup>, (2.8 CPM)  
Efficiency 18 % for Th-230  
Detector surface area 100 cm<sup>2</sup>  
MDA 70 DPM/ 100 cm<sup>2</sup>  
Flag Value 75 DPM/ 100 cm<sup>2</sup>, (13 CPM)

b. Beta Radiation Ludlum Survey Meter, Model 2224, Serial Number 125598  
Ludlum Detector, Model 43-89, Serial Number 134011  
Calibration Date July 29, 1996.  
Background at site  
Floor 3,040 DPM/ 100 cm<sup>2</sup> (350 CPM)  
Wall 4,870 DPM/ 100 cm<sup>2</sup> (560 CPM)  
Efficiency 11.5 % for Tc-99  
Detector surface area 100 cm<sup>2</sup>  
MDA 1,900 DPM/ 100 cm<sup>2</sup>  
Flag Value 3,750 DPM/ 100 cm<sup>2</sup>, (430 CPM)

c. Gamma Radiation Ludlum Survey Meter, Model 19, Serial Number 104568  
Ludlum Detector, Model 19, Internal Mounted  
Calibration Date July 23, 1996  
Background 6 uR/hr  
MDA about 1 uR/hr static measurement\*  
MDA about 3 uR/hr scanning monitoring\*

\* Defined in Appendix A, reference 1, Table 5-6.

**II. Removable Contamination**

a. Alpha/Beta Radiation Tennelec Model LB-5100 Serial Number 7040614  
Proportional Counter  
Calibration Date August 5, 1996  
Background  
Alpha 3.0 DPM/ 100 cm<sup>2</sup> (0.74 CPM)  
Beta 6.1 DPM/ 100 cm<sup>2</sup> (2.73 CPM)  
Efficiency  
Alpha 24.9%  
Beta 44.7%  
MDA  
Alpha 2.7 DPM/ 100 cm<sup>2</sup>

## b. Tritium

Beckman Model 6500, Serial Number 7067417  
Liquid Scintillation Counter  
Calibration Date August 12, 1996  
Background 20 DPM/ 100 cm<sup>2</sup>  
Efficiency 67 %  
MDA 10 DPM/ 100 cm<sup>2</sup>

**QUALITY ASSURANCE CHECK**

A daily check for portable survey instruments consisted of a source check and comparison of the measurement to a reading determined after calibration. Measurements conducted before and at the end of the day's survey were within  $\pm 20\%$  of the initial value. Additionally, the physical condition of the instrument, to include battery, cables and probes were checked. A daily background check was performed.

The laboratory instrument's efficiency value and MDA were determined using National Institute of Standards and Technology traceable standards. The standards were measured just prior to the wipe tests being counted.

**SURVEY TECHNIQUES**

Stationary surveys for alpha radiation were performed by holding the probe in contact with the surface surveyed for at least a 30 second count time. The count time was reasonable and ensured that the MDA value was below the guideline values. For example, the guideline values for Ra-226 for fixed contamination are 100 DPM/ 100 cm<sup>2</sup> and 324 DPM/ 100 cm<sup>2</sup>, per references 4 and 2, Appendix A, respectively. The guideline values for Th-232 for fixed contamination are 1,000 DPM/ 100 cm<sup>2</sup> and 114 DPM/ 100 cm<sup>2</sup>, per references 4 and 2, Appendix A, respectively. In both cases, the alpha radiation MDA, 70 DPM/ 100 cm<sup>2</sup> is less than the regulatory guideline values.

Stationary surveys for beta radiation were performed by holding the probe in contact with the surface surveyed for at least 8 seconds. This amount of time encompassed two time constants of the instrument and ensured that the reading had stabilized. The MDA, 1,900 DPM/ 100 cm<sup>2</sup>, is below the guideline value for beta emitting radioisotopes, i.e., 5,000 DPM/ 100 cm<sup>2</sup>, as stated in reference 4, Appendix A.

Stationary surveys for gamma radiation were performed by holding the survey meter in contact with the surface for about 8 seconds. This amount of time ensured that the meter had stabilized. The MDA, 1 uR/hr, is below the guideline value for gamma emitting radioisotopes, i.e., 5 uR/hr as stated in the Acceptance Criteria section below. A stationary survey was also made with a gamma meter on shelves where RAM was stored.

Scanning surveys were made for alpha and beta contamination by moving the probe less than 1 cm from the surface. Scanning surveys for gamma radiation was performed by walking slowly through the area obtaining exposure rate readings on surfaces. Scans were also made on shelves and nearby walls where RAM was stored. The highest reading obtained at a survey point was recorded. If any areas exhibited readings greater than the flag value, they would be subjected to stationary surveys on contact with the surface, and a wipe test conducted.

Survey of the walls was performed if the RAM was in contact with the surface.

## **BACKGROUND DETERMINATION**

Background determinations for gamma dose rate and alpha, beta count rate surveys were made prior to the beginning of the survey. Measurements were made in Building 319 in an adjoining room where RAM had never been stored but of similar construction as the facilities to be surveyed. Twenty measurements were made using alpha, beta and gamma survey meters. The average readings were shown in the Instrumentation section above. The variance of the measurements was such that the beta and gamma readings were within the 95 % confidence level.

The alpha measurements ranged from 0 to 3 CPM in a 30 second time period. This spread, although small in actual size, would nevertheless require over 180 measurements to be taken to establish a statistically accurate average background. This number of background readings is unrealistic to obtain and not considered necessary due to the background reading being a factor of ten below the guideline value for measuring alpha radiation in the storage locations. The background was verified each day the survey occurred.

Background readings were made prior to use of laboratory equipment. These measurements were used to determine the MDA for the several isotopes.

## **WIPE TESTS**

Because of the nature of the RAM stored at DDMT, the possibility of finding loose contamination was small. Nevertheless, wipe tests of the facilities were taken to determine if any residual contamination was present. About 30 wipe tests were taken on the floor and shelves at each storage location. Each alpha/beta-gamma wipe test was conducted by taking a 1.75 inch diameter filter paper and wiping a 10 inch surface in an 'S' pattern. This test resulted in an area wiped of about 100 cm<sup>2</sup>. These wipe tests were counted in a scaler capable of measuring both alpha and medium energy beta radiation.

A wet wipe test was also conducted using a 1 inch square filter paper and wiping a 16 inch surface in an 'S' pattern. The filter paper was dissoluble in a liquid scintillation counter medium. These wipe tests were counted in a liquid scintillation counter to measure any low energy beta emitting radioisotope such as tritium.

## **ACCEPTANCE CRITERIA**



Residual contamination is considered a low probability based upon the kinds and types of radioactive commodities previously located at DDMT. Nevertheless, DDRE believes it prudent to perform reasonable surveys to support this premise. The current standards for unrestricted use are contained in Appendix A, references 1 through 4. These standards formed the basis for the acceptance criteria used by DDRE in the evaluation of DDMT.

The primary acceptance criteria are detailed in the table below:

**Table 1: Acceptance Criteria**

Radionuclide	Exposure Rate (mRem/Hr) <sup>3</sup>	Ave. Gross Contamination <sup>1</sup>	Max. Gross Contamination <sup>2</sup>	Removable <sup>1</sup>
U-nat, U-235, U-238, and associated decay products	N/A	5,000 DPM $\alpha$ /100 cm <sup>2</sup>	15,000 DPM $\alpha$ /100 cm <sup>2</sup>	1,000 DPM $\alpha$ /100 cm <sup>2</sup>
Transuranic, Ra-226, Ra-228, Th-230, Pa-231, Ac-227, I-125, I-129	N/A	100 DPM/100 cm <sup>2</sup>	300 DPM/100 cm <sup>2</sup>	20 DPM/100 cm <sup>2</sup>
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	N/A	1,000 DPM/100 cm <sup>2</sup>	3000 DPM/100 cm <sup>2</sup>	200 DPM/100 cm <sup>2</sup>
Beta-gamma emitters except Sr-90 and other noted above	0.005 mrem/hr	5,000 DPM/100 cm <sup>2</sup>	15,000 DPM/100 cm <sup>2</sup>	1,000 DPM/100 cm <sup>2</sup>

<sup>1</sup> As used in this table, DPM (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

<sup>2</sup> The maximum contamination level applies to an area of not more than 100 cm<sup>2</sup>.

<sup>3</sup> The exposure rate criteria of 0.005 mrem/hr (5.0  $\mu$ R/hr) was obtained from a Nuclear Regulatory Commission internal memo dated October 29, 1986, from S. Block, Health Physicist, Region V to Peter Erickson, Special and Standardization Project, NRR, subject: Conversion of Regulatory Guide 1.86 Surface Contamination Limits Into Exposure Rate For Release For Unrestricted Use.

A secondary acceptance criteria is outlined in reference 2, Appendix A. These values are as follows for a projected Total Effective Dose Equivalent of 3 millirem per year from fixed and removable surface contamination for a building occupancy (Table B-1).

H-3	5.29E6 DPM/ 100 cm <sup>2</sup>
Th-232	1.14E2 DPM/ 100 cm <sup>2</sup>
Ra-226	1.91E2 DPM/ 100 cm <sup>2</sup>
Am-241	3.71E1 DPM/ 100 cm <sup>2</sup>

## SURVEY DATA ANALYSIS

Data obtained for the four locations are provided in Appendix C. The data were compared to both primary and secondary acceptance criteria.

Regarding the direct measurement for alpha contamination in Bay 6 of Building 319, three wall grids had an average net value that slightly exceeded the guideline values for all alpha emitting radioisotopes that were previously stored at DDMT. Repeat readings were taken at two of the grids and in general, the readings were in agreement. One of the repeat readings at grid W8, i.e., 328 net DPM/ 100 cm<sup>2</sup>, slightly exceeded the maximum allowable contamination level specified in reference 4, Appendix A. If either of these conditions occur during the course of the survey, the area must be reclassified from an "unaffected" to an "affected" area. The testing requirements become more rigorous as defined in reference 1, Appendix A. The direct measurement for alpha contamination in the other facilities were all below the regulatory requirements.

Regarding the direct measurement for beta contamination in the facilities, all the readings were within the statistical fluctuations of background radiation. The data indicate that no significant, if any, fixed contamination was present from beta emitting radioisotopes.

Regarding the direct measurement for gamma contamination in the facilities, the highest net value at any location was 1 uR/hr. The data indicate that no significant, if any, fixed contamination was present that emits gamma radiation.

Regarding the removable alpha/beta-gamma contamination measurements in all the facilities, all readings were below the primary acceptance criteria for Ra-226, i.e., 20 DPM/ 100 cm<sup>2</sup>. Radium-226 has the most stringent acceptance criteria. The data indicate that no significant removable contamination was present.

Regarding the removable tritium contamination measurements in the facilities and especially in Building 359 where the bulk of the items containing tritium was stored, all measurements were well below the primary and secondary acceptance criteria for tritium, i.e., 1,000 DPM/ 100 cm<sup>2</sup>, and 5.29E6 DPM/ 100 cm<sup>2</sup>, respectively.

## CONCLUSION


The data indicate that one of the DDMT facilities where RAM was stored in the past, i.e., Building 319, Bay 6, was slightly contaminated above allowable limits for fixed alpha radiation. In its present condition, it could not be released for unrestricted use. The facility does not present a health hazard because of the low level of contamination present which is not readily removable. The other facilities were all well within the limits and could be released for unrestricted use.

## RECOMMENDATION


It is recommended that: 1) Building 319, Bay 6, be restricted to limited access and controlled by the DDMT RPO until it can be decontaminated; 2) that the entire area undergo a termination survey as an "affected" area in accordance with reference 1, Appendix A; 3) The epoxied floor in Building 319, Bay 6, be scraped sufficiently to allow alpha measurements to be taken to determine

if residual contamination is on the floor; and 4) The other facilities at DDMT where RAM was previously stored be released for unrestricted use.

Submitted by:

  
ALLEN E. HILSMEIER  
DDRE Health Physicist

Approved by:

  
J. O. RIMEL, Sr  
Director  
Public Safety Office

received

967-27-1993

710 439



STATE OF TENNESSEE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Division of Solid Waste Management  
Fifth Floor, L & C Tower  
401 Church Street  
Nashville, Tennessee 37243 - 1535

October 22, 1998

CERTIFIED MAIL P 446 336 049  
RETURN RECEIPT REQUESTED

Mr. M.J. Kennedy  
Colonel, USMC  
Commander  
Defense Logistics Agency  
Defense Distribution Depot Memphis  
2163 Airways Boulevard  
Memphis, Tennessee 38114-5210

RE: Termination of Permitted  
Container Storage  
Defense Logistics Agency  
Defense Distribution Depot Memphis  
2163 Airways Boulevard  
Memphis, Tennessee 38114-5210  
EPA ID No.: TN4 21 002 0570  
Permit No.: TNHW-053

Dear Mr. Kennedy:

The purpose of this letter is to notify you that pursuant to Tennessee Rule 1200-1-11-.07(9)(d), I have terminated only the operational container storage portions of your permit. This termination action does not affect the remainder of the permit (TNHW-053) or any permit condition, including any corrective action requirements. Termination of the container storage portion of your permit signifies that, by this action, the present permit (TNHW-053) is modified to reflect that only the container storage portion no longer has any valid authority to either be constructed or operated.

This termination and the subsequent modification of the operating permit is effective on October 22, 1998. After this date, the container storage can no longer be constructed or operated for the management of hazardous waste unless a new permit is sought and obtained in accordance with Rule 1200-1-11-.07.

This decision can be appealed pursuant to the Hazardous Waste Management Act, T.C.A. 68-212-113, and Rule 1200-1-11-.07(7)(k).

If you have any questions, please contact Ms. Hymelia Craig of my staff  
(615) 532-0828.

Sincerely,



Tom Tiesler, Director  
Division of Solid Waste Management

Enclosure (1)

cc: Ms. Jamie Burroughs, Manager, Treatment and Storage Section  
Mr. Otis Johnson, EPA, Region IV  
Mr. Narindar Kumar, EPA, Acting Chief, RCRA Branch  
Mr. Mark Thomas, Memphis Field Office  
Mr. O.J. Wingfield, Chief, Financial Compliance  
Mr. Bill Krispin, Manager, Land TSD Section

State of Tennessee  
Department of Environment and  
Conservation  
Division of Solid Waste Management

Hazardous Waste Management  
Program  
5th Floor, L & C Tower  
401 Church Street  
Nashville, TN 37243-1535  
(615) 532-0828

**NOTICE OF TERMINATION OF A PERMITTED ACTIVITY AND  
MODIFICATION OF THE OPERATIONAL PERMIT**

Permittee: U.S. Department of Defense and Defense  
Logistics Agency, Defense Depot Memphis

Facility Location: 2163 Airways Blvd.  
Memphis, Tennessee 38114-5210

EPA ID No.: TN4 21 002 0570

Permitted Activity: Container Storage (S01)

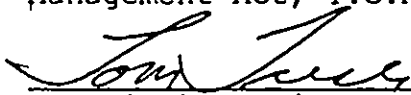
Permitted Capacity: 154,440 gallons

Permit Number: TNH-053

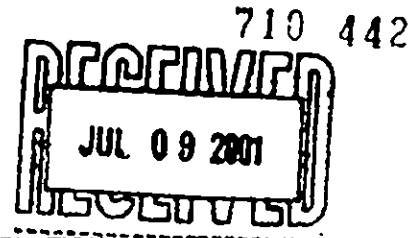
Pursuant to the Tennessee Hazardous Waste Management Act of 1977, as amended (Tennessee Code Annotated 68, Chapter 212, Part 1) and the regulations promulgated thereunder by the Tennessee Solid Waste Disposal Control Board (found at Tennessee Rule Chapter 1200-1-11), it has been decided to terminate only the portion of the operational permit that allowed the construction and operation of a 154,440 gallon hazardous waste container storage area. This decision is based on the Permittee's request, dated June 30, 1997, to remove this from the permitted activities as identified in Permit Number: TNH-053.

Only activities authorized in the permit as part of the container storage operation will terminate on the effective date this document is signed. Terminated portions of the permit include Section III and Attachments 1 through 10. This action does not affect the remainder of the permit or any permit condition, including any corrective action requirements. After the effective date, no further activities involving the container storage portion of the permit is effective and if, in the future, the Permittee wishes to conduct such operations, a permit must be applied for and obtained from this Department in accordance with Rule 1200-1-11-.07.

This permit termination action is being processed as set forth in Rule 1200-1-11-.07(7) and can be appealed pursuant to the Hazardous Waste Management Act, T.C.A. 68-212-113 and Rule 1200-1-11-.07(7)(k).

  
Tom Tiesler, Director  
Division of Solid Waste Management  
Tennessee Department of Environment  
and Conservation

10/22/98  
Effective Date



STATE OF TENNESSEE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

401 CHURCH STREET  
L & C ANNEX 6TH FLOOR  
NASHVILLE TN 37243-1534

June 29, 2001

Mr. Cyde Hunt  
Remedial Program Manager  
Defense Distribution Depot Memphis  
2163 Airways Boulevard  
Memphis, TN 38114

Subject: **TERMINATION OF NPDES Permit No. TN0022322**  
**Defense Distribution Depot Memphis**  
**Memphis, Shelby County, Tennessee**

Dear Mr. Hunt:

This letter is to inform you the Division of Water Pollution Control is terminating the above referenced permit effective as of the date of this letter. The reason for this action is that the facility is being leased by the City of Memphis and Shelby County which has been transferred to Depot Redevelopment Corporation (DRC) per your letter dated April 9, 2001.

If you should decide to discharge again, you must reapply for an NPDES permit at least 180 days prior to any proposed discharge.

If you have questions concerning this correspondence or if we may be of assistance to you in any way, please contact Ms. Ranjana Chopra Sharp at (615) 532-0644 or by E-mail at [rsharp@mail.state.tn.us](mailto:rsharp@mail.state.tn.us).

Sincerely,

  
Saya Ann Qualls, P.E.

Manager, Permit Section  
Division of Water Pollution Control

SAQRCS  
P/WAT-29

Termination Final Letter TN0022322.DOC

Enclosure

cc: Division of Water Pollution Control, Permit Section  
Environmental Assistance Center - Memphis, Division of Water Pollution Control  
Enforcement and Compliance Section, Nashville

143

LINE #	LOCATION	INSTALLED	# DIES	KVA	VOLTAJE	PHASE	CONDITION	MOUNTING	MANUFACTURE	SERIAL #	DR	WEIGHT LBS	OIL (G)	AIR COOLED DAY
14	141	1/21/76	1	100.0	2200/12470	3P2W	GOOD	POLE	WESTINGHOUSE LINE MAT	2500-1	2.00	130	25	
148	S. FENCE LINE	6/21/76	1	15.0	240/1240	120/240	GOOD	POLE	WESTINGHOUSE	607125	2.00	420	10.0	
227	229	1/1/79	1	37.5	7620	120/240	GOOD	POLE	WESTINGHOUSE	613321	2.10	950	13.0	
227	229	4/21/76	1	37.5	7620	120/240	GOOD	POLE	WESTINGHOUSE	6070834	2.10	450	33.0	
227	229	4/21/76	1	37.5	7620	120/240	GOOD	POLE	WESTINGHOUSE	607087	2.10	350	33.0	
292	S. FENCE LINE	4/21/76	1	15.0	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	313897	2.00	320	27.0	
292	S. FENCE LINE	4/21/76	1	5.0	7200/12470	240	GOOD	POLE	WAGNER	5L210.53	2.50	301	20.0	
301	H. FENCE LINE	7/12/77	1	15.0	7200/12470	120/240	GOOD	POLE	GE	3994293-60Y	2.60	322	12.0	
393	PLONIC AREA	7/12/77	1	5.0	7200	120/240	GOOD	POLE	MAHONEY	699160	1.20	320	21.3	
400	SWITCH GEAR	6/7/78	1	10.0	7200/12470	120/240	GOOD	POLE	MAHONEY	A67365	2.80	300	12.0	
402	308/309	6/7/78	1	5.0	7200/12470	120/240	GOOD	POLE	MAHONEY	MONS	1.20	320	12.0	
461	380/469	1/1/79	1	75.0	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	6130508	3.10	1090	12.0	
461	468/469	1/1/79	1	75.0	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	6150507	3.10	1090	12.0	
461	469/468	1/1/79	1	75.0	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	6113915	3.10	1090	12.0	
472	360	6/8/78	1	5.0	7200/12470	120/240	GOOD	POLE	PEIN	2363-7	2.60	300	40.0	
475	J & 4TH ST	6/10/76	1	75.0	7200/12470	120/240	GOOD	POLE	MAHONEY	647541	3.20	280	21.0	
552	550	11/20/89	1	75.0	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	M95608VGA	3.10	1100	27.0	
552	550	11/20/89	1	75.0	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	70A-3921	3.10	1090	27.0	
552	550	11/20/89	1	75.0	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	6229-763-1A	2.10	1100	30.0	
584	489	6/10/76	1	15.0	7200/12470	120/240	GOOD	POLE	GE	D994294-60Y	2.30	330	21.3	
699	690	6/10/76	1	50.0	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	6070155	2.30	560	31.1	
699	690	6/10/76	1	50.0	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	6070139	2.30	631	30.4	
699	690	4/22/81	1	50.0	7200/12470	120/240	GOOD	POLE	MAGNET ELEC	RH01882	2.50	631	30.4	
751	G ST	6/11/76	1	3.0	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	5569101	2.70	560	31.1	
751	G ST	6/11/76	1	3.0	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	5569035	2.70	290	15.1	
751	G ST	6/11/76	1	3.0	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	5569104	2.70	290	15.1	
755	754	11/20/89	1	37.5	7200/12470	120/240	GOOD	POLE	MAGNET	HF09415	2.50	290	15.1	
764	860	11/20/89	1	37.5	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	6113325	2.40	511	25.2	
764	860	1/1/89	1	37.5	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	6113322	2.40	950	33.0	
764	860	11/20/89	1	37.5	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	6113311	2.40	950	33.0	
778	670	6/10/76	1	15.0	7200/12470	120/240	GOOD	POLE	GE	D994292-60Y	2.30	950	33.0	
865	873	11/20/89	1	25.0	7200/12470	120/240	GOOD	POLE	HOKAID IND	63563-3136	2.10	300	12.0	
865	873	11/20/89	1	25.0	7200/12470	120/240	GOOD	POLE	HOKAID IND	63563-3136	2.10	395	20.1	
865	873	11/20/89	1	25.0	7200/12470	120/240	GOOD	POLE	HOKAID IND	63562-3136	2.10	396	20.1	
874	873	6/10/76	1	35.0	7200/12470	120/240	GOOD	POLE	MAHONEY	67832C	2.50	396	20.1	
906	5TH & D	6/10/76	1	15.0	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	3176507	2.40	390	20.1	
907	772	11/20/89	1	75.0	7200/12470	120/240	GOOD	POLE	MAGNETIC	AF04236	1.40	841	37.0	
907	772	11/20/89	1	75.0	7200/12470	120/240	GOOD	POLE	MAGNETIC	FG11559	1.40	550	20.0	
987	772	11/20/89	1	25.0	7200/12470	120/240	GOOD	POLE	UNITED ELEC	8626232AA	1.80	450	28.0	
991	S. FENCE LINE	4/21/76	1	5.0	7200/12470	120/240	GOOD	POLE	PEIN	3363-5	2.60	300	12.0	
1011	W. FENCE LINE	4/21/76	1	25.0	7200/12470	120/240	GOOD	POLE	ALLIS CHALMERS	2411899	2.10	480	27.0	
1062	G ST	6/10/76	1	15.0	7200/12470	120/240	GOOD	POLE	LINE MATERIAL	29281	2.50	120	16.5	
1101	W. FENCE LINE	4/21/76	1	37.5	7620	120/240	GOOD	POLE	WESTINGHOUSE	6070816	2.10	250	33.5	
1111	OTHERS	6/11/76	1	15.0	7200/12470	120/240	GOOD	POLE	WESTINGHOUSE	2076803	2.40	950	33.0	
1211	B ST	6/11/76	1	15.0	7200/12470	120/240	GOOD	POLE	MAHONEY	697653	2.15	490	33.0	
1311	370	6/8/76	1	100.0	7200/12470	120/240	GOOD	POLE	ESCO	8021156	2.70	420	27.0	
1411	477	6/8/76	1	100.0	7200/12470	120/240	GOOD	POLE	ESCO	4024355	2.97	1200	90.0	
1511	170	6/8/76	1	100.0	7200/12470	207/240	GOOD	POLE	GE	14535007-A	3.70	1320	90.0	
1611	170	6/11/76	1	5.0	7200/12470	120/240	GOOD	POLE	UNITED UTILITY	2322-12A	2.30	650	33.0	
1711	170	6/11/76	1	5.0	7200/12470	120/240	GOOD	POLE	UNITED UTILITY	9010400A	1.80	950	28.0	
1811	170	6/11/76	1	20.0	7200/12470	120/240	GOOD	POLE	MAGNETIC	4011278	1.20	631	28.1	
1911	170	6/11/76	1	20.0	7200/12470	120/240	GOOD	POLE	MAGNETIC	4011278	1.20	631	28.1	





# TRANSFORMER RECORD

**100**

STANDARD INFORMATION NOT AVAILABLE





# TRANSFORMER RECORD

ITEM #	LOCATION	INSTALLED	DATE	KVA	VOLTAGE	PHASE	CONNECTION	MANUFACTURE	SERIAL #	% DOP	WEIGHT	AIR CO
					PRIMARY	SECONDARY	SINGLE	THREE			LBS	OLI (G)
Sample Number	Set No.	Type	Size in Inches	Height	KVA	Primary	Secondary	MFG	Weight (Pounds)	Ident.		
1	3360-9	Transformer	36	4	34	75	10	Pennsylvania	1060	100	1260	
2	7812498	Transformer	46	4	50	75	60	ESCO	1320	<0.5		
3	7812499	Transformer	36	4	50	75	60	ESCO	1320	<0.5		
4	7812497	Transformer	36	4	50	75	60	ESCO	1320	<0.5		
5	862031Y63AA	Transformer	36	4	50	100	30	Gen Electric	1020	<0.5		
6	5333303	Transformer	28	4	45	15	17	Wagner Electric	420	1.4	1260	
7	1704784	Transformer	28	4	43	15	23	Allis Chalmers	420	61.9	1260	
8	6133313	Transformer	32	4	53	37.5	10	Westinghouse	550	4.4	1260	
9	48AC6616	Transformer	28	4	36	15	20	Westinghouse	550	<0.5		
10	5718923	Transformer	24	4	40	15	20	Wagner Electric	350	<0.5		
11	49AC9094	Transformer	28	4	36	15	20	Westinghouse	350	<0.5		
12	2193345	Transformer	42	4	52	37.5	35	Allis Chalmers	920	<0.5		
13	6150504	Transformer	33	4	53	75	10	Westinghouse	1090	5.2	1260	
14	6150508	Transformer	33	4	53	75	10	Westinghouse	1090	6.5	1260	
15	8971195	Transformer	24	4	44	15	16.5	Wagner Electric	420	<0.5		
16	8961474	Transformer	24	4	44	15	16.5	Wagner Electric	420	<0.5		
17	6117274	Transformer	36	4	52	27.5	10	Westinghouse	950	0.3	1260	
18	8921150	Transformer	24	4	44	15	16.5	Wagner Electric	420	4.8	1260	
19	2797378	Transformer	34	4	53	37.5	35	Allis Chalmers	920	<0.5		
20	2842496	Transformer	36	4	60	75	50	ESCO	1320	<0.5		
21	5300072	Transformer	21	4	44	25	37	Maloney Elec.	813.5	23	1260	
22	618446	Transformer	31	4	44	25	37	Maloney Elec.	813.5	26.3	1260	
23	618415	Transformer	31	4	44	25	37	Maloney Elec.	813.5	19.1	1260	
24	674986	Transformer	31	4	44	25	37	Maloney Elec.	813.5	23.1	1260	

TRANSFORMER NUMBERING NOT YET DETERMINED

TRANSFORMATION NOT AVAILABLE

ASCE-WP

MAR 9 8 1996

## MEMORANDUM FOR COMMANDER, DDMT

## SUBJECT: Radon Survey

The radon survey for the DDMT military housing area was completed on February 14, 1996. The Priority 1 (child care, hospitals, schools, and living quarters) radon assessment was conducted in accordance with AR 200-1, Chapter 11 (attachment).

On November 6, 1995, radon detectors were placed in eight military housing structures for ninety days to measure indoor radon gas levels. The objective of the assessment was to identify structures exceeding the Environmental Protection Agency (EPA) recommended action level of 4 pico Curies of radon per liter of air (pCi/l). Based on this screening, the buildings measured did not exceed the EPA action level (attachment), therefore, no additional sampling is required.

Since Priority 1 concentrations were not greater than 4 pCi/l, Priority 2 and 3 structures will not need to be measured, IAW AR 200-1.

Two radon detectors were placed in each structure on November 6, 1995 with the anticipation of performing the Long Term Measurement (LTM) (one year), if the radon levels exceeded 4 pCi/l. Since the results of the 90 day monitoring are below the EPA established standards, the remaining detectors are not needed. ASCE-WP requests somebody from your installation retrieve and dispose of the additional detectors in your municipal waste stream.

If you have any questions or need further assistance contact Barbara Johns, ASCE-WP, DSN 977-4621

**SIGNED**

LARRY V. NEIDLINGER, P.E.  
Director  
Office of Engineering and  
Equipment Management

## Attachments

Barbara Johns/ASCE-WP/4-4621/March 7, 1996/bj/WordPerfect

COORDINATION: ASCE-WP

DATE

"Official Reading File"

(717) 667-7032



# TCS INDUSTRIES

RADON GAS DETECTION

4326 Crestview Road, Harrisburg, PA 17112

DEFENSE DISTRIBUTION REGION EAST  
ATTN: ASCE-WP (BARBARA JOHNS)  
BUILDING 1-1 SECOND FLOOR  
NEW CUMBERLAND PA 17070

Monitor Number	pci/l	Test Location	Exposure Start	Exposure End Date	Reprint from
095661	5.0		11/06/95	02/14/96	
095662	5.4		11/06/95	02/14/96	
095666	5.2		11/06/95	02/14/96	
095701	1.7		11/06/95	02/14/96	
095703	2.3		11/06/95	02/14/96	
095705	0.6		11/06/95	02/14/96	
095707	1.3		11/06/95	02/14/96	
095709	0.9		11/06/95	02/14/96	
095711	0.7		11/06/95	02/14/96	
095713	0.3		11/06/95	02/14/96	
095715	1.1		11/07/95	02/14/96	
095717	< 0.1		11/06/95	02/14/96	
095720	0.2		11/09/95	02/14/96	

Monitor Type: Alpha-track

## NOTICE TO CLIENTS

The Radon Certification Act requires that anyone who provides any environmental service or product to the general public must be certified by the Pennsylvania Department of Environmental Protection. You are advised to purchase all certification from any person who provides such services or products. You are also advised to check the certification of products offered. All such certification data will be sent to the Department as required by the Act and will be kept confidential. If you have any questions, comments or complaints regarding persons who provide environmental services, please contact the Department of the Bureau of Radon Prevention, Department of Environmental Protection, P.O. Box 6860, Harrisburg, PA 17106-0680, (717) 783-3900.

*James G. J. DiStefano*

OCT- 2-96 WED 4:58 PM

MAY-12-96 WED 2:18 PM ASCE WP ENVIRONMENTAL

PAZ NO. 717-7704439

P. 4

P. 4

## DDMT RADON SURVEY

(90 DAYS) Nov 1995 - Feb 1996

<u>DETECTOR ID NO.</u>	<u>LOCATION</u>	<u>RESULTS</u> (Limits 4 pCi/l)
095701	Quarters 12	1.7 pCi/l
095702	Quarters 12 (HOLD in place)	
095703	Quarters 13	2.3 pCi/l
095704	Quarters 13 (HOLD in place)	
095705	Quarters 10	0.6 pCi/l
095706	Quarters 10 (HOLD in place)	
095707	Quarters 11	1.3 pCi/l
095708	Quarters 11 (HOLD in place)	
095709	Quarters 6	0.9 pCi/l
095710	Quarters 6 (HOLD in place)	
095711	Quarters 7	0.7 pCi/l
095712	Quarters 7 (HOLD in place)	
095713	Quarters 8	0.3 pCi/l
095714	Quarters 8 (HOLD in place)	
095715	Quarters 9	1.1 pCi/l
095716	Quarters 9 (HOLD in place)	





DEFENSE LOGISTICS AGENCY  
DEFENSE DEPOT SUSQUEHANNA, PENNSYLVANIA  
MEMPHIS DEPOT CARETAKER DIVISION  
2163 AIRWAYS BOULEVARD  
MEMPHIS, TENNESSEE 38114-5210

710 452

DDSP-F

August 26, 1999

Turpin Ballard  
Environmental Protection Agency  
Office of Solid Waste  
Federal Facilities Branch  
61 Forsyth Street, SW  
Atlanta, GA 30303

Dear Mr. Ballard;

This letter is to notify you of our intent to designate a 75-foot strip along Hayes Road on the east side of Dunn Field as a separate BRAC parcel. This is a necessary step to the Department of Defense making this strip available to the City of Memphis for a roadway widening project. This project was discussed at the June 1999 BRAC Cleanup Team meeting.

This redesignation of that strip will be established and defined in the upcoming BRAC Cleanup Plan. The parcel map will also be updated to reflect this change.

For more information, please contact me at (901) 544-0611.

Sincerely,

SHAWN PHILLIPS  
BRAC Environmental Coordinator

Cc:  
John DeBack, DDSP-F  
Mike Dobbs, DDC  
Jim Covington, DRC



DEFENSE LOGISTICS AGENCY  
DEFENSE DEPOT SUSQUEHANNA, PENNSYLVANIA  
MEMPHIS DEPOT CARETAKER DIVISION  
2163 AIRWAYS BOULEVARD  
MEMPHIS, TENNESSEE 38114-5210

710 453

IN REPLY  
REFER TO

DDSP-F

August 23, 2000

Mr. Turpin Ballard  
Environmental Protection Agency, Region IV  
Office of Solid Waste  
Federal Facilities Branch  
61 Forsyth Street, SW  
Atlanta, GA 30303

Dear Mr. Ballard:

This letter is to notify you of our intent to designate a 2-acre plot south of Parcel 2 (Housing Area) as a separate BRAC parcel. This plot is currently included in Parcel 3.5. This is a necessary step to the Department of Defense making this plot available to the Depot Redevelopment Corporation for an entrance roadway from Ball Road to the Housing Area. This project was discussed at the July 2000 BRAC Cleanup Team meeting.

This plot will be redesignated Parcel 2.8. This plot will be established and defined in the upcoming BRAC Cleanup Plan Version 4. The Location of MDRA and BRAC Parcels map (Figure 1-3) and the Environmental Condition of Property Main Installation map (Figure 3-5) will also be updated to reflect this change.

For more information, please contact me at (901) 544-0617.

Sincerely,

SHAWN PHILLIPS  
BRAC Environmental Coordinator

cc:  
John DeBack, DDSP-F  
Mike Dobbs, DDC  
Jim Covington, DRC

From: HokieTrout@aol.com  
Sent: Wednesday, September 13, 2000 11:53 AM  
To: ballard.turpin@epa.gov; jmomison2@mail.state.tn.us; dcooper@ddc.dla.mil  
Cc: JohnPDB@aol.com; debackjp@acq.osd.mil  
Subject: FYI, Parcel 2.7 and 2.8

Gentlemen,

I have had a conversation with the Army regarding my redesignation of about a two acre portion of Parcel 3.5 as a new Parcel 2.8. Please refer to my letter dated August 23, 2000, that designated this area as Parcel 2.8. This is the area south of the housing units that is required by the transferee for city road frontage and the area that Dr.'s Simon and Mylavarapu did an exposure point calculation regarding.

Designating this as a new parcel was one approach, however it makes more

sense to include this area in the current parcel 2.7. These contiguous properties are still part of a single real estate transfer.

Accordingly, I

will change the boundary of parcel 2.7 to include the southern property discussed above. I will also designate this expanded parcel as ECP category

4 (areas where releases occurred, but all remedial actions have been taken),

which is appropriate. Denise will merely note in the BCP tables describing

the environmental actions taken on the parcel that only the northern portion underwent the 1998 soil removal.

There will be no further correspondence from me on this unless either Jim or Turpin require it. Please attach this email to my August 23 letter to amend that letter.

Thanks, Shawn



**DEFENSE LOGISTICS AGENCY**  
DEFENSE DEPOT SUSQUEHANNA PENNSYLVANIA  
OL, MEMPHIS  
2163 AIRWAYS BOULEVARD  
MEMPHIS, TENNESSEE 38114

710 455

IN REPLY  
REFER TO

DDSP-D (Memphis)  
Mr. Turpin Ballard  
Environmental Protection Agency, Region IV  
Federal Facilities Branch  
61 Forsyth Street  
Atlanta, GA 30303

August 9, 2002

Dear Mr. Ballard

This letter is to notify you of parcel boundary changes at Dunn Field. These changes are needed to facilitate the Dunn Field finding of suitability to lease/transfer process.

- Create Parcel 36 32 to delineate the Recreation Area as defined by JDB. Parcel 36 32 description will read "open land area not included in other parcels in northeast corner of Dunn Field surrounding Building 1185, the former pistol range and the drainage ditches." Boundaries for this parcel will be bounded on the north by fence line, bounded on the east by Parcel 36 31 (75-foot wide strip along Hays Road), bounded on the west by top of the ridgeline inside the dirt/gravel road, and bounded on the south by inside of gravel road.
- Parcel 36 15: Change description from "fluvial aquifer groundwater contamination beneath Dunn Field" to "open land area surrounding disposal sites in northwest corner of Dunn Field." Change map boundaries to bounded on the north by the fence line, on the east by the inside of the road that runs along the railroad tracks, on the south by the southern edge of the asphalt pad (intersecting but excluding Parcel 36 29), and on the west by the fence line. This area basically coincides with the Disposal Area identified in the Dunn Field Remedial Investigation - eastern boundary in the DF RI for the Disposal Area along foot of ridgeline on east side of railroad tracks, so that the Disposal Area includes the railroad track and paved road.
- Parcel 36 30: Change description and map boundaries to "all open land areas of Dunn Field not included in other parcels." This parcel coincides with areas on Dunn Field that appear to be available for unrestricted reuse based on the DF RI.

These changes were incorporated into the Rev. 0 BRAC Cleanup Plan Version 6 (BCPV6) document. All pertinent maps will also be updated to reflect this change.

For more information, please contact Clyde Hunt or me at (901) 544-0617.

JOHN P. DELBACK  
DOD Base Transition Coordinator

Cc  
Mike Dobbs, DDC  
Jim Covington, DRC

PD-E10  
33.



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

446 Neal Street  
Cookeville, Tennessee 38501

710 456

July 23, 1996

Mr. Roger A. Burke  
Chief, Environment and Resources Branch  
U.S. Army Corps of Engineers  
P.O. Box 2288  
Mobile, Alabama 36628-0001

Dear Mr. Burke:

Thank you for your letter and enclosures of July 10, 1996, regarding the cleanup activities at the Defense Distribution Depot Memphis in Shelby County, Tennessee. The Fish and Wildlife Service (Service) has reviewed the information submitted and offers the following comments.

Information available to the Service does not indicate that wetlands exist in the vicinity of the proposed project. However, our wetland determination has been made in the absence of a field inspection and does not constitute a wetland delineation for the purposes of Section 404 of the Clean Water Act or the wetland conservation provisions of the Food Security Act. The Corps of Engineers or the Natural Resources Conservation Service should be contacted if other evidence, particularly that obtained during an on-site inspection, indicates the potential presence of wetlands.

Endangered species collection records available to the Service do not indicate that federally listed or proposed endangered or threatened species occur within the impact area of the project. We note, however, that collection records available to the Service may not be all-inclusive. Our data base is a compilation of collection records made available by various individuals and resource agencies. This information is seldom based on comprehensive surveys of all potential habitat and thus does not necessarily provide conclusive evidence that protected species are present or absent at a specific locality. However, based on the best information available at this time, we believe that the requirements of Section 7 of the Endangered Species Act of 1973, as amended, are fulfilled. Obligations under Section 7 of the Act must be reconsidered if (1) new information reveals impacts of the proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

Thank you for the opportunity to comment on this action. If you have any questions, please contact Timothy Merritt of my staff at 615/528-6481.

Sincerely,

  
Lee A. Barclay, Ph.D.



File

710 157

**TENNESSEE HISTORICAL COMMISSION**  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
2941 LEBANON ROAD  
NASHVILLE, TN 37243-0442  
(615) 532-1550

January 30, 1996

Ms. Christine E. Kartman  
Defense Distribution Depot, Memphis  
2163 Airways Boulevard  
Memphis, Tennessee 38114-5210

RE: DOD, DEFENSE DISTRIBUTION DEPOT, MEMPHIS, SHELBY COUNTY

Dear Ms. Kartman:

Pursuant to your request, this office has reviewed documentation concerning the above-referenced undertaking. This review is a requirement of Section 106 of the National Historic Preservation Act for compliance by the participating federal agency or applicant for federal assistance. Procedures for implementing Section 106 of the Act are codified at 36 CFR 800 (51 FR 31115, September 2, 1986).

Considering available information, we reiterate our previous finding that the project as currently proposed may adversely affect properties that are eligible for listing in the National Register of Historic Places. Therefore, this office has an objection to the implementation of this project. You should now begin immediate consultation with our office. **Until you have received a final comment on this project from this office and the Council, you have not completed the Section 106 review process.** Please direct questions and comments to Joe Garrison (615)532-1559. We appreciate your cooperation.

Sincerely,

A handwritten signature in cursive script, reading "Herbert L. Harper".

Herbert L. Harper  
Executive Director and  
Deputy State Historic  
Preservation Officer

HLH/jyg

**FINAL PAGE**

**ADMINISTRATIVE RECORD**

**FINAL PAGE**