



THE MEMPHIS DEPOT TENNESSEE

ADMINISTRATIVE RECORD COVER SHEET

AR File Number 482

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VERSION 3 FINAL REPORT

BRAC CLEANUP PLAN

Version 3

The Memphis Depot

(formerly the Defense Distribution Depot
Memphis, Tennessee)

Prepared by the Memphis Depot Caretaker Division
Environmental Office

October 1999

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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 Environmental Protection Agency and 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 is a dynamic document that will be

EXECUTIVE SUMMARY

updated periodically to reflect the current status and strategies of remedial actions. This document is the third in a series of updates/modifications and represents conditions and strategies as of October 1999.

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.

TABLE ES-1 BRAC CLEANUP PLAN ABSTRACT

482

5

Department of Defense Component Defense Logistics Agency

Installation Name: Defense Distribution Depot Memphis, Tennessee (Memphis Depot Caretaker Division)

FFID: TN-971520570

Location: Memphis, Tennessee

Date Prepared: 199910

BRAC Round: IV

BRAC Type: C

INSTALLATION SUMMARY

Scheduled Operational Closure Date		Date CERFA EBS Submitted	199611
Actual Operational Closure Date:	199709	Number of CERFA Acres Proposed:	62
		Number of CERFA Acres Concurred:	5.95
Total Number of Installation Acres	642	Date CERFA Concurrence Received	199703
Acres Retained by Component:	0		
Acres to be Transferred to another Component.	0	Date BCT Formed	199512
Acres Planned for non-DoD Federal Transfer	0	Date Initial BCP Completed.	199611
Acres Planned for Non-Federal Transfer	642	Date of Last BCP Update	199810
		Date RAB Established:	199402
Actual Acres Leased to non-DoD Federal Entity.	0	Actual Acres Transferred to non-DoD Federal Entity	0
Actual Acres Leased to Non-Federal Entity.	578	Actual Acres Transferred to Non-Federal Entity	0

Types of Acres	Environmental Condition of Property						
	1	2	3	4	5	6	7
Acres according to CERCLA	57.43	8.01	59.78	63.24	2.00	40.26	411.49

Additional Environmental Considerations	Number of Acres
Petroleum, oils, and lubricants	8.01
Unexploded ordnance/Ordnance or explosives	7.50
Areas that require protection because of the presence of natural or cultural resources	56.03

Total Number of Acres Available for Transfer.	129.32
Total Number of Acres Eligible for Disposal	642

Activity	Installation Budget (\$000)								
	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	FY06-Completion
Restoration	0	4,516	3,120	4,267	7,347	700	700	700	2,100
UXO	0	0	0	0	0	0	0	0	0
Compliance	88	146	41	44	35	31	39	32	32
Planning	3	5	5	5	5	5	5	0	0
Administration	714	1,324	881	884	762	566	520	480	1,186
TOTAL	805	5,991	4,047	5,200	8,150	1,302	1,261	1,212	3,318

REUSE PLANNING STATUS

Name of LRA Depot Redevelopment Corporation of Memphis and Shelby County

Status of the Redevelopment Plan: Completed and approved by LRA board, city and county

Projected Date of Installation-Wide Disposal and Reuse EA/EIS

Actual Date of Installation-Wide Disposal and Reuse EA/EIS: 199803

Final Property Disposal Date 200512

Type of NEPA.

Type of NEPA: EA

Actual/Projected projected

TABLE ES-1 BRAC CLEANUP PLAN ABSTRACT

	FOST	FOSL
Cumulative NUMBER Completed	0	8
Cumulative ACRES Completed	0	578
NUMBER Projected in Next Fiscal Year	1	0
ACRES Projected in Next Fiscal Year	2 24	0

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. RI, Screening and BRAC site sampling was completed 9/7/2. Contaminants include TCE, PCE, Dieldrin, DDT, DDE and heavy metals. BCT reviewed data to determine future actions and made many parcel category changes. Phase I construction of the Interim Remedial Action for Groundwater at Dunn Field is completed with the installation of 7 recovery wells and the discharge piping system. Phase II began 9/9/10 with the installation of four more recovery wells. Dieldrin contaminated soil removal project at the Military Family Housing units is completed. PCB contaminated soil removal project at "J" Street Cafeteria is completed. Dieldrin and PAH issues on remainder of Main Installation and Dunn Field will require Risk Assessment to make cleanup decisions. Dieldrin bioremediation study is completed and provides cleanup options for soil. Soil gas survey of Dunn Field is completed and the data was used to update the OU1 Field Sampling Plan. CWM fieldwork at Dunn Field, which included installation of six monitoring wells and soil sampling, is completed. Soil and groundwater samples indicate no CWM materiel or breakdown products have migrated from suspected burial locations. Main Installation and Dunn Field remedial investigations are complete and the documents in production. Engineering evaluations/cost analyses for removal actions at the old paint shop/maintenance area on the Main Installation and of CWM at Dunn Field has completed the public comment period. The paint shop/maintenance area Action Memorandum has been signed. UXO clearance of a suspected ordnance burn site at Parcel 36.29 will be accomplished under the Restoration Program.

	Site Name	Date
Final Remedy in Place/Response Complete	Mustard Gas Burial Site A	2004
Long-Term Monitoring	POL Burial	2012

COMPLIANCE PROGRAM

Summary

The facility operates under a state NPDES (stormwater) permit and has received no violations to date in FY99. MDC received a renewed NPDES permit. The three remaining city-issued air permits were closed in 1996. TDEC has terminated the hazardous waste container storage portion of the facility's RCRA Part B permit. The following have been completed: Radon survey, Lead-Based Paint survey, Radiological survey, Natural/Cultural Resources survey and Asbestos re-inspection. The two remaining permitted underground storage tanks were removed in July 1998 and the permits have been closed. The Nuclear Regulatory Commission has 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 former DDMT facility. Twenty warehouses and three guard buildings built in 1942 have been determined to be eligible for placement on the National Register of Historic Places. The Army Material 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

482 7

FAST-TRACK CLEANUP SUMMARY

Summary

The BCT 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 97/2. Additional sampling requested by the BCT was completed in 1998. The BCT reviewed the data, determined future actions and made several parcel category changes since 98/9. EPA concurred with the CERFA uncontaminated parcels letter report dated 1998/7, but noted that CERFA uncontaminated parcels, e.g. buildings, sitting above contaminated soil or groundwater would not receive EPA concurrence for transfer until completion of any required remedial actions or until appropriate land use controls were in place and incorporated into transfer documentation. Of the 188 46 acres designated ECP Category 1 through 4, EPA considers 129 32 currently available for transfer. ATSDR continues to update the 1995 Public Health Assessment for the Defense Depot Memphis, Tennessee. Frontline Corporate Communications hired a full-time community relations specialist for the MDC who grew up in the neighborhood and whose parents still live here. The specialist has worked with RAB members and community groups to increase community attendance at RAB meetings. The BCT hosted Community Information Sessions in 99/5 and 99/6 regarding the proposed removal action engineering evaluations/cost analyses. EPA

	Acres	Date
Cumulative CERFA Concurrence Acres	57 43	1998/10
	Date	Actual/Projected
BCT Adjournment		
RAB Adjournment		
Early Transfer Authority		

BCT REVIEW

		Reviewed	
		YES	NO
The BCP Abstract has been reviewed by the BCT.			
DoD BEC	Shawn Phillips	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Name		
US EPA BCT Member	Turpin Ballard	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Name		
State BCT Member	Jordan English	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Name		

ACRONYMS

<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

ACRONYMS

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
pCi/L	PicoCuries per liter
POL	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
RFA	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
TDEC	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 OF CONTENTS

EXECUTIVE SUMMARY	i
LIST OF ACRONYMS	xi
SECTION ONE INTRODUCTION AND SUMMARY.....	1-1
1.1 ENVIRONMENTAL RESPONSE OBJECTIVES	1-3
1.2 BCP PURPOSE, UPDATES, AND DISTRIBUTIONS	1-5
1.3 BCT/PROJECT TEAM	1-5
1.4 SITE DESCRIPTION AND HISTORY OF INSTALLATION.....	1-6
1.4.1 Site Description	1-6
1.4.2 Installation History and Mission.....	1-6
1.5 OFF-BASE PROPERTY/TENANTS	1-7
1.6 ENVIRONMENTAL SETTING.....	1-7
1.6.1 Physical Setting.....	1-7
1.6.2 Demographics	1-8
1.6.3 Climatology.....	1-9
1.6.4 Hydrology	1-9
1.6.5 Geology and Soils	1-10
1.6.6 Hydrogeology	1-11
1.7 HAZARDOUS SUBSTANCES AND WASTE MANAGEMENT PRACTICES	1-12
1.7.1 Hazardous Substance Activities.....	1-13
1.7.2 Waste Management Activities.....	1-15
SECTION TWO PROPERTY DISPOSAL AND REUSE	2-1
2.1 STATUS OF DISPOSAL PLANNING PROCESS.....	2-1
2.1.1 Redevelopment Plan.....	2-1
2.1.2 Disposal Process.....	2-3
2.1.3 National Environmental Policy Act Documentation.....	2-3
2.1.4 Disposal/Reuse Progress.....	2-5
2.2 RELATIONSHIP TO ENVIRONMENTAL PROGRAMS	2-5
2.3 PROPERTY TRANSFER METHODS.....	2-8
2.3.1 Federal Transfer of Property	2-8
2.3.2 No-Cost Public Benefit Conveyance.....	2-8
2.3.3 Negotiated Sale.....	2-9
2.3.4 Widening of Public Highways.....	2-9
2.3.5 Donated Property	2-9
2.3.6 Interim Leases.....	2-9
2.3.7 Competitive Public Sale	2-9

TABLE OF CONTENTS

2.3.8	Economic Development Conveyance	2-9
2.3.9	Caretaker of Property Until Disposal	2-10
SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS 3-1		
3.1	ENVIRONMENTAL PROGRAM STATUS	3-1
3.1.1	Restoration Sites	3-3
3.1.2	Installation-Wide Source Discovery and Assessment Status	3-15
3.2	COMPLIANCE PROGRAM STATUS	3-16
3.2.1	Storage Tanks	3-17
3.2.2	Hazardous Substance Management	3-18
3.2.3	Lead-based Paint	3-19
3.2.4	Hazardous Waste Management	3-20
3.2.5	Solid Waste Management	3-20
3.2.6	Polychlorinated Biphenyls	3-21
3.2.7	Asbestos	3-21
3.2.8	Radon	3-22
3.2.9	RCRA Facilities	3-22
3.2.10	Wastewater Discharges	3-22
3.2.11	Oil/Water Separators	3-23
3.2.12	Pollution Prevention	3-23
3.2.13	Medical Waste	3-23
3.2.14	Unexploded Ordnance	3-23
3.2.15	NEPA	3-24
3.2.16	Air Emissions	3-24
3.3	STATUS OF NATURAL AND CULTURAL RESOURCES	3-24
3.3.1	Vegetation	3-24
3.3.2	Wildlife	3-24
3.3.3	Wetlands	3-25
3.3.4	Designated Preservation Areas	3-25
3.3.5	Rare, Threatened, and Endangered Species	3-25
3.3.6	Cultural and Historical Resources	3-25
3.4	ENVIRONMENTAL CONDITION OF PROPERTY	3-26
3.4.1	Areas Where No Storage, Release, or Disposal Has Occurred	3-27
3.4.2	Areas Where Only Storage Has Occurred	3-28
3.4.3	Areas Where Storage, Release, Disposal, or Migration Has Occurred, but No Remedial Action is Required	3-31

TABLE OF CONTENTS

3.4.4	Areas Where Storage, Release, Disposal, or Migration Has Occurred and All Remedial Actions Have Been Taken	3-38
3.4.5	Areas Where Storage, Release, Disposal, or Migration Has Occurred and Action is Under Way but Not Final	3-47
3.4.6	Areas Where Storage, Release, Disposal, or Migration Has Occurred, but Required Response Actions Have Not Been Taken	3-47
3.4.7	Unevaluated Areas or Areas Requiring Additional Evaluation.....	3-52
3.4.8	Qualified Parcels	3-74
3.4.9	Suitability of Installation Property for Transfer by Deed...	3-75
3.5	STATUS OF COMMUNITY INVOLVEMENT	3-76
SECTION FOUR	INSTALLATION-WIDE STRATEGY FOR ENVIRONMENTAL RESTORATION.....	4-1
4.1	AREA DESIGNATION STRATEGY	4-1
4.1.1	Zone Designations	4-2
4.1.2	Sequence	4-3
4.1.3	Early Actions Strategy	4-3
4.1.4	Remedy Selection Approach	4-3
4.2	COMPLIANCE PROGRAM STRATEGY	4-4
4.2.1	Storage Tanks	4-4
4.2.2	Hazardous Materials/Waste Management	4-5
4.2.3	Solid Waste Management.....	4-5
4.2.4	Polychlorinated Biphenyls	4-5
4.2.5	Asbestos.....	4-6
4.2.6	Radon.....	4-6
4.2.7	RCRA Facilities	4-6
4.2.8	NPDES Permits.....	4-6
4.2.9	Oil/Water Separators.....	4-7
4.2.10	Unexploded Ordnance	4-7
4.2.11	Pesticides	4-7
4.2.12	Lead-Based Paint.....	4-7
4.3	NATURAL AND CULTURAL RESOURCES STRATEGY	4-7
4.3.1	Archaeological Resources	4-8
4.3.2	Historical Structures and Resources.....	4-8
4.3.3	Native American Resources.....	4-8
4.3.4	Threatened and Endangered Species.....	4-8
4.3.5	Sensitive Habitats.....	4-8

TABLE OF CONTENTS

4.3.6	Wetlands	4-8
4.3.7	Surface Waters	4-9
4.3.8	Floodplains	4-9
4.3.9	Paleontological Resources.....	4-9
4.4	COMMUNITY INVOLVEMENT/STRATEGY.....	4-9
SECTION FIVE	ENVIRONMENTAL PROGRAM MASTER SCHEDULES	5-1
5.1	ENVIRONMENTAL RESTORATION PROGRAM	5-1
5.1.1	Response Schedules	5-1
5.1.2	Requirements by Fiscal Year	5-1
5.2	COMPLIANCE PROGRAMS	5-2
5.3	NATURAL AND CULTURAL RESOURCES.....	5-2
5.4	BCT/PROJECT TEAM/RAB MEETING SCHEDULE	5-2
SECTION SIX	TECHNICAL AND OTHER ISSUES TO BE RESOLVED.....	6-1
6.1	DATA USABILITY.....	6-1
6.2	INFORMATION MANAGEMENT	6-1
6.2.1	BCT Action Items	6-2
6.2.2	Rationale	6-2
6.2.3	Status/Strategy.....	6-2
6.3	DATA GAPS	6-3
6.3.1	BCT Action Items	6-3
6.3.2	Rationale	6-4
6.3.3	Status/Strategy.....	6-4
6.4	BACKGROUND LEVELS	6-4
6.5	RISK ASSESSMENTS	6-5
6.6	BASE-WIDE REMEDIAL ACTION STRATEGY	6-6
6.7	GROUNDWATER INTERIM REMEDIAL ACTION AND LONG TERM GROUNDWATER MONITORING	6-6
6.8	EXCAVATION OF CONTAMINATED MATERIALS	6-7
6.9	PROTOCOLS FOR REMEDIAL DESIGN REVIEWS.....	6-7
6.10	CONCEPTUAL MODELS.....	6-7
6.11	CLEANUP STANDARDS	6-8
6.12	INITIATIVES FOR ACCELERATING CLEANUP.....	6-8
6.13	REMEDIAL ACTIONS	6-10
6.14	REVIEW OF SELECTED TECHNOLOGIES FOR APPLICATION OF EXPEDITED SOLUTIONS	6-10
6.15	HOT-SPOT REMOVALS.....	6-11
6.16	IDENTIFICATION OF CLEAN PROPERTIES	6-11

TABLE OF CONTENTS

6.17	OVERLAPPING PHASES OF THE CLEANUP PROCESS	6-12
6.18	IMPROVED CONTRACTING PROCEDURES	6-12
6.19	INTERFACING WITH THE COMMUNITY REDEVELOPMENT PLAN	6-13
6.20	BIAS FOR CLEANUP INSTEAD OF STUDIES	6-13
6.21	EXPERT INPUT ON CONTAMINATION AND POTENTIAL REMEDIAL ACTIONS	6-13
6.22	PRESUMPTIVE REMEDIES	6-13
6.23	PARTNERING (USING INNOVATIVE MANAGEMENT, COORDINATION, AND COMMUNICATION TECHNIQUES)	6-14
6.24	UPDATING THE EBS AND NATURAL/CULTURAL RESOURCES DOCUMENTATION	6-14
6.25	IMPLEMENTING THE POLICY FOR ON-SITE DECISION MAKING	6-14
SECTION SEVEN REFERENCES		7-1

List of Appendices

Appendix A	Fiscal Year Funding Requirements/Costs
Appendix B	Installation Environmental Restoration Documents Summary Table
Appendix C	Decision Document/Record of Decision Summaries
Appendix D	No Further Response Action Planned Summaries
Appendix E	Conceptual Model for Installation Restoration Program Cleanup and Other Relevant Documents

List of Tables

Table ES-1	BRAC Cleanup Plan (BCP) Abstract
Table 1-1	BCT/Project Team Members
Table 3-1	Potential Contamination Sites Associated With Operable Units
Table 3-2	Spill Response Summary
Table 3-3	Sources of Potential Contamination
Table 3-4	Underground Storage Tank Summary
Table 3-5	Aboveground Storage Tank Summary
Table 3-6	BRAC Parcel Descriptions
Table 3-7	Uncontaminated Category 1 Parcels
Table 3-8	Qualified Parcel Descriptions
Table 4-1	Cleanup Sequence
Table 4-2	Environmental Document Status

List of Figures

Figure 1-1	Site Location Map
Figure 1-2	Site Plan
Figure 1-2a	Functional Unit Location Map
Figure 1-4	Surface Drainage Map

TABLE OF CONTENTS

Figure 1-5	Potentiometric Surface Map of Fluvial Aquifer, dated September 1998
Figure 3-1	OU-1 (Dunn Field) Site Locations
Figure 3-2	OU-2 Site Locations
Figure 3-3	OU-3 Site Locations
Figure 3-4	OU-4 Site Locations
Figure 3-5	Environmental Condition of Property Map, Main Installation
Figure 3-6	Environmental Condition of Property Map, Dunn Field
Figure 5-1	Projected Master Restoration Schedule

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 by the Memphis Depot Caretaker Division Environmental Office in September 1999. 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.

As a result of past waste and resource management practices at the Depot, various hazardous substances or wastes have contaminated some areas. Federal law requires federal agencies to investigate and clean up, as necessary, environmental contamination to support the release and reuse of the property. To address these past practices, a number of environmental restoration programs have been initiated at the Depot. 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 Memphis Depot, the Environmental Protection Agency Region IV and the Tennessee Department of Environment and Conservation. 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 ONE**INTRODUCTION AND SUMMARY**

- 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 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 (No remedial action decision documents have been completed.)

SECTION ONE**INTRODUCTION AND SUMMARY**

- Appendix D contains summaries of No Further Action decision documents, as well as Finding of Suitability to Lease (FOSL) and Finding of Suitability to Transfer (FOST) documents produced during this period. (No decision documents or FOSTs have been completed.)
- Appendix E presents working conceptual models for environmental restoration at BRAC sites and presents other materials relevant to the BCP, including a summary of issues related to environmental justice at Depot, an administrative record index, 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, hazardous waste container storage permit closure from TDEC, a transformer inventory and test results, and radon survey test results for the Depot.

1.1 ENVIRONMENTAL RESPONSE OBJECTIVES

The Environmental Office of the Memphis Depot Caretaker Division 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;

SECTION ONE**INTRODUCTION AND SUMMARY**

- 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 schedules and deadlines;
- 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

SECTION ONE**INTRODUCTION AND SUMMARY**

- 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.

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; and
- Present schedules for restoration and compliance activities.

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 1999. Certain information presented in this BCP is derived from the final EBS, (November 1996), final Remedial Investigation Sites Letter Reports (May 1998), final Screening Sites Letter Reports (March 1998) and revised final BRAC Parcel Summary Reports (October 1998). 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 meetings are coordinated by the Depot's BRAC Environmental Coordinator (BEC). BCT meetings are the means of conducting periodic 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. The BCT is

SECTION ONE**INTRODUCTION AND SUMMARY**

supported by a project team consisting of technical, operational, reuse and administrative specialists, as needed. A list of the BCT and project team members and their roles and responsibilities are provided in Table 1-1.

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 (Figure 1-2), 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 CEHNC, EPA and TDEC divided the facility into four potential Operable Units (OUs) (Figure 1-2), and seven Functional Units (FUs) based on similar historical use for conducting baseline risk assessments (Figure 1-2a). The Main Installation is divided into three OUs (2 through 4) and six FUs (1 through 6 with groundwater being FU-7). 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. 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.

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,

SECTION ONE**INTRODUCTION AND SUMMARY**

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 a monitoring well upgradient from the Depot contained detectable chlorinated solvents. An investigation to identify the source of the chlorinated solvents is being planned.

1.6 ENVIRONMENTAL SETTING

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

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.

SECTION ONE**INTRODUCTION AND SUMMARY**

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 Road to the north. The Main Installation is highly developed and contains most of the buildings and material storage yards for the facility. There are approximately 118 buildings, 26 miles of railroad tracks and 28 miles of paved streets at the Depot. Approximately 126 acres are 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 Road 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 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.

SECTION ONE**INTRODUCTION AND SUMMARY**

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 1990 census data for Memphis and for Shelby County is listed below (Memphis and Shelby County Division of Planning and Development 1993).

Location	1990 Census Data
City of Memphis	610,337
Shelby County	826,330

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.

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

SECTION ONE**INTRODUCTION AND SUMMARY**

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 Typical" (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 1995b).

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

SECTION ONE**INTRODUCTION AND SUMMARY**

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 drained to well drained silty deposits. The soil in graded areas varies from clay to sandy silt. The permeability range for the soil is 4.4×10^{-4} to 1.4×10^{-3} centimeters per second (CH2M Hill 1995b). 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 1995b). 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.

The Fluvial and Memphis Sand Aquifers are separated by the Jackson Formation/Upper Claiborne Group, which generally consists of a high-plasticity clay of variable thickness. The depth to the top of

SECTION ONE**INTRODUCTION AND SUMMARY**

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 1995b).

Figure 1-5 presents the November 1998 potentiometric surface map of the Fluvial Aquifer at the Depot (CH2M Hill 1998a).

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 the 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. This area of apparent convergent flows is suspected to be 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 is planned as part of the ongoing RI/FS.

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

SECTION ONE**INTRODUCTION AND SUMMARY**

stockpiles have remained over the years and have been managed by the Defense National Stockpile. These stockpiles have recently been sold to private industry and are being 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
- 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).

SECTION ONE**INTRODUCTION AND SUMMARY**

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. 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,

SECTION ONE**INTRODUCTION AND SUMMARY**

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 is a RCRA generator of hazardous wastes in the Tennessee under generator number TN 4210020570. The majority of hazardous wastes generated by the Depot consist of hazardous substances that have reached shelf-life expiration dates and can 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 result 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 TDEC 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 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.

SECTION ONE**INTRODUCTION AND SUMMARY**

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

482 32

NAME	AFFILIATION	TELEPHONE NUMBER	ROLE/ RESPONSIBILITY
BRAC Cleanup Team Members			
Shawn Phillips	MDC	(901) 544-0611	BEC/DLA Representative
Jordan English	TDEC	(901) 368-7953	TDEC Representative
Turpin Ballard	EPA Region IV	(404) 562-8553	EPA Representative
Project Team Members (* indicates people on BRAC Cleanup Plan distribution list)			
Jim Morrison	TDEC	(901) 368-7958	Project Manager
Brian Deeken	TDEC	(901) 368-7955	Project Geologist
Denise Cooper	MDC	(901) 544-0610	Env. Protection Assistant
Jack Kallal	MDC	(901) 544-0614	Env. Protection Specialist
Mike Lee	MDC	(901) 544-0612	Env. Protection Specialist
* Kurt Braun	CESAM	(334) 690-3415	Construction Program Manager
* Dorothy Richards	CEHNC	(205) 895-1463	IRP Program Manager
Steve Dunn	CEHNC	(205) 895-1144	CWM Program Manager
Scott Bradley	CEHNC	(205) 895-1637	Environmental Scientist
David Ladd	USGS	(615) 837-4773	Project Geologist
Terry Flynn	Frontline	(888) 848-9898	Corporate Communications PM
Alma Moore	Frontline	(901) 544-0613	Community Relations Specialist/PM
* Greg Underberg	CH2M Hill	(423) 483-9032	Investigation/Design Contractor PM
Vijaya Mylavaram	CH2M Hill	(352) 335-7991	Risk Assessor
Charles Riggs	Sverdrup Environmental	(314) 770-4137	Construction Contractor PM
Virgil Jansen	Sverdrup Environmental	(314) 770-4025	Construction Contractor Site PM
Randy Reed	UXB International	(205) 430-2892	CWM Removal Contractor PM
BRAC Cleanup Plan distribution list (in addition to BRAC Cleanup Team/Project Team)			
Richard Isaac	AEC	(410) 436-6823	AEC Representative
Jeanne Masters	DLA	(703) 767-2672	DLA BRAC Office
Karen Moran	DLA	(703) 767-6237	DLA Environmental Office
Mike Dobbs	DDC	(717) 770-6950	DDC Environmental Office
Ron Marichak	DDC	(717) 770-7760	DDC BRAC Office
Jeff McCauslin	DDSP	(717) 770-7421	Deputy Director of Installations
John DeBack	MDC/ DODBTFO	(901) 544-0622	Site Manager/Base Transition Coordinator
Jim Covington	DRC	(901) 942-4939	Executive Director

Notes:

AEC:	Army Environmental Center	DRC:	Depot Redevelopment Corporation
BEC:	BRAC Environmental Coordinator	EPA:	Environmental Protection Agency
BRAC:	Base Realignment and Closure	IRP:	Installation Restoration Program
CWM:	Chemical warfare materiel	PM:	Project Manager
DDC:	Defense Distribution Center	MDC:	Memphis Depot Caretaker
DDSP:	Defense Distribution Depot Susquehanna, PA	DLA:	Defense Logistics Agency
DODBTFO:	Department of Defense Base Transition Field Office		
TDEC:	Tennessee Department of Environment and Conservation		

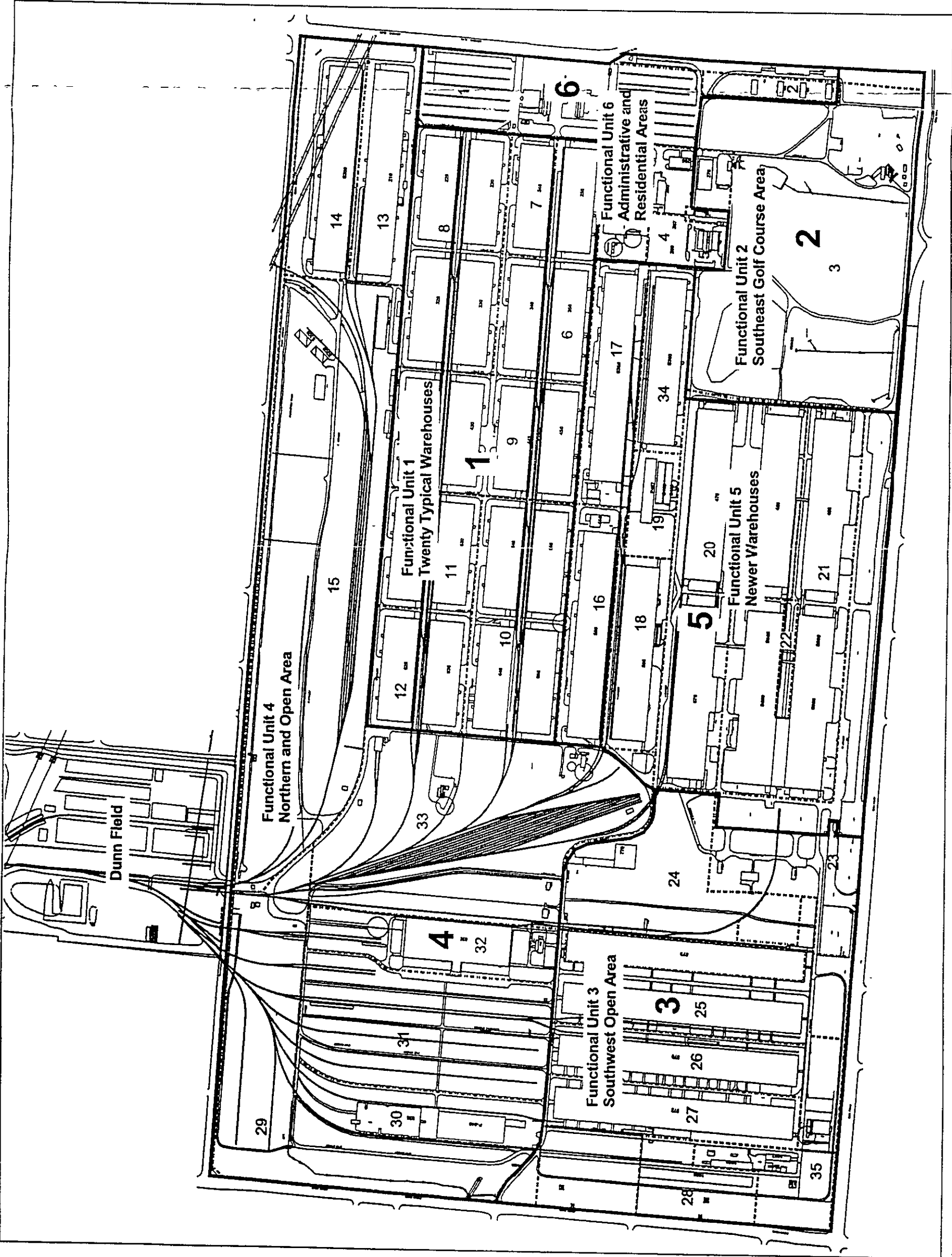


FIGURE 1-2a
FUNCTIONAL UNITS AT THE MAIN
INSTALLATION
MEMPHIS DEPOT

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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 is responsible for establishing and maintaining all environmental programs, compliance programs and remediation efforts at the Depot. These programs are executed by the Depot's Environmental Office. Three principal U.S. Army components assist the Depot's effort: CEHNC provides support in areas including RI/FS, remedial design, 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 proposed 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 fulfills the Site Management Plan requirements of the Federal Facilities Agreement signed by the Depot, EPA and TDEC.

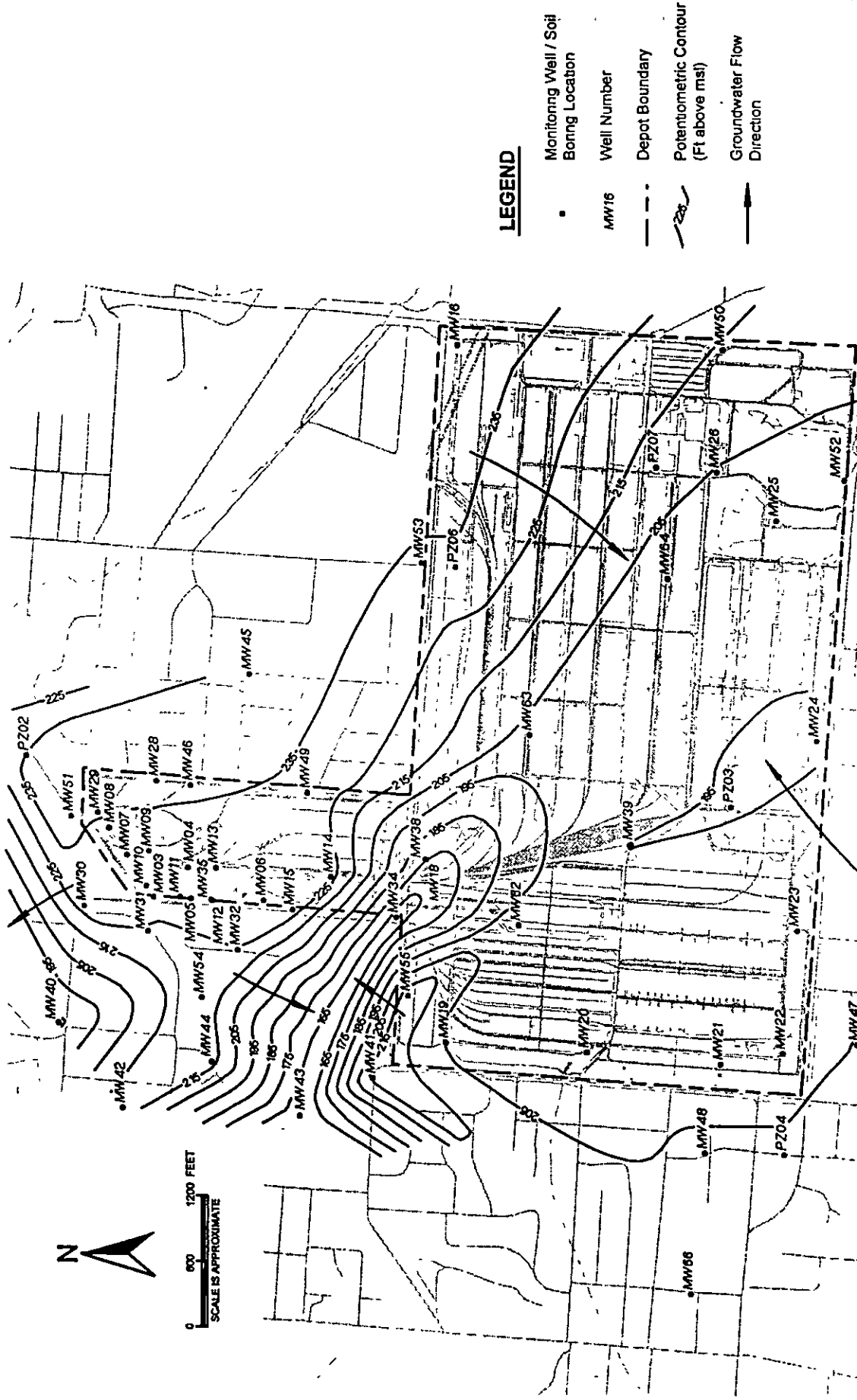
Environmental restoration programs at the Depot are currently conducted under the BRAC and non-BRAC environmental restoration programs in compliance with DLA, DA, DOD, local, state and federal statutes and regulations and in accordance with a Federal Facilities Agreement. Environmental compliance programs at the Depot are conducted 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 for approximately 15 years. An overview of some of the major milestones in the program and associated compliance programs for the installation 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

- 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 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 has instituted programs to ensure compliance with other environmental programs applicable to the current status of the Depot. The Depot requested and received closure of its air permits, UST permits and hazardous waste container storage permit. The Depot currently maintains a stormwater discharge permit and provides quarterly discharge monitoring reports to TDEC.
- In 1995, the Generic Remedial Investigation/Feasibility Study Work Plan was prepared to indicate how the remedial investigation and feasibility study would be accomplished; RI/FS field sampling plans were approved by EPA and TDEC for each OU (CH2M Hill 1995c, 1995d, 1995e, 1995f) and the Screening Sites (CH2M Hill 1995h), and a draft no-further-action report was prepared for 13 sites (CH2M Hill 1994).
- In 1996, a final ROD was approved by EPA 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. The BCT began reviewing this sampling data and changing the environmental condition of property categories for subparcels
- In 1998, construction of the IRA pump and discharge system was completed 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 Main Installation. Soil



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 Depot Redevelopment Plan.

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

SECTION TWO**PROPERTY DISPOSAL AND REUSE**

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 depot businesses 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 to the DRC in September 1997. Properties became available for sublease by the DRC through a 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 Main Installation that had not been included on a previous FOSL and was approved in August 1999. The DRC entered into its first sublease agreement in October 1997 with a private manufacturer generating the first 200 reuse jobs. Since then the Memphis Police Department has opened a precinct and operates the Street Crime Abatement Team from the former facilities maintenance area. Additional 100 new jobs were created by this activity.

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.

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

The process included 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.
- 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

SECTION TWO**PROPERTY DISPOSAL AND REUSE**

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.
- **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.

SECTION TWO**PROPERTY DISPOSAL AND REUSE**

- **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.

2.1.4 Disposal/Reuse Progress

The disposal process at the Depot is under way, following disposal process guidelines and in a manner consistent with proposed community reuse goals. To date, 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.

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:

- Federal property transfers to non-federal parties are governed by CERCLA Section 120(h)(3)(B)(i), Contents of Certain Deeds, and

SECTION TWO**PROPERTY DISPOSAL AND REUSE**

- 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 (commercial and light industrial). The redevelopment plan prepared by MDRA and the description of proposed action and alternatives in the disposal and reuse EA provide the current, best estimation of the future land use scenarios at the Depot.
- The Depot is proceeding with the investigation phase of the environmental restoration program. A RI for OU-1 through OU-4 and was completed in 1990, but did not fully define the nature and extent of impacts from hazardous substances releases. The 1990 RI also evaluated human health and ecological impacts at each suspected release site. The baseline risk assessment considered human health and

SECTION TWO**PROPERTY DISPOSAL AND REUSE**

ecological impacts of current and potential on-site and off-site receptors. RI field investigations are complete for the Main Installation and continue for Dunn Field. These documents provide sufficient data for the BCT to make cleanup decisions. DLA expects the Main Installation Remedial Investigation report to be completed in January 2000. Future Feasibility Studies (FS) for the Depot will evaluate the effectiveness of remedial actions in mitigating risk according to the proposed reuses of the property.

- DLA solicited and will continue to solicit 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). Future additional risk assessments as part of the ongoing RI will consider 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 document are designed to streamline and expedite the necessary response actions associated with contaminated parcels identified at the Depot, in order to facilitate the earliest possible transfer and reuse activities. Because of the need to 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. Table 2-1 summarizes information on the Depot parcels and provides an approximate timetable for transfer by deed of each parcel. The timetable for transfer of property by parcel was developed based on the DRC priorities for property transfer and an estimated schedule to clean up the parcel. The Depot considers a parcel available for transfer on the date when the associated

SECTION TWO**PROPERTY DISPOSAL AND REUSE**

Finding of Suitability to Transfer (FOST) has been signed by AMC. In order for a FOST to receive EPA and AMC approval, restoration activities must be complete.

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.

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 (see Table 2-1).

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

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.

2.3.7 Competitive Public Sale

Sale to the public would occur through either an invitation for bids or an auction. As of September 1999, 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

SECTION TWO**PROPERTY DISPOSAL AND REUSE**

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 DA plans to transfer the majority 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 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 current strength of 36 personnel assigned to the caretaker cadre in Oct 99 reflects the shrinking maintenance responsibility of the government as reuse activity increases.

TABLE 2-1
SUMMARY OF SUBPARCEL REUSE

SUBPARCEL NUMBER	AREA (acres)	POTENTIAL REUSE DESIGNATION	PROJECTED POST DATE ^a	TRANSFER MECHANISM	RECIPIENT
1.1	.01	Roadway	June 2001	EDC	DRC
1.2	.01	Security Gate	June 2001	EDC	DRC
1.3	<.01	TBD	June 2001	EDC	DRC
1.4	<.01	TBD	June 2001	EDC	DRC
1.5	.31	Office/Light Industrial	June 2001	EDC	DRC
1.6	.02	TDB	June 2001	EDC	DRC
1.7	<.01	TBD	June 2001	EDC	DRC
1.8	15.20	Office/Parking/Demolition	June 2001	EDC/PBC (DoJ)	DRC/Memphis Police Department
2.1 - 2.7	2.38	Residential	December 1999	PBC (HUD)	TBD
3.1 - 3.4	.14	Recreation	May 2003	PBC (DoI/NPS)	Memphis Park Commission
3.5 - 3.11	41.44	Recreation/Golf Course/Stormwater drainage	May 2003	PBC (DoI/NPS)	Memphis Park Commission
4.1 - 4.4, 4.8, 4.11 - 4.13	1.30	Office/Light Industrial	June 2001	EDC	DRC
4.5 - 4.7, 4.9, 4.10	5.36	Office/Light Industrial	June 2001	EDC	DRC
5.1	.49	Office/Light Industrial	June 2001	EDC	DRC
5.2	1.5	Food Prep/Office/Light Industrial	June 2001	EDC	DRC
6.1	4.4	Office/Light Industrial	November 2003	EDC	DRC
6.2 - 6.4	8.4	Office/Light Industrial	November 2003	EDC	DRC
7.1	1.5	Office/Light Industrial	November 2003	EDC	DRC
7.2	2.8	Office/Light Industrial	November 2003	EDC	DRC
8.1	6.4	Office/Light Industrial	November 2003	EDC	DRC
8.2 - 8.5	11.2	Office/Light Industrial	November 2003	EDC	DRC
9.1	6.3	Office/light Industrial	November 2003	EDC	DRC
9.2 - 9.5	11.2	Office/Light Industrial	November 2003	EDC	DRC
10.1, 10.4, 10.5, 10.6	11.2	Office/Light Industrial	November 2003	EDC	DRC
10.2, 10.3	8.95	Office/Light Industrial	November 2003	EDC	DRC
11.1	4.6	Office/Light Industrial	November 2003	EDC	DRC
11.2 - 11.4	8.4	Office/Light Industrial	November 2003	EDC	DRC
12.1	1.7	Office/Light Industrial	November 2003	EDC	DRC

TABLE 2-1
SUMMARY OF SUBPARCEL REUSE

SUBPARCEL NUMBER	AREA (acres)	POTENTIAL REUSE DESIGNATION	PROJECTED FOST DATE ²	TRANSFER MECHANISM	RECIPIENT
12.2	2.8	Office/Light Industrial	November 2003	EDC	DRC
13.1 - 13.4	5.5	Office/Light Industrial/Demolition	November 2003	EDC	DRC
13.5	3.9	Office/Light Industrial	November 2003	EDC	DRC
14.1	<.01	TBD	November 2003	EDC	DRC
14.2	10.5	TBD	November 2003	EDC	DRC
15.1, 15.2	01	Security Gate/Roadway	November 2003	EDC	DRC
15.3 - 15.6	47.79	Light Industrial/Demolition	November 2003	EDC	DRC
16.1	2.8	Roadway	June 2001	EDC	DRC
16.2	5.5	Demolition/Roadway	June 2001	EDC	DRC
17.1, 17.3	5.59	Demolition/Roadway	June 2001	EDC	DRC
17.2	3.7	Roadway	June 2001	EDC	DRC
18.1 - 18.2	6.6	Office/Light Industrial	June 2001	EDC	DRC
19	2.81	Parking/Light Industrial/Demolition	June 2001	EDC	DRC
20.1 - 20.4	15.46	Office/Light Industrial	May 2003	EDC	DRC
20.5 - 20.6	26.90	Office/Light Industrial	May 2003	EDC	DRC
21.1 - 21.4	15.93	Office/Light Industrial	May 2003	EDC	DRC
21.5	32.9	Office/Light Industrial	May 2003	EDC	DRC
22	1.24	Office/Light Industrial	May 2003	EDC	DRC
23.1 - 23.5	.33	Office/Parking	May 2003	EDC	DRC
23.6, 23.9 - 23.11	26.75	Parking/Roadway	May 2003	EDC	DRC
24	18.5	Light Industrial/Parking/Roadway/Demolition	May 2004	EDC	DRC
25.1	6.2	Light Industrial/Demolition	May 2004	EDC	DRC
25.2	12	Light Industrial/Demolition	May 2004	EDC	DRC
26.1	4.7	Light Industrial/Demolition	May 2004	EDC	DRC
26.2	6.2	Light Industrial/Demolition	May 2004	EDC	DRC
27.1	4.4	Light Industrial/Demolition	May 2004	EDC	DRC
27.2	6.3	Office/Light Industrial	May 2004	EDC	DRC

**TABLE 2-1
SUMMARY OF SUBPARCEL REUSE**

SUBPARCEL NUMBER	AREA (acres)	POTENTIAL REUSE DESIGNATION	PROJECTED FOST DATE ^a	TRANSFER MECHANISM	RECIPIENT
28.1	6.0	Light Industrial	May 2004	EDC	DRC
28.2	6.31	Light Industrial/Demolition	May 2004	EDC	DRC
29.1	.01	Light Industrial/Demolition	May 2004	EDC	DRC
29.2, 29.3	30.53	Light Industrial/Parking	May 2004	EDC	DRC
30.1	1.4	Office/Light Industrial	May 2004	EDC	DRC
30.4	1.4	Light Industrial/Demolition	May 2004	EDC	DRC
30.2, 30.3, 30.5	6.97	Light Industrial/Parking	May 2004	EDC	DRC
31	23.7	Light Industrial/Demolition	May 2004	EDC	DRC
32.1, 32.2	8.2	Office/Light Industrial	May 2004	EDC	DRC
32.3	2.3	Light Industrial/Demolition	May 2004	EDC	DRC
33.1 - 33.6, 33.10 - 33.11	.66	Light Industrial/Demolition	May 2004	EDC	DRC
33.7 - 33.9	39.58	Light Industrial/Demolition	May 2004	EDC	DRC
34	6.7	Office/Light Industrial	June 2001	EDC	DRC
35	9.57	Light Industrial	May 2004	EDC	DRC
36 (along eastern fenceline)	0.50	Roadway	May 2001	PBC (DoT)	Memphis Highway Administration
36 (northeast corner)	TBD	Recreation	May 2001	PBC (DoI)/NPS	Memphis Park Commission
36 (remaining acreage)	TBD	TBD	May 2001	Public Sale	TBD

Note:

DRC	Depot Redevelopment Corporation	NPS	National Park Service
TBD	To be determined	HUD	Department of Housing and Urban Development
EDC	Economic Development Conveyance	DoT	Department of Transportation
PBC	Public Benefit Conveyance	MIFA	Memphis Inter Faith Association
DoED	Department of Education		
DoJ	Department of Justice		
DoI	Department of Interior		

- a. The projected FOST date is the date the parcel has completed the Finding of Suitability to Transfer (FOST) approval process through the Army Materiel Command

and groundwater sampling for chemical warfare materiel (CWM) at Dunn Field was completed.

- In 1999, engineering evaluation/cost analysis documents were prepared proposing soil removal at the old maintenance shop and paint facility as well as for CWM disposal locations at Dunn Field. The draft CWM Site Safety Submission has been reviewed by EPA and TDEC and will be forwarded for review and approval to the Department of Army and the Department of Health and Human Services. 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 anticipated to be installed by the end of the year.

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 RI/FS process is managed by the BCT. The Depot and CEHNC implement BCT 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:

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

- 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 Main Installation has been 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. Sources of potential contamination at the Depot are further grouped into remedial investigation (RI) sites, proposed early removal (ER) sites, screening sites, proposed no further action (NFA) sites, chemical warfare materiel (CWM) sites, and Topographic Engineering Center (TEC) sites that are areas identified from historical U.S. Army aerial photographs of the Depot.

RI sites are those sites for which an RI/FS will be conducted to evaluate the nature and extent of contamination and the risk to human health and the environment and to screen potential cleanup actions. Detailed field sampling plans have been developed for these sites for each OU. These sites will be characterized based on sampling and analysis results (CH2M Hill 1995b).

The goal of the ER program at the Depot is to remove contamination at selected ER sites as soon as possible, thus expediting clean up of potential sources of contamination. 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

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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 (CH2M Hill 1995i)

Screening sites are those sites where additional information is needed to determine if an RI or NFA determination is warranted. The screening sites identified in the RFA (A.T. Kearney, Inc. 1990) and a 1990 remedial investigation report (Law Environmental 1990b) are. (1) areas where hazardous substances were managed and where there is potential for substance releases to have occurred, or (2) minor waste disposal areas used during past operations, based on historical records. A wide variety of sites are included in this category: stormwater drainage ditches, fuel storage areas, known and suspected spill areas, areas where hazardous substances were used and may have been released and areas where pesticides have been applied (railroad tracks and vegetation).

Twelve sites are proposed for NFA for one or more of the following reasons:

- Hazardous substances were never managed or disposed of at the site
- The site is not a threat for releases because of past waste management activities
- Previous sampling results have shown no observed contamination
- Extensive prior removal or remediation activities were conducted
- Current operational and structural features make NFA probable

A draft proposed NFA report was prepared by the Depot (CH2M Hill 1994) that has not yet received regulatory approval. A draft Basis for No Further Action Recommendations technical memorandum is being prepared and documents the available information on these sites and the rationale for the proposed NFA recommendation.

There are four documented locations within Dunn Field where chemical warfare materiel (CWM) was disposed. The documented CWM sites of concern at Dunn Field are listed below:

- Mustard bomb decommissioning site (Site 24)
- Ashes and metals burial site (Site 9)
- Chemical Agent Identification Sets (CAISs) burial site (Site 1)

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

- Food burial site reported to contain CAISs (Site 86)

Because CWM was disposed at Dunn Field at known and unknown locations, and because of the proximity of Dunn Field to residences, the Depot has requested assistance from agencies responsible for CWM investigation and disposition. (1) CEHNC, (2) the U S Army Program Manager for Chemical Demilitarization and (3) the U.S. Army Technical Escort Unit.

These three agencies and the Depot have developed a strategy to evaluate the presence of CWM at the facility and to investigate sites where the potential for CWM exists (CH2M Hill 1995c). The strategy selected to accommodate both the CWM and the hazardous waste components of the project includes the three-phased approach described below.

1. Conduct an initial investigation focused on the known and suspected CWM sites at the facility to evaluate and delineate the presence, nature and extent of potential CWM contamination at Dunn Field and to provide information for CEHNC to prepare a Site Safety Submission for review by the Department of Army (DA) and the Department of Health and Human Services (DHHS). The field investigation activities were conducted in 1998. EPA and TDEC have reviewed and provided comments on a draft Site Safety Submission. The final submission is scheduled to be forwarded by the end of the year to the DA and the DHHS for review and approval.
2. Prepare an addendum to the Remedial Investigation OU-1 Field Sampling Plan and Screening Site Field Sampling Plan to include data resulting from a soil gas evaluation Conduct RI and screening site sampling practicing avoidance of areas identified by CEHNC as suspected CWM sites. The RI and screening site sampling was conducted in 1998.
3. Conduct necessary CWM removal actions based on the results of the initial field investigation. Soil samples will be collected from the CWM removal action excavations and the analyses used in the Dunn Field RI/FS. An engineering evaluation/costs analysis proposing the removal of soils associated with CWM Sites 1, 9 and 24 has been prepared and has completed the public comment process. An action memorandum for this proposed removal action is scheduled to be signed by the end of the year.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

Upon a review of historical aerial photographs provided by the U.S Army Topographic Engineering Center, four areas were identified as potential sources of contamination. The four additional sites are listed below.

- TEC 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.
- TEC 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.
- TEC 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.
- TEC Site 93 - Mallory Avenue Ground Star. Evident in photographs from 1949 until 1953, this area consisted of disturbed ground in the grassy area between the Depot fenceline 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. (CH2M Hill 1995b).

OU-1: Dunn Field

Dunn Field, OU-1, is an open, unpaved area located north of and across Dunn Road from the Main Installation. 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

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

techniques. Operable Unit 1 includes the potential contamination sites shown on Table 3-1 and Figure 3-1.

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 burial of wastes has been documented by the Depot, documented in other environmental studies or discovered during the 1990 RI (Law Environmental 1990b). Soil samples collected in Dunn Field during previous investigations indicated the presence of pesticides at concentrations up to 0.48 milligrams per kilogram (mg/kg) and polycyclic aromatic hydrocarbons (PAHs) at concentrations up to 220 mg/kg.

Groundwater monitoring wells were installed in the uppermost (fluvial) aquifer in the area by the U.S. Army Environmental Hygiene Agency in 1982 and by Law Environmental during RI fieldwork conducted from 1989 through 1990. Groundwater monitoring data collected during the 1990 RI fieldwork and presented in the 1990 RI report (Law Environmental 1990b) indicated levels of volatile organic compounds (VOCs) at concentrations up to 5.1 milligrams per liter (mg/L) and metals at concentrations up to 35 mg/L (including chromium, lead, and mercury) that suggest contamination has migrated to groundwater. The individual source or sources of contamination have not been determined.

During the 1990 RI fieldwork, monitoring wells were installed in the Fluvial Aquifer and the Memphis Sand Aquifer. Contaminants of concern in groundwater collected from the Dunn Field monitoring wells screened in the Fluvial Aquifer include the following:

- Volatile organic compounds
 - Carbon tetrachloride
 - 1,2-Dichloroethylene
 - 1,1,2,2-Tetrachloroethane
 - 1,1-Dichloroethylene
 - Tetrachloroethylene
 - Trichloroethylene

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

- Metals
 - Arsenic
 - Barium
 - Chromium
 - Lead
 - Nickel

The contaminants of concern found in the Fluvial Aquifer beneath Dunn Field were detected at concentrations above the established maximum contaminant levels and maximum contaminant level goals over the course of three sampling efforts conducted in 1989, 1990 and 1992. Contaminants of concern in the Fluvial Aquifer have not been detected in the Memphis Sand Aquifer groundwater samples.

In 1990, as part of Law Environment's remedial investigation, a preliminary risk assessment was performed. Potential exposure points for contaminated groundwater sources from the Dunn Field area were identified as.

- Ingestion of groundwater through the public water supply
- Contact with potable water during bathing
- Inhalation of vapors from VOCs in potable water during household use

The Fluvial Aquifer, which is not used as a potable water supply, is the only aquifer where contaminants have been detected. However, locally the Fluvial Aquifer may be in hydrologic communication with the Memphis Sand Aquifer. This potential communication could provide a pathway for contaminants to migrate downward to the Memphis Sand Aquifer, the drinking water aquifer for the city of Memphis.

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

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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.

In 1996, a final Record of Decision for the Interim Remedial Action for Groundwater at Dunn Field (OU-1) was prepared for the Depot (CH2M Hill 1995g). The Depot received EPA concurrence on this 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 fenceline of Dunn Field to create a hydraulic barrier to prevent further migration and to remove contaminated groundwater. EPA and TDEC, during BCT meeting IRA design discussions and via design reviews, approved the well locations. Construction was completed in September 1998 and the system was fully operational in October 1998. The BCT has approved installation of four additional recovery wells to enhance the systems performance.);
- 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 analysis 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

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

reports per the permit. After the first year of pumping, the reporting frequency will be quarterly.);

- 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.

OU-2: Southwestern Quadrant, Main Installation

Operable Unit 2 is geographically located in the southwestern quadrant of the Main Installation 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 the potential contamination sites shown on Table 3-1 and Figure 3-2 and, for baseline risk assessment purposes, Functional Units 3 and 7 (groundwater under the Main Installation) as shown on Table 1-2a.

One soil boring (yielding three samples) and 15 surface soil samples were collected in OU-2 during previous investigations. These samples were collected in an effort to better characterize the former hazardous materials recoupment area, the maintenance shop and the sandblasting/painting areas. In general, sample analysis detected the presence of pesticides (up to 7.4 mg/kg), PCBs (up to 10 mg/kg) and PAHs (up to 8.1 mg/kg) at the sandblasting/painting area and pesticides (up to 0.052 mg/kg), solvents (up to 0.11 mg/kg) and PAHs (up to 18 mg/kg) in the area of the maintenance shop. Groundwater investigations in OU-2 have indicated the presence of solvents (up to 0.039 mg/L) and metals (up to 0.75 mg/L).

During late calendar year 1996 and early 1997, 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-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 Main Installation.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

Because the facility was divided into subparcels to facilitate property transfer, these sampling results are 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.

Based on the sampling results and the priority for reuse of the area, the Depot has proposed a removal action for certain soil areas and buildings within Parcels 35 and 28. The final Main Installation Remedial Investigation report is scheduled to be completed in January 2000. The final Main Installation Feasibility Study report is scheduled to be completed by February 2000. The proposed plan is scheduled to be completed and in the Depot's information repositories for public review and comment by March 2000 with the final record of decision scheduled to be completed in November 2000.

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, Functional Units 2, 5, 6, most of 1 and 7 (groundwater under the Main Installation) as shown on Table 1-2a. In general, soil samples collected in OU-3 (seven surface soil samples) were insufficient to characterize individual sites or sources. Groundwater analysis in OU-3 detected VOCs (up to 0.01 mg/L) and metals (up to 1.96 mg/L). Surface water and sediment samples were collected from Lake Danielson, the golf course pond and from storm drainage ditches. Surface water samples collected in the drainageways generally indicated slightly higher levels of pesticides (up to 0.0022 mg/L) than did samples from either Lake Danielson or the golf course pond. Sediments collected from both Lake Danielson and the golf course pond indicated the presence of pesticides (up to 2.9 mg/kg) and PAHs (up to 2.4 mg/kg).

During late calendar year 1996 and early 1997, 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.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

Additional soil and groundwater sampling occurred in 1998 to further define the source, nature and extent of groundwater contamination at the Main Installation. 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 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 indicated dieldrin levels did not pose an unacceptable risk to golfers or to children and teenagers playing on the softball field or playground.

Two removal actions were completed in 1999. Soil with dieldrin levels above EPA's residential risk-based concentration were removed from the military family housing area (Subparcel 2.7). This removal action is documented in the Post Removal Report, Family Housing Area, Memphis Depot, Tennessee, Volumes I and II, 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, Memphis Depot, Tennessee, and the EPA and TDEC have concurred that the action was successfully completed.

Because the facility was divided into subparcels to facilitate property transfer, these sampling results are 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.

The final Main Installation Remedial Investigation report is scheduled to be completed in January 2000. The final Main Installation Feasibility Study report is scheduled to be completed by February 2000. The proposed plan is scheduled to be completed and in the Depot's information repositories for public review and comment by March 2000 with the final record of decision scheduled to be completed in November 2000.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS***OU-4: North-Central Area, Main Installation***

Operable Unit 4 is located in the northern and central sections of the Main Installation. 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 Main Installation 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 Functional Units 4 and 7 (groundwater at the Main Installation) as well as a small portion of 1 as shown on Figure 1-2a.

The most prominent IRP feature of OU-4 is the former hazardous materials warehouse (Building 629), designated as Site 57. Pesticides (up to 59 mg/kg), PAHs (up to 280 mg/kg) and VOCs (up to 970 mg/kg) were detected in soil samples near Site 57 during the 1990 RI (Law Environmental 1990b). 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.

Surface and subsurface soil samples collected and analyzed in 1990 revealed the presence of pesticides (up to 0.079 mg/kg) and solvents (up to 0.005 mg/kg). Surface and subsurface soil samples were also collected from areas where past spills had occurred. Sample results indicated the presence of PAHs (up to 17 mg/kg), pesticides (up to 5.9 mg/kg) and metals (up to 2,420 mg/kg). The results of groundwater samples collected in OU-4 indicated the presence of solvents (up to 0.12 mg/L), pesticides (up to 0.0021 mg/L) and metals (up to 0.91 mg/L).

During late calendar year 1996 and early 1997, 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 Main Installation.

Because the facility was divided into subparcels to facilitate property transfer, these sampling results are organized by subparcel and may be found in Section 3.4, Environmental Condition of Property.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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.

The final Main Installation Remedial Investigation report is scheduled to be completed in January 2000. The final Main Installation Feasibility Study report is scheduled to be completed by February 2000. The proposed plan is scheduled to be completed and in the Depot's information repositories for public review and comment by March 2000 with the final record of decision scheduled to be completed in November 2000.

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.

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 indicates no unacceptable risk) and soil south of Building 873 (cleanup decision will occur upon receipt of the Main Installation Remedial Investigation baseline risk assessment). These areas of concern were addressed according to the strategy described in Section 4. As part of the current Main Installation Remedial Investigation, aerial photographs of the Depot, including Dunn Field, 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

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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 star at the grass area between the Depot fenceline and Perry Road across from Mallory Avenue. These new areas of concern were addressed according to the strategy described in Section 4.

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 which 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 has maintained various permits and registrations with federal, state and local agencies in compliance with environmental regulations. These include UST permits, hazardous waste generator activities permit, an industrial wastewater discharge agreement, a stormwater permit, and air emission permits. The stormwater permit and industrial wastewater discharge agreement 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

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

permitted USTs were removed in 1998, and the Depot received closure approval from TDEC in December 1998. 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

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. Compliance and environmental restoration activities related to these storage tanks are described in this section.

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. Two USTs are currently regulated under the TDEC 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.

A complete inventory of the USTs on the Depot 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 are conducted under federal requirements including 40 Code of Federal Regulations (CFR) Parts 110, 112 and 116, and TDEC oil pollution prevention regulations.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

There are 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. Two ASTs remain active in support of the Depot's fire suppression system and computer network emergency generator. The remaining three ASTs will be relocated by the DRC to the staging area at the east end of Building 360 during construction of the entrance boulevard. The Depot no longer maintains these three ASTs. According to the DRC, these ASTs are empty and inactive.

In compliance with 40 CFR Part 112 and TDEC oil pollution regulations, the Depot maintains a spill prevention, control and countermeasures (SPCC) plan. The SPCC plan identifies the location of storage areas and outlines control measures to be taken in the event that a release should occur.

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 close-out survey program established for facilities being vacated. Hazardous substances found abandoned during these close-out surveys were identified, and arrangements were made for the proper disposal of the materials in compliance with regulatory requirements.

Maintenance activities currently conducted on the Depot involve the management of a small amount of hazardous substances. These substances include paints and thinners, herbicides, pesticides, cleaning solvents, battery acid, boiler treatment chemicals and janitorial supplies.

Hazardous substances present at the Depot are 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. The Depot maintains material safety data sheets as required by the Occupational Safety and Health Administration (OSHA) for all hazardous substances used by Depot personnel.

Prior to closure, extremely 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

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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 is currently 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.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

3.2.4 Hazardous Waste Management

Hazardous waste compliance programs at the Depot are conducted under DLAM 6050.1 and 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 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 installation hazardous waste management plan, which was last revised in January 1996. The plan identifies responsibilities and outlines operational requirements for the storage, disposal, treatment and transportation of hazardous waste.

TDEC closed the Depot's hazardous waste container storage permit effective October 22, 1998. There are no over-90-day hazardous waste storage locations within Depot property. Hazardous waste is accumulated at designated shop accumulation areas. Wastes are held for less than 90 days, then transported offsite for recycling/disposal via a contracted licensed waste vendor.

Used oil continues to be generated at the Depot. Used oil from vehicle maintenance operations is stored in appropriate drums and transported offsite for recycling via a contracted licensed waste vendor.

3.2.5 Solid Waste Management

Solid waste management compliance programs at the Depot are conducted under DLAM 6050.1 and the federal requirements found in 40 CFR 240-246 and 40 CFR 257-258, Department of Transportation regulations and TDEC solid waste regulations

Municipal solid waste currently generated at the Depot is collected and transported to the Browning-Ferris Industries North Shelby or South Shelby Sanitary Landfill for disposal.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

3.2.6 Polychlorinated Biphenyls

The PCB management compliance programs at the Depot are 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 are 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 has removed all PCB-containing transformers and disposed the equipment through a DRMO waste contract.

All remaining fluorescent light ballasts that may or may not contain PCBs are handled as if they do contain PCBs and are collected and transported for recycling/disposal via contract with a licensed waste vendor.

3.2.7 Asbestos

The EPA, OSHA and the Memphis/Shelby County Health Department regulate asbestos-containing material (ACM). The Depot manages 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 that had 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

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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 are 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 3.2.3.

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.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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 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 used only to wash grass off lawn maintenance equipment.

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, batteries, old tires, paper, aluminum and plastic.

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. 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.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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 archeological 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.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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. 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

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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.

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 BRAC Cleanup Team from August 1997 through September 1998 has identified several additional Category 1 subparcels, bringing the total to 56 subparcels and the acreage to 57.43 acres of Category 1 subparcels. 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 EPA has concurred with these

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

Category 1 subparcels via letter dated October 20, 1998 (Appendix E). The designated Category 1 subparcels are summarized in Table 3-7.

3.4.2 Areas Where Only Petroleum Release or Disposal Has Occurred

The Category 2 subparcels listed below are areas where only release or disposal of petroleum products has occurred. A total of 7 subparcels, totaling 8.01 acres, have been designated as Category 2.

Subparcel Number and Label 4.6(2)

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 during construction of the entrance boulevard. 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 residue 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. At the September 1997 meeting, the BCT changed this subparcel to a Category 6 due to the scheduled underground storage tank removal project. Upon receipt of UST closure approval by TDEC-UST in December 1998, the BCT agreed that this subparcel change from ECP Category 6 to Category 2.

Subparcel Number and Label 4.7(2)

CERFA Map Location 28,10

This subparcel is associated with Buildings 256 and 257 and Screening Site 67. The DRC demolished both buildings 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 are reported for this building, including: one 2-gallon gasoline spill reported on April 20, 1990, outside of Building 257; 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 residue 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). One soil sample taken during the 1990 Law RI detected

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

PAHs, dieldrin and metals. During Screening Site sampling, two surface soil and two shallow soil boring samples were collected (CH2M Hill, 1998c). Samples indicated arsenic and dieldrin in surface soils at levels that exceeded BCT screening criteria. Two underground storage tanks (18,000 and 20,000 gallons) were removed in 1998 from the open land area south of Bldg. 257. At the September 1997 meeting, the BCT changed this subparcel to a Category 6 due to the scheduled underground storage tanks removal project. Additional soil samples were collected after completion of the tank removal project and results indicated no levels that exceeded BCT screening criteria(c). Upon receipt of UST closure approval from TDEC-UST in December 1998, the BCT agreed this subparcel should change from ECP Category 6 to Category 2.

Subparcel Number and Label 20.1(2)PR

CERFA Map Location 21,5

This subparcel is associated with Building 489. A 1-gallon oil spill was reported on November 3, 1995 at the north dock of Building 489, Section 4. The Spill Team responded, applied absorbent and disposed of the residue in accordance with federal, state and local regulations. This subparcel became a Category 2 due to the Category definition change that occurred after the 1996 Environmental Baseline Survey categorized this subparcel as a Category 3. In December 1998, the BCT concurred that this subparcel change to a Category 2 based on the new ECP definitions and release of a petroleum product. This subparcel became a Category 2 due to the Category definition change that occurred after the 1996 Environmental Baseline Survey.

Subparcel Number and Label 23.9(2)

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. One BRAC soil boring and surface soil sample was collected from the center of the suspected spill area. 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 that this subparcel change to a Category 3. October 1997 discussions regarding this subparcel did not take the definition change into account when determining this parcel's ECP category. In December 1998, the BCT concurred that this subparcel change from ECP Category 3 to Category 2 based on the new ECP definitions and release of a petroleum product. This subparcel

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

became a Category 2 due to the ECP definition change that occurred after the 1996 Environmental Baseline Survey

Subparcel Number and Label 26.2(2)**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 that this subparcel change from ECP Category 7 to Category 2 based on the release of a petroleum product.

Subparcel Number and Label 33.6(2)HR**CERFA Map Location 13,13**

This subparcel is associated with the open land area outside Building 737 and proposed No Further Action Site 44 (Former Wastewater Treatment Unit). A 50-gallon mineral oil (<1 ppm PCB) spill was reported on November 9, 1995, outside of Building 737. The Spill Team responded, excavated contaminated material and disposed of it in accordance with federal, state and local regulations. Proposed No Further Action 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 agreed Category 4 was not appropriate, as the release involved a petroleum product, and agreed the subparcel should change from an ECP Category 4 to a Category 2.

Subparcel Number and Label 33.11(2)**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. Soil was sampled for Total Petroleum Hydrocarbons and

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

found to be less than 20 ppm. The 1996 Final Environmental Baseline Survey determined this subparcel to be an ECP Category 2 and the BCT concurred.

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 the Environmental Division. A total of 22 subparcels, encompassing 59.78 acres, have been identified as Category 3.

Subparcel Number and Label 4.4(3)PS/PR/HS/HR

CERFA Map Location 30,9

This subparcel is associated with Building 260, proposed No Further Action Site 41 (Satellite Drum Accumulation Area) and proposed No Further Action Site 30 (Safety Kleen Units). The RCRA Facility Assessment visual inspection noted staining on the floor in the sign shop of this building. 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 ECP Category 3 and the BCT concurred.

Subparcel Number and Label 4.8(3)

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 Screening Site (SS) 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. Soil borings were sampled during the Screening Site Sampling Program. Sample results indicate no levels that exceeded BCT screening criteria (CH2M Hill, 1998c). 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 concern that petroleum products and antifreeze may have been released.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

(CH2M Hill, 1998c). In June 1998, the BCT again concurred that this subparcel change from an ECP Category 7 to a Category 3.

Subparcel Number and Label 5.1(3)**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. One Remedial Investigation (associated with Site 58 - Pad 267) soil sample and one BRAC soil sample were collected. Sample results indicated no levels that exceeded the BCT screening criteria(c). At the September 1997 meeting, the BCT concurred that this subparcel change from ECP Category 7 to a Category 3.

Subparcel Number and Label 6.2(3)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 (CH2M Hill, 1998c). Staining due to acid leaks from batteries in the fork lift area were 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 release of battery acid. In June 1998, the BCT again concurred that this subparcel change from an ECP Category 7 to a Category 3.

Subparcel Number and Label 6.4(3)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 (CH2M Hill, 1998c). Staining due to acid leaks from batteries in the fork lift area were 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 release of battery acid. In June 1998, the BCT again concurred that this subparcel change from an ECP Category 7 to a Category 3.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

Subparcel Number and Label 9.3(3)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 (CH2M Hill, 1998c). Staining due to acid leaks from batteries in the fork lift area were 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 release of battery acid. In June 1998, the BCT again concurred that this subparcel change from an ECP Category 7 to a Category 3.

Subparcel Number and Label 10.1(3)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. In addition, leaking containers of paint/lube oil/insecticide and other oil were reported on May 16, 1990, outside Building 649. The Spill Team responded, applied absorbent and disposed of all residue in accordance with federal, state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be ECP Category 3 and the BCT concurred based on the cleanup of the spills.

Subparcel Number and Label 10.5(3)

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 (CH2M Hill, 1998c). Staining due to acid leaks from batteries in the fork lift area were 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 release of battery acid. In June 1998, the BCT again concurred that this subparcel change from an ECP Category 7 to a Category 3.

Subparcel Number and Label 11.2(3)

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 (CH2M Hill, 1998c). Antifreeze, firefighting foam and photographic chemicals were stored in the west end of the

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

building. Records indicate several spills of firefighting foam. The Spill Team responded, applied absorbent and disposed of all residue in accordance with federal, state and local regulations. Staining due to acid leaks from batteries in the fork lift area were 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 release of battery acid and firefighting foam. In June 1998, the BCT again concurred that this subparcel change from an ECP Category 7 to a Category 3.

Subparcel Number and Label 15.2(3)

CERFA Map Location 26,18

This subparcel is associated with 308 and Screening Site 35 (Building 308 - Hazardous Waste Storage). Law Environmental surface soil sample SS-5 (100 feet downslope and southeast of Building 308) arsenic in surface soil. Three screening site soil borings taken from around the building were sampled. Sample results indicated arsenic in surface soil below the BCT screening criteria^(c) as well as chromium and lead in subsurface soil near background levels. All levels appear to be naturally occurring. SS 35 does not exhibit waste accumulation-related contamination. The Preliminary Risk Evaluation indicates SS 35 does not pose a human health concern for industrial or residential scenarios and recommends the subparcel change to a Category 3. Also, air sampling conducted in this building to assess the impact from storage of hazardous materials indicated no human health hazards. At the September 1997 meeting, the BCT reviewed the data and determined that no levels exceeded BCT screening criteria^(c), but no category change was mentioned. In June 1998, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 3.

Subparcel Number and Label 15.4(3)

CERFA Map Location 14,18

This subparcel is associated with Screening Site 79, adjacent to Building 702, which was demolished in February 1998. A soil boring at Site 79 indicated elevated levels of PAHs, dieldrin and chromium. The BCT determined at its September 1997 meeting that Site 79 required a risk assessment to determine future actions. PAHs and dieldrin will be evaluated on a site-wide basis. In February 1999, the BCT concurred that Subparcel 15 4 change from an ECP Category 7 to a Category 3 because the building has been demolished and the soils surrounding the building will be addressed during further investigation/risk assessments for Subparcel 15.6.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**Subparcel Number and Label 18.2(3)****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. One BRAC soil sample was collected. Sample results indicated no levels that exceeded the BCT screening criteria. At the September 1997 meeting, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 3.

Subparcel Number and Label 19.1(3)**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. This subparcel also contains a small grassed 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 and looked at BRAC sampling data from adjacent Parcels 18.2 and 34.2 that indicated one chlordane level that exceeded BCT screening criteria. The PRE indicated the level to be below one in a million risk for industrial and residential scenarios. 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 that Subparcel 19.1 change from an ECP Category 7 to Category 3.

Subparcel Number and Label 19.2(3)**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 grass cutting equipment. In May 1999, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 3.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

Subparcel Number and Label 23.6(3)

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 Screening Site (SS) 82 (Flammables - Building 783 and 793). This subparcel contains grassed areas that were historically sprayed with herbicides and pesticides. Four screening site surface soil, four screening site subsurface soil and one BRAC surface soil samples were collected. Sample results indicate arsenic levels in surface soil (20.2 and 24.3 mg/kg) near the range of background levels (20 mg/kg), but below BCT screening criteria. In October 1997, the BCT concurred that this subparcel change to from an ECP Category 7 to a Category 3.

Subparcel Number and Label 23.7(3)

CERFA Map Location 11,5

This subparcel is associated with Building 783 which previously stored flammable items and ordnance material and is Screening Site 82. Four screening site surface soil, four screening site subsurface soil and one BRAC surface soil samples were collected in Subparcel 23.6, the grassed area surrounding the building. Sample results indicate arsenic levels in surface soil (20.2 and 24.3 mg/kg) near the range of background levels (20 mg/kg), but below BCT screening criteria(c). In March 1999, the BCT concurred that this subparcel change from ECP Category 7 to a Category 3 based on a BCT visual inspection of the building's interior to determine its condition and on results of screening site samples taken in Subparcel 23.6.

Subparcel Number and Label 23.8(3)

CERFA Map Location 11,3

This subparcel is associated with Building 793 which previously stored flammable items and ordnance material and is Screening Site 82. Four screening site surface soil, four screening site subsurface soil and one BRAC surface soil samples were collected in Subparcel 23.6, the grassed area surrounding the building. Sample results indicate arsenic levels in surface soil (20.2 and 24.3 mg/kg) near the range of background levels (20 mg/kg), but below BCT screening criteria(c). In March 1999, the BCT concurred that this subparcel change from ECP Category 7 to a Category 3 based on a BCT visual inspection of the building's interior to determine its condition and on results of screening site samples taken in Subparcel 23.6.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**Subparcel Number and Label 23.10(3)****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. One BRAC surface soil sample and one BRAC soil boring were collected. Sample results indicate that no levels exceeded the BCT screening criteria(c). In October 1997, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 3.

Subparcel Number and Label 28.1(3)**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. According to DDMT personnel, this area was used for the storage of feed stock material and not hazardous materials. Four BRAC soil samples, two surface and two subsurface, were collected. Sample results indicate aluminum and iron in surface soil near the range of the BCT screening criteria(c) and lead within the background value range. The Preliminary Risk Evaluation indicated that carcinogenic risks were below acceptable levels for both industrial worker and residential scenarios of one in a million, noncarcinogenic risks were above one in a million due to the inorganic chemicals aluminum and iron in both subsurface and surface, but the concentrations of these constituents in surface soils only did not pose significant health risks. In October 1997, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 3.

Subparcel Number and Label 32.1(3)**CERFA Map Location 9,14**

This subparcel is associated open storage areas X13 and X15 that are 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. Four BRAC soil samples (two surface and two subsurface) were collected. Sample results indicate that no levels exceeded the BCT screening criteria. In October 1997, the BCT concurred this subparcel change from an ECP Category 7 to a Category 3.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

Subparcel Number and Label 33.8(3)

CERFA Map Location 10,10

This subparcel is associated with Building 863. The building contained a battery charging station. Material handling equipment (forklifts) were 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 that this subparcel change from an ECP Category 7 to a Category 3.

Subparcel Number and Label 34.2(3)

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. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. One BRAC soil sample was collected. Sample results indicate chlordane at levels that exceeded the BCT screening criteria. The Preliminary Risk Evaluation indicated that the carcinogenic and noncarcinogenic risks were well below the acceptable levels of one in a million for both industrial worker and residential scenarios.. In October 1997, the BCT concurred that this subparcel change from an ECP Category 7 to a 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 has 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 Environmental Office. A total of 21 subparcels, encompassing 63.24 acres, have been designated as Category 4.

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 Subparcel 2. Four BRAC soil samples were collected and sample results indicated

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

levels of chlorinated hydrocarbon pesticides (dieldrin, DDE, DDT and gamma-chlordane) above BCT screening criteria. At the September 1997 meeting, the BCT changed this subparcel to a Category 6 due to the presence of pesticides, particularly dieldrin and the DRC's high priority for reuse of this subparcel. A removal action project was completed and post removal reports provided to EPA, TDEC and the public via the Information Repositories. In May 1999, the BCT concurred that the removal action was complete and that this subparcel change from an ECP Category 6 to a Category 4 based on the successful completion of this removal action.

Subparcel Number and Label 4.12(4)HS/HR

CERFA Map Location 31,10

This subparcel is associated with Building 251. The DRC demolished this building 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 poly aromatic hydrocarbons. 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 action was completed in January 1998. The ECP Category 7 changed to Category 4.

Subparcel Number and Label 4.13(4)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 poly aromatic hydrocarbons. 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 action was completed in June 1998 and the ECP Category 7 changed to Category 4.

Subparcel Number and Label 5.2(4)

CERFA Map Location 29,7

This subparcel is associated with Building 274 and the open land area surrounding the building. This subparcel is also associated with Remedial Investigation (RI) Site 48 (The former PCB Transformer

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

Area) Building 274 was constructed after transformer storage ceased. 1990 Law RI soil samples detected PAHs and DDT (and breakdown products). A groundwater sample (CH2M Hill 1995b, 1995e) in MW-26 detected tetrachloroethane and carbon tetrachloride and will be further evaluated in the Main Installation groundwater investigation. In 1997, five Remedial Investigation surface soil samples were collected (CH2M Hill, 1997) 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 August 1997, the BCT agreed this subparcel should undergo a removal action of surface soils. At the September 1997 meeting, the BCT concurred that this subparcel change to a Category 6. In 1998 a removal action was completed and the post removal reports provided to EPA, TDEC and the public via the Information Repositories. In May 1999, the BCT concurred that the removal action was complete and that this subparcel change from an ECP Category 6 to a Category 4 based on successful completion of the removal action.

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 residue 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 (CH2M Hill, 1998c). 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 that this subparcel change from an ECP Category 7 to a Category 4.

Subparcel Number and Label 12.2(4)HS/HR

CERFA Map Location 16,15

This subparcel is associated with Building 629 - the former 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 residue in accordance with federal, state and local regulations. The soil surrounding Building 629 is associated with Remedial Investigation Site 57 and will be further

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

evaluated during the Remedial Investigation process. 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 nitric acid. In January 1998, the BCT again concurred that this subparcel change from an ECP Category 7 to a Category 4.

Subparcel Number and Label 15.3(4)

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, 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 remediation occurred 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 that this subparcel change from an ECP Category 7 to a Category 4 based on the cleanup of the xylene spill and the low-level radioactivity.

Subparcel Number and Label 17.3(4)HS/HR

CERFA Map Location 25,9

This subparcel is associated with Building 359 and proposed No Further Action Site 49 (Medical Waste Storage Area). The DRC demolished this building 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

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

acid spill was reported on August 27, 1993 inside Building 359, Section 2. The Spill Team responded, applied sodium bicarbonate and disposed of all residue 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 conferred and concurred via telephone calls that this subparcel would become a Category 4 based on the cleanup of the sulfuric acid. In June 1998, the BCT again concurred that this subparcel change from an ECP Category 7 to a Category 4.

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 residue in accordance with federal, state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be an ECP Category 4 and the BCT concurred.

Subparcel Number and Label 19.3(7)

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 No Further Action 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

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

evidence of the spill remained, that a remedial action occurred, and that this subparcel should change from an ECP Category 7 to a Category 4 based on the cleanup of the spill.

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 residue in accordance with federal, state and local regulations. The 1996 Final Environmental Baseline Survey determined this subparcel to be an ECP Category 4 and the BCT concurred

Subparcel Number and Label 20.3(4)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 an ECP Category 4 and the BCT concurred.

Subparcel Number and Label 20.4(4)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 an ECP Category 4 and the BCT concurred.

Subparcel Number and Label 21.2(4)PS/HS/HR**CERFA Map Location 23,3**

This subparcel is associated with Building 490 and proposed No Further Action 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

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

acid was reported on December 15, 1995, inside Building 490, Section 5. The Spill Team responded, applied sodium bicarbonate and disposed of all residue 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 an ECP Category 4 and the BCT concurred.

Subparcel Number and Label 21.3(4)HS/HR**CERFA Map Location 15,5**

This subparcel is associated with Building 689, Screening Site 78 (Alcohol, Acetone, Toluene, Naphtha, Hydrofluoric Acid Spills) and proposed No Further Action 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 residue in accordance with federal, state and local regulations. Four soil borings were taken from the concrete parking lot immediately adjacent to and outside of Building 689. Cadmium was detected in one sample and appeared to be an isolated occurrence. TCE was detected at depths of 1 to 20 feet in one sample and may require further investigation for groundwater impacts. Groundwater under this building will be further evaluated as part of the RI. The 1996 Final Environmental Baseline Survey determined this subparcel to be an ECP Category 4 and the BCT concurred.

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 an ECP Category 4 and the BCT concurred.

Subparcel Number and Label 25.1(4)HS/HR**CERFA Map Location 9,4**

This subparcel is associated with Building S873 and Remedial Investigation Site 27 (Former Recoupment Area - Building S873). Building S873 stored hazardous materials such as chlorinated solvents, corrosives, petroleum, oils and lubricants. The southern end of the building and the gravel

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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 residue in accordance with federal, state and local regulations. Samples associated with RI Site 27 were taken outside of the building and will be further as part of the RI. At the September 1997 meeting, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 4 based on the cleanup of the spills.

Subparcel Number and Label 27.2(4)

CERFA Map Location 4,4

This subparcel is associated with Building 972 and Screening Site 84 (Flammables, Solvents, Waste Oil - Building 972). The building once stored flammable materials, solvents and waste oil as an open shed building. 972 was converted to a closed building and stored and constructed wooden packing materials, which involved 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. Screening site soil samples were taken outside the building in Subparcel 27.1 and will be further evaluated as part of the RI. At the October 1997 meeting, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 4 based on the cleanup of operational spills.

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

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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. At the September 1997 meeting, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 4 based on the spill not occurring in the current building and the volatilization of any spilled material over the past nine years. Additional sampling will occur in the spill area south of Building 925 (Subparcel 30.2).

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 proposed No Further Action (NFA) 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. Samples were collected and results indicated levels of PAHs that exceeded residential criteria and will be further addressed in a site-wide risk assessment. At the February 1999 meeting, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 4 based on cleanup of the spill and sample results.

Subparcel Number and Label 32.2(4)**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. Also, air sampling conducted in this building to assess the impact from storage of hazardous materials indicated no human health hazards. At the September 1997 meeting, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 4 based on cleanup of these spills and air sample results.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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

The Category 5 subparcel listed below is associated with an area 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. Information regarding releases was obtained from the Depot's Spill Response Checklists maintained by the Environmental Office. A total of 1 subparcel, encompassing 2.0 acres, has been designated Category 5.

Subparcel Number and Label 24.1(5)HR

CERFA Map Location 10,3

This subparcel is associated with the southern end of open storage area X02, which is the gravel area to the east of Remedial Investigation (RI) 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. Remediation of soil contamination from previous spills (DDT, DDE, and aldrin) took place in 1985. Three RI surface soil and five RI soil boring samples were collected. Sample results indicated elevated levels of vanadium and poly aromatic hydrocarbons. PAHs will be addressed in the sitewide risk evaluation. The 1996 Final Environmental Baseline Survey determined this subparcel to be a Category 5 and the BCT concurred based on the removal action that occurred, but that further investigation is needed to determine if further action is required.

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 the Environmental Division. A total of 11 subparcels, encompassing 40.26 acres, have been identified as Category 6.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**Subparcel Number and Label 7.1(6)****CERFA Map Location 29,13**

This subparcel is associated with the open land area surrounding Building 249 and Screening Site (SS) 65 (XXCC-3, Building 249). Five surface soil samples and three soil borings associated with SS 65 were collected (CH2M Hill, 1998c). Samples indicated levels of PAHs [particularly Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene and Indeno(1,2,3-cd)pyrene] that exceeded BCT screening criteria. At least one detection of each of these PAHs were two orders of magnitude above the risk based concentration. The high levels of PAHs were found on the south side of Building 249 near the railroad tracks. One sample detected levels of DDE and DDT. In September 1997, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 due to PAH levels that may require some type of remedial action. PAHs, DDE and DDT will be further evaluated as part of the RI.

Subparcel Number and Label 15.5(6)**CERFA Map Location 23,18**

This subparcel is associated with the open land area around Buildings 308, 309 and 720; Screening Site 36 (DRMO Hazardous Waste Concrete Storage Pad); Screening Site 37 (DRMO Hazardous Waste Gravel Storage Pad); Screening Site 38 (DRMO Damaged/Empty Hazardous Materials Drum Storage Area), and Screening Site 39 (DRMO Damaged/Empty Lubricant Container Area). One 1990 Law RI surface soil sample taken just outside this subparcel boundary detected PAHs, dieldrin and metals. During the 1997 Screening Site Sampling Program, thirteen soil boring samples were taken. Sample results indicated PAHs no longer occurring, arsenic at risk ratios above 1 in a million for both industrial and residential scenarios, and levels of 1,1,2,2-tetrachloroethane, DDT and other metals. At the September 1997 meeting, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 due to contaminant levels that may require some type of remedial action.

Subparcel Number and Label 25.2(6)**CERFA Map Location 8,7**

This subparcel is associated with Building 875, the open land area surrounding 875 and 873, and Remedial Investigation (RI) Site 27 (Former Recoupment Area/Building 873). This subparcel also contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP. A 1,000-gallon heating oil tank was closed in place in July 1994 outside Building 875. One BRAC and two RI surface soil samples and one BRAC soil boring were collected from this

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

subparcel (CH2M Hill, 1998c). The RI samples were taken from south of Building 873. The RI sample results indicated levels of poly aromatic hydrocarbons (PAHs) that exceeded the BCT screening criteria. This area of Subparcel 25.2 may be a removal action candidate, or could go through a risk assessment due to the moderate level of PAHs. The BRAC sample results indicated chlordane in the surface soils and lead at a depth of zero to 4 feet, and the Preliminary Risk Evaluation indicated carcinogenic and non-carcinogenic risk ratios of less than 1 in one million. At the September 1997 meeting, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 due to contaminant levels that may require some type of remedial action.

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. Eight SS surface soil samples and four SS soil borings were collected. Surface soil sample results indicated lead, arsenic and chromium levels that exceeded BCT screening criteria. Subsurface soil samples indicated no levels that exceeded BCT screening criteria. Monitoring well 21 (MW-21) is also associated with this subparcel. Groundwater samples taken from MW-21 detected VOCs and metals. Due to the presence of metals in surface soils, this subparcel requires further Remedial Investigation or should proceed through a removal action. At the October 1997 meeting, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 and proceed through the removal action process due to metal levels and the DRC's high priority for reuse of this subparcel. An Engineering Evaluation/Cost Analysis has been prepared to support a non-time critical removal action for this subparcel.

Subparcel Number and Label 35.1(6)

CERFA Map Location 3,3

This subparcel is associated with Building 1090 which 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 proposed removal action for the surrounding area (Subparcel 35.5) and that the subparcel change from an ECP Category 7 to a Category 6. An Engineering Evaluation/Cost Analysis and Action Memorandum have been prepared to support a non-time critical removal action for Subparcel 35.5

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**Subparcel Number and Label 35.2(6)****CERFA Map Location 3,5**

This subparcel is associated with three proposed ER sites. Site 88 is an old concrete grease rack and storage area for POL located at former Building 1085; Site 29 was a UST associated with the grease rack that was removed in 1988; Site 87 (Building 1084) was once used for storage of DDT and other pesticides (CH2M Hill 1995i). Soil samples indicated levels of arsenic, chromium, lead, cadmium, dieldrin and petroleum above the BCT screening criteria. Dieldrin will be evaluated on a site-wide basis. At the February 1999 meeting, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 and proceed through the removal action process due to metal levels and the DRC's high priority for reuse of this subparcel. An Engineering Evaluation/Cost Analysis and Action Memorandum have been prepared to support a non-time critical removal action for this subparcel.

Subparcel Number and Label 35.3(6)**CERFA Map Location 3,5**

This subparcel is associated with proposed NFA Site 30 at Building 1086, which contained a permitted-spray paint booth and was used to store hazardous materials from 1959 through 1984. The EBS visual inspection noted that this building has a sump. Samples were collected from the sump, and results indicated levels of metals and naphthalene. The BCT determined that the sump should be cleaned during proposed removal actions at the surrounding parcels. At the February 1999 meeting, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 due to metal levels and the DRC's high priority for reuse of this subparcel. An Engineering Evaluation/Cost Analysis and Action Memorandum have been prepared to support a non-time critical removal action for this subparcel.

Subparcel Number and Label 35.4(6)**CERFA Map Location 3,3**

This subparcel is associated with RI Site 32, which is next to Building 1088, and Screening Sites 31 and 33. Building 1087 (Screening Site 31) is the former location of a spray paint booth used to conduct major stock primer and enamel spray painting operations. Screening Site 33 is an open-sided, metal roof shed with a gravel floor adjacent to Building 1088, which 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 were collected and results

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

indicated levels of PAHs, pesticides and metals that exceeded BCT screening criteria. Groundwater samples were collected from MW-22 and detected VOCs, SVOCs and metals which will further evaluated as part of the RI. At the February 1999 meeting, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 and proceed through the removal action process due to metal levels and the DRC's high priority for reuse of this subparcel. An Engineering Evaluation/Cost Analysis and Action Memorandum have been prepared to support a non-time critical removal action for this subparcel.

Subparcel Number and Label 35.5(6)

CERFA Map Location 2,2

This subparcel is associated with Buildings 1091 and 1088 as well as the open land area surrounding these buildings but not included in Parcels 35.1 through 35.4. This subparcel is also associated with Remedial Investigation (RI) Site 32 (Sandblasting Waste Accumulation Area). Fourteen surface soil samples (five samples were associated with Screening Site 33 which is included in Subparcel 35.4) and three soil borings (one associated with SS 33) were collected in Subparcel 35.5. Sample results associated with RI site 32 indicated levels of chromium, lead, arsenic, and poly aromatic hydrocarbons (PAHs) that exceeded BCT screening criteria. Surface soil sample results associated with Screening Site 33 indicated levels of metals and PAHs that exceeded BCT screening criteria. PCBs were detected in Site 33 samples taken during the Law Environmental study in 1991. PCBs were not detected in Site 33 samples taken during the screening site sampling in the winter of 1997. At the October 1997 meeting, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 and proceed through the removal action process due to metal levels and the DRC's high priority for reuse of this subparcel. An Engineering Evaluation/Cost Analysis and Action Memorandum have been prepared to support a non-time critical removal action for this subparcel.

Subparcel Number and Label 36.16(6)

CERFA Map Location 29,9

This subparcel is associated with a suspected chemical warfare materiel burial location, Site 1 (Mustard and Lewsite Training Sets Burial Site) Nine sets of Chemical Agent Identification Sets were buried at this subparcel 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 transfer the property with a low human health or environmental risk in the future due to the chemical warfare materiel, the Army determined the CWM must be removed. In June 1999 via email, the BCT concurred that this

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

subparcel should change from an ECP Category 7 to a Category 6 and proceed through the removal action process. An Engineering Evaluation/Cost Analysis and Action Memorandum have been prepared to support a non-time critical removal action at this subparcel

Subparcel Number and Label 36.29(6)

CERFA Map Location 23,9

This subparcel is associated with suspected chemical warfare materiel disposal location, Site 24 (Former Burn Site - 1946). This subparcel is also associated with Proposed No Further Action Sites 23 (Construction Debris and Food Burial Site) and 63 (Fluorspar Storage - Southeastern quadrant). In 1946, railcars carrying captured German bomb casings containing sulfur mustard were enroute to Pine Bluff Arsenal, AR from Mobile, AL. Three cars began leaking mustard, and the train was rerouted to the Memphis Depot. 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 a casing. In 1998, sampling of surface soil, subsurface soil and groundwater around this site indicated no migration of chemical warfare materiel. In order to transfer the property with a low human health or environmental risk due to the chemical warfare materiel in the future, the Army determined the CWM must be removed. In June via email, the BCT concurred that this subparcel changes from an ECP Category 7 to a Category 6 and proceed through the removal action process. An Engineering Evaluation/Cost Analysis and Action Memorandum have been prepared to support a non-time critical removal action at this subparcel.

3.4.7 Unevaluated Areas or Areas Requiring Additional Evaluation

The Category 7 subparcels listed below 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 the Environmental Division. A total of 69 subparcels, encompassing 411.49 acres, have been designated as Category 7.

Subparcel Number and Label 1.8(7)

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 and the potential impacts from

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

these units are unknown. This subparcel includes grassed areas that were historically sprayed with pesticides and herbicides. A 4-gallon motor oil spill was reported on March 22, 1995 for the Gate 1 parking lot. In addition, a diesel spill was reported on October 28, 1993 in the street at Gate 1. The Spill Team responded, took the appropriate action and disposed of all residue in accordance with federal, state and local regulations. Based on BRAC sample results, this subparcel will remain a Category 7 and will be addressed in the upcoming sitewide risk assessment for dieldrin.

Subparcel Number and Label 3.5(7)

CERFA Map Location 29,4

This subparcel is associated with the recreational area including the golf course, playground, softball field, volleyball and tennis courts, wading pool, Buildings 194, 197 and 398, and the open land area surrounding the community club complex extending to Ball Road. This subparcel contains grassed areas that were historically sprayed with pesticides and herbicides. 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). From late 1996 through 1998, over 50 surface soil samples from throughout these parcels were collected, analyzed, and the results processed through several risk assessment scenarios reflected of intended, similar 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 meaning the area is safe for children and teenagers. 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.

Subparcel Number and Label 3.6(7)

CERFA Map Location 26,6

Lake Danielson is located in the northwest corner of the Golf Course and receives stormwater runoff from the 20 Typical warehouse area. Health risks associated with surface water, sediments and aquatic animals in Lake Danielson (Subparcel 3.6) and the Golf Course Pond (Subparcel 3.8) were assessed in an expedited manner. Final results are included in the final Baseline Risk Assessment for

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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.

Subparcel Number and Label 3.7(7)

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. Surface water samples SW-9 and SW-12 detected pesticides and metals. Groundwater sample from MW-25 detected VOCs and metals. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 3.8(7)

CERFA Map Location 32,5

This subparcel is associated with the Golf Course Pond that receives surface water runoff from the eastern side of the golf course and the southeast portion of the installation. Health risks associated with surface water, sediments and aquatic animals in Lake Danielson (Subparcel 3.6) and the Golf Course Pond (Subparcel 3.8) were also assessed in an expedited manner. Final results are included in

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

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.

Subparcel Number and Label 3.9(7)

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. Surface water samples SW-10 and SW-11 detected pesticides and metals. Surface soil sample SS-13 detected PAHs. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 3.10(7)

CERFA Map Location 30,6

A 1947 installation map shows a pistol range directly behind where Building 271 now stands, near the 9th hole of the golf course. Soil samples indicate arsenic and dieldrin levels that exceeded BCT screening criteria. Additional evaluation is necessary to determine the environmental condition of this subparcel.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**Subparcel Number and Label 3.11(7)****CERFA Map Location 30,6**

This area is within the Golf Course and was used to test flame-thrower fuels. Firefighting techniques were also practiced at this site after ignition of the fuel. Soil samples indicate dieldrin and benzo(a)pyrene at levels similar to those found elsewhere on the Depot. This area will be further evaluated for these substances on a site-wide basis.

Subparcel Number and Label 4.5(7)**CERFA Map Location 30,8**

This subparcel is associated with Building 261 and the open land area surrounding buildings in Subparcel 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 are actually in Subparcel 4.6, ECP Category 2, 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. Dieldrin and PAHs will be further evaluated as part of the RI. .

Subparcel Number and Label 4.9(7)**CERFA Map Location 29,8**

Pad 267 is a concrete slab currently used as a parking lot, the site of the former pesticide shop (Building T-267). This building was used for storage/mixing of pesticides/herbicides. Rinse water from pesticide/herbicide spraying operation was reportedly dumped on the ground near the facility. Surface soil samples indicated dieldrin at levels below BCT screening criteria. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 4.10(7)**CERFA Map Location 31,7**

Building 273 was used for mixing golf course pesticides and herbicides. Surface soil samples (SS-37 and SS-50) detected VOCs, PAHs and pesticides. Soil samples indicated dieldrin at levels above BCT screening criteria. This area will be further evaluated under the site-wide dieldrin study

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**Subparcel Number and Label 6.1(7)****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. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. Soil samples indicate dieldrin and PCB 1260 at levels above the BCT screening criteria. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 8.1(7)**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. Soil samples indicated levels of dieldrin above the BCT screening criteria. Dieldrin will be evaluated as part of the RI

Subparcel Number and Label 9.1(7)**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 This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. Soil samples indicated levels of dieldrin above the BCT screening criteria. Dieldrin will be evaluated as part of the RI.

Subparcel Number and Label 10.2(7)**CERFA Map Location 18,11**

This subparcel is associated with the open land area surrounding Buildings 549, 649, 550 and 650.. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. Soil samples indicated levels of dieldrin above the BCT screening criteria. Dieldrin will be evaluated as part of the RI.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**Subparcel Number and Label 10.3(7)****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 residue in accordance with federal, state and local regulations. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 11.1(7)**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. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. Soil samples indicated levels of dieldrin above the BCT screening criteria. Dieldrin will be evaluated as part of the RI.

Subparcel Number and Label 12.1(7)**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. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. Soil samples indicated levels of PAH compounds and dieldrin above the BCT screening criteria. PAHs and dieldrin will be evaluated as part of the RI.

Subparcel Number and Label 13.5(7)**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. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. Soil samples indicated levels of dieldrin above the BCT screening criteria. Dieldrin will be evaluated as part of the RI.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

Subparcel Number and Label 14.2(7)

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. 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 (The Pickering Firm 1993d). 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. Soil samples indicated levels of dieldrin above the BCT screening criteria. Dieldrin will be evaluated as part of the RI

Subparcel Number and Label 15.6(7)

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, and includes three Screening Sites. The DRMO East Stormwater Runoff Canal (Screening Site 54) and the DRMO North Stormwater Runoff Canal (Screening Site 55) are canals that collect stormwater runoff from the DRMO Yard and other Depot facilities. No previous sampling has been conducted at these sites (CH2M Hill 1995h). Screening Site 72 (Property Disposal Office Yard) is associated with an area that was treated with waste oil for dust control. Other soil and groundwater samples from within this subparcel detected metals, pesticides and methylene chloride (CH2M Hill 1995h). During the EBS visual inspection of this area, spills of a dark liquid were observed on the concrete pad (Real Property 88015) located south of Building 702 and west of Building 629. In addition, this subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing pentachlorophenol. Soil samples indicated levels of dieldrin above the BCT screening criteria. Dieldrin will be evaluated as part of the RI. In addition, this subparcel is associated with a 4,000-gallon heating oil tank that was located outside of Building 319 but was removed in July of 1994 (The Pickering Firm 1993d). 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. This subparcel is also associated with a 30-gallon solvent spill south of Building 309 that was reported on December 2, 1991. The Spill Team responded, applied absorbent, removed the stained soil and disposed of all

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

residue in accordance with federal, state and local regulations Additional evaluation is necessary to determine the environmental condition of this subparcel

Subparcel Number and Label 16.1(7)

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. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. Soil samples indicated levels of dieldrin above the BCT screening criteria. Dieldrin will be evaluated as part of the RI.

Subparcel Number and Label 17.2(7)

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. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. Soil samples indicated levels of dieldrin above the BCT screening criteria. Dieldrin will be evaluated as part of the RI. In addition, this subparcel is associated with the following tanks.

- A 12,000-gallon and a 500-gallon fuel oil tank that were located at Building 359 and were closed in place in July 1994 and September 1995, respectively (The Pickering Firm 1993d)
- A 1,000-gallon fuel oil tank and a 500-gallon diesel tank that were located at Building 359 but were removed in 1993 (The Pickering Firm 1993d; Facilities Engineering Division DDMT 1993)
- A 12,000-gallon and a 500-gallon fuel oil tank that were located at Building 359, but were removed in 1993 (The Pickering Firm 1993d, Facilities Engineering Division DDMT 1993)

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

There have been no documented releases associated with these tanks, and no evidence was found of disposal or of migration from an adjacent property of hazardous substances or petroleum products. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 20.5(7)

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. Soil samples indicated levels of dieldrin above the BCT screening criteria. Dieldrin will be evaluated as part of the RI. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 20.6(7)

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 (DDMT 1993). Sodium bicarbonate was applied to the material, all spill residue was gathered and disposed in accordance with local, state and federal regulations. Soil samples indicated levels of arsenic, PAH compounds and metals above the BCT screening criteria. PAHs will be evaluated as part of the RI. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 21.5(7)

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). Samples were collected and results indicated levels of chromium and lead in subsurface soils that exceeded BCT screening criteria. Dieldrin was detected, but was below screening criteria. Additional evaluation is necessary to determine the environmental condition of this subparcel.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**Subparcel Number and Label 22.1(7)****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. In 1997, samples were collected and results indicated levels of antimony and PAHs that exceeded BCT screening criteria. PAHs will be evaluated as part of the RI. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 22.2(7)**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. In 1997, samples were collected and results indicated levels of antimony, arsenic, dieldrin and PAHs in surface soils that exceeded BCT screening criteria. Even though analytical results indicated these metals levels exceeded BCT screening criteria, these levels appear fairly consistently across the Depot and are being regarded as naturally occurring. PAHs will be evaluated as part of the RI. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 23.11(7)**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. In 1997, a sample was collected from Subparcel 23.9, a spill area within Subparcel 23.11. Results indicated lead in subsurface soils that slightly exceeded (24.3 mg/kg vs. 24 mg/kg) BCT screening criteria. Even though analytical results indicated this lead level exceeded BCT screening criteria, this level appears fairly consistently across the Depot and is being regarded as naturally occurring. The BCT has made no decision to change the ECP category for this subparcel.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

Subparcel Number and Label 24.2(7)

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. In 1997, samples were collected and results indicated arsenic, PAHs and PCP levels in surface soils and lead in subsurface soils that exceeded BCT screening criteria. Even though analytical results indicated these metals levels exceeded BCT screening criteria, these levels appear fairly consistently across the Depot and are being regarded as naturally occurring. PAHs will be evaluated as part of the RI. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 24.3(7)

CERFA Map Location 11,7

This subparcel is associated with RI Site 34 and proposed NFA Sites 30, 40 and 41 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. Several spills have been reported for this area: an oil spill was reported on August 23, 1993, outside Building 770 (northeast corner); a 50-gallon spill of PCB-containing liquid was reported on July 9, 1990; and a 55-gallon spill of petroleum was reported on November 7, 1991 outside Building 770 (west side). Reportedly, the contaminated material associated with these releases was removed, and no further removal or remedial actions are required (DDMT 1992, 1993). Several tanks have been removed (The Pickering Firm 1993d; Facilities Engineering Division DDMT 1993), 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
- Two 1,000-gallon used motor oil tanks removed in December 1989

Building 770 has an oil/water separator that is pumped out quarterly and a floor drain. Surface soil samples (SS-38 and SS-39) detected PAHs, VOCs, pesticides, and metals (CH2M Hill 1995d). The EBS visual inspection noted oil staining on the floor of Building T771. Soil samples indicated levels of

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

metals and PAH compounds that exceeded the BCT screening criteria. PAHs will be evaluated as part of the RI. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 26.1(7)**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. In 1997, samples were collected and results indicated no levels that exceeded BCT screening criteria. However, in October 1997 the BCT agreed that this subparcel remain an ECP Category 7 until surface soils could be further evaluated.

Subparcel Number and Label 27.1(7)**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. In 1997, samples were collected and results indicated levels of chromium, PAHs and chlorinated pesticides in surface soils and chromium and lead in subsurface soils that exceeded BCT screening criteria. Even though analytical results indicated these metals levels exceeded BCT screening criteria, these levels appear fairly consistently across the Depot and are being regarded as naturally occurring. PAHs will be evaluated as part of the RI. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 29.2(7)**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. In 1997, samples were collected and results indicated levels of chromium, dieldrin, DDT and methylene chloride in surface soils that exceeded BCT screening criteria. Even though analytical results indicated these metals levels exceeded BCT screening criteria, these levels appear fairly consistently across the Depot and are being regarded as naturally occurring.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

Dieldrin will be evaluated as part of the RI. Additional evaluation is necessary to determine the environmental condition of this subparcel. 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 residue in accordance with federal, state and local regulations.

Subparcel Number and Label 29.3(7)

CERFA Map Location 2,11

This subparcel is associated with Screening Site 56, the west stormwater drainage canal that collects the stormwater runoff from the western portion of the Main Installation. In 1997, samples were collected and results indicated levels of metals in surface soil; lead in subsurface soil; PAHs, lead, p,pN-DDD and p,pN-DDE in sediments under the concrete lined ditch that exceeded BCT screening criteria. PAHs were detected in sediments at levels exceeding criteria, but below background values. Even though analytical results indicated these metals levels exceeded BCT screening criteria, these levels appear fairly consistently across the Depot and are being regarded as naturally occurring. Dieldrin will be evaluated as part of the RI. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 30.3(7)

CERFA Map Location 4,15

This subparcel is associated with open storage area X23 and the open land area surrounding Buildings 925 and 949. This subparcel is also associated with former open storage area X25 where drums of flammable materials were stored. Buildings 925 and 949 were constructed on former open storage area X25. This subparcel contains railroad tracks, open storage areas and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. No sampling has occurred at this subparcel; however, pesticides and PAHs have been detected near railroad tracks at several Depot locations and will be evaluated as part of the RI. Additional evaluation is necessary to determine the environmental condition of this subparcel.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**Subparcel Number and Label 30.5(7)****CERFA Map Location 4,10**

This subparcel is associated with Screening Site 83 (Dried Paint Disposal Area), which is the former spray paint area south of Building 949. According to interviews with Depot personnel, spray painting and sand blasting occurred at this location until the early 1980s. In 1997, samples were collected and results indicated levels of antimony, barium, beryllium, cadmium, chromium, iron, lead and zinc that exceeded BCT screening criteria. Even though analytical results indicated these metals levels exceeded BCT screening criteria, these levels appear fairly consistently across the Depot and are being regarded as naturally occurring. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 31.1(7)**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. In 1997, samples were collected and results indicated levels of metals, dieldrin, dibenz(ah)anthracene and PCBs that exceeded BCT screening criteria. Even though analytical results indicated these metals levels exceeded BCT screening criteria, these levels appear fairly consistently across the Depot and are being regarded as naturally occurring. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 32.3(7)**CERFA Map Location 9,10**

This subparcel is associated with Screening 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

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

PCP. In 1997, samples were collected and results indicated levels of arsenic and lead that exceeded BCT screening criteria. Even though analytical results indicated these metals levels exceeded BCT screening criteria, these levels appear fairly consistently across the Depot and are being regarded as naturally occurring. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 33.7(7)

CERFA Map Location 13,7

This subparcel is associated with Screening Site 81 (Fuel Oil Building 765), a 12,000-gallon diesel fuel aboveground storage tank that was removed in 1994. This subparcel also contains a gravel area that was historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of PAHs that exceeded BCT screening criteria. PAHs will be evaluated as part of the RI. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 33.9(7)

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 Screening Site 42 (Former Pentachlorophenol (PCP) Dip Vat Area), Screening Site 43 (Former Underground PCP Tank Area), Screening Site 46 (Pallet Drying Area) and Screening 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. 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

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

reported to the Spill team, which responded, took the appropriate actions and disposed of all residue in accordance with federal, state and local regulations. In 1997, samples were collected and results indicated levels of lead, chromium, arsenic, PAHs, dieldrin and PCB-1260 that exceeded BCT screening criteria. Even though analytical results indicated these metals levels exceeded BCT screening criteria, these levels appear fairly consistently across the Depot and are being regarded as naturally occurring. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.1(7)**CERFA Map Location 30,9**

This subparcel is associated with a seven-pound jug of ammonia hydroxide and a one-gallon bottle of acetic acid that were buried here. This subparcel is associated with IRP Site 2. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.2(7)**CERFA Map Location 30,9**

This subparcel is associated with three thousand quarts of unknown chemicals and five cubic feet of orthotoluidine dihydrochloride that were buried here. This subparcel is associated with IRP Site 3. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.3(7)**CERFA Map Location 30,9**

This subparcel is associated with forty-five 55-gallon drums of discarded oil, grease, paints, and thinner that were buried in these two adjacent trenches. This subparcel is associated with IRP Sites 4 and 4.1. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.4(7)**CERFA Map Location 30,9**

This subparcel is associated with three cubic feet of methyl bromide that were buried here in an unidentified container or containers. This subparcel is associated with IRP Site 5. In 1998, samples

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.5(7)**CERFA Map Location 30,8**

This subparcel is associated with 1,700 quart bottles of nitric acid that were buried here. This subparcel is associated with IRP Site 7. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.6(7)**CERFA Map Location 30,8**

This subparcel is associated with 3,768 one-gallon cans of methyl bromide that were buried to a depth of 7 feet. This subparcel is associated with IRP Site 8. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.7(7)**CERFA Map Location 31,9**

This subparcel is associated with 1,433 one-ounce bottles of trichloroacetic acid that were buried at a depth of 6 feet. This subparcel is associated with IRP Site 11. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.8(7)**CERFA Map Location 27,8**

This subparcel is associated with 30 pallets of discarded acid containers that were buried at these three locations at a depth of 8 feet. This subparcel is associated with IRP Sites 12 and 12.1. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**Subparcel Number and Label 36.9(7)****CERFA Map Location 28,8**

This subparcel is associated with 32 cubic yards of mixed chemicals and acids and 8,100 pounds of unnamed solids that were buried at a depth of 8 feet. This subparcel is associated with IRP Site 13. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.10(7)**CERFA Map Location 28,8**

These sites contain unknown amounts of unnamed acid. This subparcel is associated with IRP Sites 16 and 16.1. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.11(7)**CERFA Map Location 28,8**

This subparcel is associated with an unknown amount of chemicals and medical supplies that were buried. This subparcel is associated with IRP Site 17. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.12(7)**CERFA Map Location 23,11**

This site contains one above-grade covered bauxite pile. The pile was removed in 1998. This subparcel is associated with IRP Site 62. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.13(7)**CERFA Map Location 27,11**

This site contains two above-grade covered bauxite piles. The piles were removed in 1998. This subparcel is associated with IRP Site 62. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

Subparcel Number and Label 36.14(7)

CERFA Map Location 31,11

This site is a former pistol range (Site 60) and impact area and includes Building 1184 (Site 85). The building was used for temporary pesticide storage. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.15(7)

CERFA Map Location 29,10

This subparcel is associated with the fluvial aquifer groundwater contamination identified at Dunn Field. An interim remedial action addressing the contamination has been implemented with the installation of seven recovery wells along the western fenceline of Dunn Field. Groundwater from the fluvial aquifer is pumped out and discharged to the Memphis sanitary sewer for treatment at the publicly owned treatment works. The BCT has approved installation of four additional recovery wells to the system. In addition, this subparcel contains railroad tracks that were historically sprayed with pesticides, herbicides, and waste oil containing PCP. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.17(7)

CERFA Map Location 30,9

This subparcel is associated with ashes and metals from the former burn site (Screening Site 24) that were buried here. This subparcel is associated with IRP Site 9. In 1998, samples were collected, but the BCT has not evaluated the data. The CEHNC ordnance division and the CWM field investigation contractor have determined this area does not contain CWM. Documentation to this effect is forthcoming. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.18(7)

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 IRP Site 86. In 1998, samples were collected, but the BCT has not evaluated the data. The CEHNC ordnance division and the CWM field

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

investigation contractor have determined this area does not contain CWM. Documentation to this effect is forthcoming. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.19(7)**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 IRP Site 86. In 1998, samples were collected, but the BCT has not evaluated the data. The CEHNC ordnance division and the CWM field investigation contractor have determined this area does not contain CWM. Documentation to this effect is forthcoming. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.20(7)**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 IRP Site 6. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

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 IRP Site 10. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

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 IRP Site 14. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**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 IRP Sites 15, 15.1 and 15.2. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.24(7)**CERFA Map Location 28,11**

This site was used for the disposal of sanitary wastes, construction debris, smoke pots, and tear gas canisters from 1955 to 1960. This subparcel is associated with IRP Site 19. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.25(7)**CERFA Map Location 30,10**

Reportedly, asphalt and roofing gravel were dumped in a surface fill at this location until 1981 when the debris was removed. This subparcel is associated with IRP Site 20. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.26(7)**CERFA Map Location 31,13**

This site consists of two trenches with unknown depths. It is reported that XXCC-3 impregnate is buried here. This subparcel is associated with IRP Site 21. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

Subparcel Number and Label 36.27(7)

CERFA Map Location 31,12

This concrete-lined drainage ditch collects stormwater runoff from surrounding areas. This subparcel is associated with IRP Site 50. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

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 IRP Site 61. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

Subparcel Number and Label 36.30(7)

CERFA Map Location 28,12

This subparcel is associated with the open land area of Dunn Field excluding the areas included in other subparcels. This subparcel contains railroad tracks that were historically sprayed with pesticides, herbicides, and waste oil containing PCP. In 1998, samples were collected, but the BCT has not evaluated the data. Additional evaluation is necessary to determine the environmental condition of this subparcel.

3.4.8 Qualified Parcels

In determining the qualified subparcels, Woodward-Clyde 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.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

- 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 95 subparcels, totaling approximately 136.53 acres, identified as qualified subparcels as described in Table 3-8. Nine buildings totaling approximately 17.11 acres have been demolished since first identified as qualified subparcels in 1996. 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.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

Under SARA Title 1, Section 120 to CERCLA, those subparcels which 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 (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 188.46 acres classified as CERFA Category 1 through 4. These subparcels, described in Sections 3.4.1 through 3.4.4, are suitable for immediate transfer to a non-federal entity according to CERCLA. Approximately 446.15 acres of the Depot, discussed in Sections 3.4.5 through 3.4.7, are classified as CERFA Category 5 through 7 subparcels. 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 and copying. The Depot has established information repositories at the Memphis Depot Community Outreach Room, the Memphis/Shelby County Public Library (Main

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

Branch and Cherokee Branch) and the Memphis/Shelby County Health Department Pollution Control Division. The repositories contain information about environmental activities at the Depot. The Memphis Depot Community Outreach Room includes a computer linked to the Internet and various BRAC, environmental restoration and environmental compliance reference material.

- **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. The Memphis Depot web site will also provide access to documents included in the Administrative Record.
- **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 monthly 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.

SECTION THREE INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS

- **Availability Sessions.** The Depot has conducted several availability sessions since August 1993. 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, IRP 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.

482 126

TABLE 3-1
POTENTIAL CONTAMINATION SITES ASSOCIATED
WITH OPERABLE UNITS

INSTALLATION RESTORATION SITE NUMBER	DSERTS SITE NUMBER ^(a)	SUBPARCEL NUMBER	DESCRIPTION	CURRENT DISPOSITION OF SITE
Operable Unit 1: Dunn Field				
1	1	36 16	Mustard and Lewisite Training Sets (9 sets) Burial Site (1955)	CWMP/Proposed ER
2	2	36 1	Ammonia Hydroxide (7 pounds) and Acetic Acid (1 gallon) Burial (1955)	RI
3	3	36 2	Mixed Chemical Burial Site (orthotoluidine dihydrochloride) (1955)	RI
4	4	36.3	POL Burial Site (thirteen 55-gallon drums of oil, grease, and paint)	RI
4.1	90	36 3	POL Burial Site (thirty-two 55-gallon drums of oil, grease, and thinner) (1955)	RI
5	5	36 4	Methyl Bromide Burial Site A (3 cubic feet) (1955)	RI
6	6	36 20	40,037 units ointment (eye) Burial Site (1955)	RI
7	7	36.5	Nitric Acid Burial Site (1,700 quart bottles) (1954)	RI
8	8	36 6	Methyl Bromide Burial Site B (3,768 1-gallon cans) (1954)	RI
9	9	36 17	Ashes and Metal Burial Site (burning pit refuse) (1955)	CWMP
10	10	36 21	Solid Waste Burial Site (near MW-10) (metal, glass, trash, etc.)	RI
11	11	36 7	Trichloroacetic Acid Burial (1,433 1-ounce bottles) (1965)	RI
12 & 12.1	12	36 8	Sulfuric and Hydrochloric Acid Burial (1967)	RI
13	13	36 9	Mixed Chemical Burial (Acid, 900 pounds; unnamed solids, 8,100 pounds)	RI
14	14	36 22	Municipal Waste Burial Site B (near MW-12) (food, paper products)	RI
15	15	36 23	Sodium Burial Sites (1968)	RI
15.1	91	36 23	Sodium Phosphate Burial (1968)	RI
15.2	92	36 23	14 Burial Pits: Na ₂ PO ₄ , sodium, acid, medical supplies, and chlorinated lime	RI
16	16	36 10	Unknown Acid Burial Site (1969)	RI
16.1	93	36 10	Acid, date unknown	RI
17	17	36 11	Mixed Chemical Burial Site C (1969)	RI
18	18	36 30	Plane Crash Residue (Dunn Field)	Proposed NFA
19	19	36.24	Former Tear Gas Canister Burn Site (Dunn Field)	Screening
20	20	36 25	Probable Asphalt Burial Site (Dunn Field)	Screening
21	21	36 26	XXCC-3 Burial Site (Dunn Field)	Screening
22	22	36.30	Hardware Burial Site (nuts and bolts) (Dunn Field)	Proposed NFA
23	23	36 30	Construction Debris and Food Burial Site (Dunn Field)	Proposed NFA
24	24	36 29	Former Burn Site (1946)	CWMP/Proposed ER
50	50	36 27	Dunn Field Northeastern Quadrant Drainage Ditch	Screening
60	60	36 14	Pistol Range Impact Area/Bullet Stop	RI
61	61	36.28	Buried Drain Pipe (Northwestern Quadrant of Dunn Field)	Screening
62	62	36.12/36 13	Bauxite Storage (Northeastern Quadrant of Dunn Field)	RI
63	63	36 30	Fluorspar Storage (Southeastern Quadrant of Dunn Field)	Proposed NFA
64	64	36.29	Bauxite Storage (Southwestern Quadrant of Dunn Field) (1942 to 1972)	RI
85	85	36 14	Old Pistol Range Building 1184/Temporary Pesticide Storage	RI
86	86	36 18/36 19	Food Supplies (Dunn Field), possible CWM test kits	CWMP
Operable Unit 2: Southwestern Quadrant, Main Installation				
27	27	24 1	Former Recoupment Area (Building 873)	RI
29	29	35 2	Former Underground Waste Oil Storage Tank	Proposed ER
30	30	24.3	Paint Spray Booths (2 of 3 total, Buildings 770 and 1086)	Proposed NFA

**TABLE 3-1
POTENTIAL CONTAMINATION SITES ASSOCIATED
WITH OPERABLE UNITS**

INSTALLATION RESTORATION SITE NUMBER	DSERTS SITE NUMBER ¹	SUBPARCEL NUMBER	DESCRIPTION	CURRENT DISPOSITION OF SITE
31	31	35 4	Former Paint Spray Booth (Building 1087)	Proposed ER
32	32	35 4	Sandblasting Waste Accumulation Area	Proposed ER
33	33	35 4	Sandblasting Waste Drum Storage Area (metal shed south of Building 1088)	Proposed ER
34	34	24 3	Building 770 Underground Oil Storage Tanks	RI
40	40	24 3	Safety Kleen Units - 5 of 9 total (all located in Building 770)	Proposed NFA
41	41	24 3	Satellite Drum Accumulation Areas - 1 of 4 total (vicinity Building 770)	Proposed NFA
47	47	33 6	Former Contaminated Soil Drum Storage Area (300 feet west of Building 689; removed 1988)	Proposed NFA
71	71	Multiple	Herbicide (All railroad tracks) (used to clear tracks)	Screening
82	82	23.7/23.8	Flammables (Buildings 783 and 793)	Screening
84	84	27 2	Flammables, Solvents, Waste Oil, etc (Building 972)	Proposed NFA
87	87	35 2	DDT, banned pesticides (Building 1084)	Proposed ER
88	88	35 2	POL (Building 1085)	Proposed ER
89	89	28.2	Acids (Building 1089)	Proposed ER

Operable Unit 3: Southeastern Watershed And Golf Course, Main Installation

25	25	3 8	Golf Course Pond	RI
26	26	3 6	Lake Danielson	RI
30	30	4.4	Paint Spray Booths (1 of 3 total - Building 260)	Proposed NFA
40	40	4, 19, and 21	Safety Kleen Units - 4 of 9 total units (Buildings 253, 469, 490, and 689)	Proposed NFA
41	41	4 and 19	Satellite Drum Accumulation Areas - 2 of 4 total areas (Buildings 260 and 469)	Proposed NFA
48	48	5 2	Former PCB Transformer Storage Area	ER Complete
49	49	17 3	Medical Waste Storage Area	Proposed NFA
51	51	3 7	Lake Danielson Outlet Ditch	Screening
52	52	3 9	Golf Course Pond Outlet Ditch	Screening
58	58	4 9	Pesticides, Herbicides (Pad 267)	RI
59	59	4 10	Pesticides, Cleaners (Building 273)	RI
65	65	7 2	XXCC-3 (Building 249)	Proposed NFA
66	66	4.11	POL (Building 253)	Proposed NFA
67	67	4.7	MOGAS (Building 257)	Proposed NFA
68	68	4.8	POL (Building 263) (20 by 40 feet)	Proposed NFA
69	69	3 11	2,4-D, M2A1, and M4 Flamethrower Liquid Fuels (surface application)	RI
73	73	Multiple	2,4-Dichlorophenoxyacetic Acid (all grassed areas)	Screening
75	75	21.5	Unknown Wastes near Building 689	Screening
76	76	21.5	Unknown Wastes near Building 690	Screening
77	77	22 2	Unknown Wastes near Buildings 689 and 690	Screening
78	78	21 3	Alcohol, Acetone, Toluene, Naphtha, Hydrofluoric Acid Spill	Screening

Operable Unit 4: North-Central Area, Main Installation

28	28	32.3	Recoupment Area (Building 865)	Screening
35	35	15 2	DRMO Building S308 - Hazardous Waste Storage	Proposed NFA
36	36	15 5	DRMO Hazardous Waste Concrete Storage Pad	RI
37	37	15 5	DRMO Hazardous Waste Gravel Storage Pad	Screening
38	38	15.5	DRMO Damaged/Empty Hazardous Materials Drum Storage Area	Screening
39	39	15.5	DRMO Damaged/Empty Lubricant Container Area	Screening
41	41	13.4	Satellite Drum Accumulation Area (1 of 4 total - Building 210)	Proposed NFA

TABLE 3-1
POTENTIAL CONTAMINATION SITES ASSOCIATED
WITH OPERABLE UNITS

INSTALLATION RESTORATION SITE NUMBER	DSERTS SITE NUMBER ^{a)}	SUBPARCEL NUMBER	DESCRIPTION	CURRENT DISPOSITION OF SITE
42	42	33 9	Former pentachlorophenol Dip Vat Area	Screening
43	43	33 9	Former Underground pentachlorophenol Tank Area	Screening
44	44	33.6	Former Wastewater Treatment Unit Area	Proposed NFA
45	45	33 9	Former Contaminated Soil Staging Area	Proposed NFA
46	46	33 9	Former pentachlorophenol Pallet Drying Area	Screening
53	53	30 2	X-25 Flammable Solvents Storage Area (near Building 925)	Screening
54	54	15 6	Main Installation - DRMO East Stormwater Runoff Canal	Screening
55	55	15 6	Main Installation - DRMO North Stormwater Runoff Canal	Screening
56	56	29.3	Main Installation - West Stormwater Drainage Canal	Screening
57	57	12.1	Building 629 Spill Area	RI
70	70	Multiple	POL, Various Chemical Leaks (railroad tracks 1, 2, 3, 4, 5, and 6)	Screening
71	71	Multiple	Herbicide (all railroad tracks) (used to clear tracks)	Screening
72	72	15 6	Waste Oil (DRMO yard) (surface application for dust control)	Screening
73	73	Multiple	2,4-Dichlorophenoxyacetic Acid (all grassed areas)	Screening
74	74	15.3	Flammables, Toxics (West End - Building 319)	Screening
79	79	15 4	Fuels, Miscellaneous Liquids, Wood, and Paper (Vicinity S702)	Screening
80	80	33 9	Fuel and Cleaners Dispensing (Building 720)	Screening
81	81	33 7	Fuel Oil AST (Building 765 - removed in 1994)	Screening
83	83	30 5	Dried Paint Residues - South of Building P949	Screening

Notes:

2,4-D	2,4-Dichlorophenoxyacetic acid
CWM	Chemical Warfare materiel
CWMP	Chemical Warfare Management Plan
DDT	4,4'-Dichlorodiphenyltrichloroethane
DRMO	Defense Reutilization and Marketing Organization
ER	Early removal
MOGAS	Motor gasoline
Na	Sodium
NFA	No further action
PCB	Polychlorinated biphenyl
PO ₄	Phosphate
POL	Petroleum, oil, and lubricants
RFA	RCRA facility assessment
RI/FS	Remedial investigation/feasibility study
RI	Remedial investigation

a) 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
209	4/14/94	Microbrade	1 quart	Inside	Boiler room	Absorbent applied Product taken to DRMO for disposal
251	1/30/95	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	4/20/90	Gasoline	1-2 gallons	Outside	Gas station. Product overflowed from tank vent while being filled	Soil was excavated and taken to Dunn Field to aerate
257	8/11/93	Gasoline	4 gallons	Outside	Gas station. UST overflowed through vent pipe while being filled	Absorbent applied Soil excavated and taken to DRMO for disposal
257	8/31/93	Gasoline	4 gallons	Outside	Main tank spewed gas out of pressure tube	Absorbent applied Product taken to DRMO for disposal
309	3/26/91	Dielectric fluid (non-PCB)	<1 gallon	Outside	Leaking transformer West of Building 309 in DRMO yard	Absorbed by soak-up pads Products to DRMO for disposal
309	12/2/91	Cleaning compound solvent	30 gallons	Outside	On B Street, Southwest of Building 309	Absorbent applied Contaminated material excavated, containerized and taken to DRMO for disposal
349	3/5/93	Hydraulic fluid	6 gallons	Outside	Section 3 - North dock	Absorbent applied Product taken to DRMO for disposal
359	8/27/93	Sulfuric acid	1 pint	Inside	Section 2 - Charging station, battery boiled over	Product neutralized, containerized and taken to DRMO for disposal
449	7/27/93	Lube oil	<55 gallons	Outside	North dock	Absorbent applied Product taken to DRMO for disposal
449	4/7/95	Hydraulic fluid	1 gallons	Outside	Section 3 - West side dock	Absorbent applied Product taken to DRMO for disposal
469	12/16/93	Transformer oil containing PCBs	5 pint	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, stock selector turned over on gravel drive	Product neutralized, containerized and taken to DRMO for disposal
489	11/3/95	80w90 oil	1 gallons	Outside	Section 4 - North dock	Absorbent applied Product taken to DRMO for disposal
490	6/1/94	Sulfuric acid	1 quart	Inside	Section 5	Product neutralized, containerized and taken to DRMO for disposal
490	9/27/94	Cleaner/degreaser	1 gallon	Inside	South dock - 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
529	8/10/93	Hydraulic fluid	1 gallon	Inside	South dock, Section 2, Door 2 - forklift hose burst	Absorbent applied Product taken to DRMO for disposal
529	8/11/93	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	South side at Door 8 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	12/10/93	Sulfuric acid	<1 gallon	Inside	Section 3 - battery fell off charger	Product neutralized, containerized and taken to DRMO for disposal
560	10/17/95	Aqueous film forming foam	5 gallons	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 pints	Outside	North side on C Street	Absorbent applied Product taken to DRMO for disposal
649	5/16/90	Paint, lube oil, insecticide, other oil	3 quarts	Outside	Leaking containers near the east end dumpster	Absorbent applied Product to recoup for disposal
649	8/11/95	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	5/4/90	Battery electrolyte	10 gallons	Outside	6th Street and Building 670	Product neutralized, containerized and taken to DRMO for disposal
670	8/30/95	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	5/8/90	Nitric acid	1 pint	Inside	Section 5 - "Hot House"	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	SPILED MATERIAL	QUANTITY	INSIDE/ OUTSIDE	LOCATION/COMMENTS	ACTION TAKEN
689	2/13/92	Hydraulic fluid	2 gallons	Inside	Section 4 - North dock	Absorbent applied Product taken to DRMO for disposal
689	1/2/93	Carbon removing compound	1 gallon	Inside	Section 5 - leaking drum inside trailer	Absorbent applied Product taken to DRMO for disposal
689	9/30/93	Corrosion removing compound	<55 gallons	Inside	Bay 6 - Leaking containers	Absorbent applied Product taken to DRMO for disposal
689	6/13/94	Deicer	40 gallons	Outside	Section 4, Northwest end, Door 31, on street	Absorbent applied Product taken to DRMO for disposal
689	1/17/95	Oil	2.5 gallons	Outside	Section 3 - Back door	Absorbent applied Product taken to DRMO for disposal
689	8/15/95	Hydraulic fluid	2 gallons	Outside	Section 5 - Door 8	Absorbent applied Product taken to DRMO for disposal
689	10/12/95	Sulfuric acid	1 gallon	Inside	Section 5 - Southwest side at Door 34	Product neutralized, containerized and taken to DRMO for disposal
689	11/6/95	Hydraulic fluid	2 gallons	Outside	Section 5 - West dock, Door 8	Absorbent applied Product taken to DRMO for disposal
689	11/15/95	Hydraulic fluid	1.25 gallons	Inside	Section 3 - Southwest corner	Absorbent applied Product taken to DRMO for disposal
689	11/16/95	Hydraulic fluid	0.3 gallon	Inside	Northeast corner	Absorbent applied Product taken to DRMO for disposal
690	2/17/94	Turbine engine oil	10 gallons	Outside	West side loading dock	Absorbent applied Product taken to DRMO for disposal
690	3/31/94	Sulfuric acid	5 quart	Outside	West side loading dock	Product neutralized, containerized and taken to DRMO for disposal
737	11/9/95	Mineral oil <1ppm PCB	50 gallons	Outside	West side	Absorbent applied Soil excavated, containerized and all products taken to DRMO for disposal
770	7/9/90	Mineral oil containing PCBs (>50 ppm, <500 ppm)	50 gallons	Outside	West side 14.5 cubic yards of contaminated soil excavated Confirmatory samples taken.	Absorbent applied Soil excavated, containerized and all products taken to DRMO for disposal
770	11/8/91	Petroleum	<55 gallons	Outside	55-gallons drum ruptured on the West side	Absorbent applied Soil excavated, containerized and all products taken to DRMO for disposal
835	3/9/91	Battery acid	9 gallons	Inside	Section 3	Product neutralized, containerized and taken to DRMO for disposal

**TABLE 3-2
SPILL RESPONSE SUMMARY**

BUILDING	DATE	SPILLED MATERIAL	QUANTITY	INSIDE/ OUTSIDE	LOCATION/COMMENTS	ACTION TAKEN
835	6/25/91	Hydrochloric acid	5 gallons	Inside	Section 4 - R84 dock area	Product neutralized, contained and taken to DRMO for disposal
835	7/1/91	Ammonium hydroxide	6 gallons	Inside	Section 2	Neutralized spill with glacial acetic acid 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	Battery fluid 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	3/17/92	Muratic 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	R87 location - Line on stock selector broke	Absorbent applied Product taken to DRMO for disposal
835	2/22/93	Orthodontic 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	Calcaum Hypochlorite	5 pounds	Inside	Section 2 - Oxidizer section	Product swept, contained and taken to DRMO for disposal
835	7/22/93	Herbicide (Benefin), granular	Several pounds	Inside	Section 5 25 each damaged 40-lbs bags	Product swept, contained and taken to DRMO for disposal
835	8/31/93	Cleaning compound solvent	2 5 gallons	Inside	Section 3	Product neutralized, contained and taken to DRMO for disposal
835	10/1/93	Hydrofluoric acid	1 gallon	Inside	Section 3 - 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	3/1/94	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 ruptured 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	SPILED MATERIAL	QUANTITY	INSIDE/ OUTSIDE	LOCATION/COMMENTS	ACTION TAKEN
835	6/9/94	Microbrade	1 quart	Inside	Section 3	Absorbent applied for disposal Product taken to DRMO
835	8/18/94	Cleaning compound solvent	2.5 gallons	Outside	West loading dock	Product neutralized, containerized and taken to DRMO for disposal
835	11/23/94	Phosphoric acid	2 quarts	Inside	Section 5	Product neutralized, containerized and taken to DRMO for disposal
835	3/5/95	Sulfuric acid	2.5 gallons	Inside	Section 3	Product neutralized, containerized and taken to DRMO for disposal
835	5/26/95	Transmission fluid	10 gallons	Outside	Section 4 - West side	Absorbent applied for disposal Product taken to DRMO
860	3/17/92	Lube oil	Several quarts	Inside	North side	Absorbent applied for disposal Product taken to DRMO
860	1/13/94	Lube oil	3 gallons	Inside	North side	Absorbent applied for disposal Product taken to DRMO
873	3/10/90	Tetrachloroethylene	60 gallons	Inside/Outside	Section 2 and outside - West onto gravel	Absorbent applied for disposal Soil excavated, containerized and all products taken to DRMO
873	12/7/90	Cleaning compound solvent	55 gallons	Inside	Section 1 - East side	Absorbent applied for disposal Product taken to DRMO
873	3/9/91	Lube oil	25 gallons	Inside	Section 2	Absorbent applied for disposal Product taken to DRMO
873	8/16/91	Hydraulic fluid	2 gallons	Outside	Section 1	Absorbent applied for disposal Product taken to DRMO
873	11/18/91	Cleaning compound solvent	10 gallons	Inside	Section 1	Absorbent applied for disposal Product taken to DRMO
873	11/18/91	Cleaning compound solvent	20 gallons	Inside	Section 1	Absorbent applied for disposal Product taken to DRMO
873	11/26/91	Fog oil	55 gallons	Outside	Section 7 - West side	Absorbent applied for disposal Soil excavated, containerized and all products taken to DRMO
873	11/26/91	Cleaning compound solvent	18 gallons	Outside	Section 3	Absorbent applied for disposal Soil excavated, containerized and all products taken to DRMO
873	2/13/92	Descaling compound	10 gallons	Inside	Section 6 - loading dock	Absorbent applied for disposal Product taken to DRMO

**TABLE 3-2
SPILL RESPONSE SUMMARY**

BUILDING	DATE	SPILLED MATERIAL	QUANTITY	INSIDE/ OUTSIDE	LOCATION/COMMENTS	ACTION TAKEN
873	3/2/92	Lube oil	55 gallons	Outside	Southwest 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 15th 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 - drums corroded	Product neutralized, containerized and taken to DRMO for disposal
873	8/6/93	Corrosion removing compound	75 gallon	Inside	Section 5 - Leaking drum	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	Hydrofluoric 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	6/8/94	Tincture benzoin	3 pints	Inside	Section 2	Absorbent applied. Product taken to DRMO for disposal
873	7/11/94	Diethylene glycol	55 gallons	Outside	Northwest end	Absorbent applied. Soil excavated, containerized and all products taken to DRMO for disposal
873	8/11/94	Methanol	3 pints	Inside	Section 2 - Most of spill evaporated	Absorbent applied. Product taken to DRMO for disposal
873	8/29/94	Transmission fluid	5 gallons	Outside/Inside	Forklift 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	Malathion	2 gallons	Outside/Inside	Inside Roadway trailer. 2 drums fell and leaked	Absorbent applied. Product taken to DRMO for disposal
875	12/6/95	Oil/lubricant	2 quarts	Outside	East side on 15th 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 punctured	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	5/23/94	Sulfuric Acid	30 gallons	Outside	South of Gate 20 - West of 309/308	Product neutralized, Soil excavated, containerized and all products taken to DRMO for disposal
Gate 1	10/28/93	Diesel fuel	2 gallons	Outside	Gate 1 in street	Absorbent applied Product taken to DRMO for disposal
Gate 1	1/14/94	Diesel fuel	5 gallons	Outside	Gate 1 in street	Absorbent applied Product taken to DRMO for disposal
Gate 1	3/22/95	Motor oil	4 gallons	Outside	Gate 1 parking lot	Absorbent applied Product taken to DRMO for disposal
Gate 15	9/12/95	Hydraulic fluid	1 25 gallon	Outside	A Street and 11th Street - North through Gate 15 to Dunn Field	Absorbent applied Product taken to DRMO for disposal
X02	6/3/94	Mineral oil < 1 ppm PCB	10 gallons	Outside	Between 771 and 873 - transformer fell off truck	Absorbent applied Product taken to DRMO for disposal
X10	7/26/93	Ethyl acetate/Naphtha aromatic	<1 gallon of each	Outside	Damaged, leaking 55-gallons drums	Absorbent applied Soil excavated, containerized and all products taken to DRMO for disposal
X20	5/7/90	Cleaning compound solvent	Unknown - Small amount of product leaked from each of 12 drums	Outside	Leaking 55-gallons drums	Absorbent applied Soil excavated, containerized and all products taken to DRMO for disposal
X27	5/13/94	Hydraulic fluid	25 gallons	Outside	On 27th Street from 925 to 972	Absorbent applied Soil excavated, containerized and all products taken to DRMO for disposal
X30	4/19/94	Hydraulic fluid	5 gallons	Outside	G Street from 1089 to Gate 15	Absorbent applied Product taken to DRMO for disposal

482 135

TABLE 3-3
SOURCES OF POTENTIAL CONTAMINATION

FACILITY/PROPERTY	SUBPARCEL NUMBER	INSTALLATION RESTORATION SITE	FACILITY USE	SOURCE OF POTENTIAL CONTAMINATION ^(a)
Building 720, Train Engine Repair Shop	33.9(7)	80	Light industrial	Diesel dispensing area (potential)
Building 737, Pest Control Shop	33.9(7)	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
Area X10 and X11, 55-gallon drum storage	33.9(7)		Storage	Storage of POL and other hazardous substances
Building 770, Facility Equipment Maintenance Shop	24.3(7)	30/34/40/41	Light and heavy industrial	POL drum storage area, fork lift waste station, and residue from sandblasting and painting
Building 1086, Paint Booth	35.3(6)	30	Light industrial	Former hazardous materials storage and potential for paint residue, sump
Building 1090	35.1(6)		Storage	POL storage
Areas X02 and X03, POL 55-gallon drum storage/Steel Storage Yard	24.2(7)		Storage	Storage of petroleum products and other hazardous substances
Storage Areas X17, X19, X21X23 and X27	31.1(7), 30.3(7), 29.2(7)		Storage	Storage of petroleum products and other hazardous substances

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

**TABLE 3-4
UNDERGROUND STORAGE TANK SUMMARY**

482 137

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	Diesel	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
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	Pesticide/herbicide/insecticide rinsate	Closed in place September 1995	NA
33.9	Building 754	1956	200	Gasoline	Removed January 1986	NA

TABLE 3-4
UNDERGROUND STORAGE TANK SUMMARY

SUBPARCEL NO.	LOCATION	YEAR INSTALLED	SIZE (gals)	SUBSTANCE STORED	STATUS	FUTURE ACTIONS
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 in December 1989	NA
35 2	Building 1085	1950	100	Hydraulic fluid	Closed in place July 1995	NA

Notes:

EBS Environmental Baseline Survey

NA Not applicable

TBD To be determined

UST: Underground storage tank

**TABLE 3-5
ABOVEGROUND STORAGE TANK SUMMARY**

482 139

SUBPARCEL NO.	LOCATION	YEAR INSTALLED	SIZE (gals)	SUBSTANCE STORED	STATUS	FUTURE ACTIONS
4.7	Building 257	1992	1,000	Gasoline	Inactive	DRC
4.7	Building 257	1992	1,000	Diesel fuel	Inactive	DRC
24.3	Building 770	1951	11,155	Diesel fuel	Removed July 1994	NA
24.3	Building 770	1951	11,155	Fuel oil	Removed July 1994	NA
33.9	Building 720,	1942	12,000	Diesel fuel	Removed June 1997	NA
17.2	Staging area east of Building 360	1992	1,000	Diesel fuel	Inactive 1999	DRC
13.5	Building 210	1988	500	Diesel fuel	Active	TBD
33.7	Building 765	1942	11,155	Diesel fuel	Removed July 1994	NA
33.11	Building 756	1994	1,000	Diesel fuel	Active	TBD

Notes:

NA Not applicable

TBD To be determined

DRC The Depot Redevelopment Corporation has taken possession of this AST and is responsible for any future actions regarding it.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

SUBPARCEL NUMBER AND LABEL	LOCATION (x, y coordinates)	APPROXIMATE SIZE (acres)	FACILITY	BASIS	REMEDIAATION/ MITIGATION
Environmental Condition Category 1					
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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.

TABLE 3-6
SUBPARCEL DESCRIPTIONS

3.1(1)	32,2	0 01	Building 193	This subparcel is associated with Building 193. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary
3.2(1)	31,2	0 10	Building 195	This subparcel is associated with Building 195. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary
3.3(1)	31,2	0 02	Building 196	This subparcel is associated with Building 196. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary
3.4(1)	31,2	0 01	Building 198	This subparcel is associated with Building 198. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary
4.1(1) Demolished 1999	30,10	0 19	Building 252	This subparcel is associated with Building 252. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary
4.2(1)	31,7	0 33	Building 270	This subparcel is associated with Building 270. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary
4.3(1)	31,7	0 03	Building 271	This subparcel is associated with Building 271. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

4.11(1) Demolished 1999	29,9	0.22	Building 253	<p>This subparcel is associated with Building 253, No Further Action Site 40 (Safety Klean unit) and Screening Site (SS) 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 Klean prior to closure removed the Safety Klean unit in September 1997. One screening site surface soil and three soil boring samples were taken from around the outside of the building in Subparcel 4.5. Results indicated levels of poly aromatic hydrocarbons (PAHs) that exceeded the BCT screening criteria. Also, this building was fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. At the September 1997 meeting, the BCT agreed to change the subparcel to a Category 6 based on soil sample results outside the building. In February 1998, the BCT concurred the subparcel (Building 253) would change to a Category 1 and that the issue of PAHs in the soil outside the building in Subparcel 4.5 would be further evaluated on a sitewide basis. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel.</p>	No remediation is necessary
6.3(1)	27,12	2.8	Building 349	<p>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 that this subparcel change to Category 1. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel.</p>	No remediation is necessary
8.2(1)	29,15	2.8	Building 229	<p>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 that this subparcel change to Category 1. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel.</p>	No remediation is necessary.
8.3(1)	29,14	2.8	Building 230	<p>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 that this subparcel change to Category 1. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel.</p>	No remediation is necessary
8.4(1)	26,15	2.8	Building 329	<p>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 that this subparcel change to Category 1. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel.</p>	No remediation is necessary

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

8 5(1)	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 that this subparcel change to Category 1. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel	No remediation is necessary
9 2(1)	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 that this subparcel change to Category 1. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel	No remediation is necessary
9 4(1)	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 that this subparcel change to Category 1. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel	No remediation is necessary
9 5(1)	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 that this subparcel change to Category 1. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel	No remediation is necessary
10 4(1)	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 that this subparcel change to Category 1. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel	No remediation is necessary
10 6(1)	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 that this subparcel change to Category 1. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel	No remediation is necessary
11.3(1)	20,14	2 8	Building 530	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 that this subparcel change to Category 1. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel	No remediation is necessary

482 144

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

11 4(1)	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 that this subparcel change to Category 1. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary
13 1(1)	33,16	<0.01	Sentry Station/Gate 23	This subparcel is associated with the Sentry Station at Gate 23. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary
13 2(1)	33,16	<0.01	Sentry Station/Gate 24	This subparcel is associated with the Sentry Station at Gate 24. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary
13 3(1)	32,16	<0.01	Sentry Station/Gate 25	This subparcel is associated with the Sentry Station at Gate 25. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary
13.4(1) JHS	31,17	5.5	Building 210	This subparcel is associated with Building 210 and proposed No Further Action Site 41 (Satellite Drum Accumulation Area). The building also contained the base photographer's photo developing lab in Bay 7. 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 became a Category 1 due to the Category definition change that occurred after the 1996 Environmental Baseline Survey categorized this subparcel as a Category 2. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary
14.1(1)	27,19	<0.01	Sentry Station/Gate 22	This subparcel is associated with the Sentry Station at Gate 22. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

15.1(1)	10,18	<0.01	Sentry Station/Gate 15	This subparcel is associated with the Sentry Station at Gate 15. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
16.2(1) 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 that this subparcel change to Category 1. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
17.1(1)	22,10 Relocated to Parcel 30 adjacent to Building 925	0.09	Building 459	This subparcel is associated with Building 459. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
21.1(1)HS	17,3	5.0	Building 690	This subparcel is associated with Building 690, which has been used to temporarily stage hazardous materials prior to shipment. Screening Site (SS) 77, which is typically associated with this building, is adjacent to and not inside of the building. There has been no documented release or disposal of hazardous substances or petroleum products, nor has there been migration from adjacent properties of hazardous substances or petroleum products. 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 that this subparcel change to a Category 1 based on the new ECP definitions. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
23.1(1)	19,2	<0.01	Sentry Station/Gate 7	This subparcel is associated with the Sentry Station at Gate 7. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
23.2(1)	13,2	0.02	Sentry Station/Gate 8	This subparcel is associated with the Sentry Station at Gate 8. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

23 3(1)	11,4	0.12	Building 787	This subparcel is associated with Building 787. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
23 4(1)	13,3	0.01	Waiting Shelter/ Building 795	This subparcel is associated with Building 795. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
23 5(1)	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. Groundwater under this subparcel has been found to contain VOCs. 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 the groundwater 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. EPA will evaluate transfer of Subparcel 23 5 based on the environmental condition of soils in Parcel 23.	No remediation is necessary. The groundwater under this subparcel will be further evaluated.
29 1(1)	3,10	0.01	Sentry Station/Gate 9	This subparcel is associated with the Sentry Station at Gate 9. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
30.4(1)	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 that this subparcel change to Category 1. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
33 1(1)	12,16	0.01	Building 727	This subparcel is associated with Building 727. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.

TABLE 3-6
SUBPARCEL DESCRIPTIONS

33.2(1)	14,10	0.05	Building 754	This subparcel is associated with Building 754. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
33.3(1)	14,10	0.01	Building 755	This subparcel is associated with Building 755. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
33.4(1)	14,9	0.06	Building 756	This subparcel is associated with Building 756. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
33.5(1)	11,10	0.02	Building 860	This subparcel is associated with Building 860. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
33.10(1)	14,10	0.01	Building 753	This subparcel is associated with Building 753. 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 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 that this subparcel change to a Category 1 based on the new ECP definitions. Per letter dated October 20, 1998, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.
34.1(1)	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. 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. Per letter dated March 17, 1997, the EPA concurred with the Category 1 designation for this subparcel.	No remediation is necessary.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

Environmental Condition Category 2					
4,6(2) Demolished 1999	29,9	0 25	Building 254	<p>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 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. At the September 1997 meeting, the BCT changed this subparcel to a Category 6 due to the scheduled underground storage tanks removal project. Upon receipt of UST closure approval by TDEC-UST in December 1998, the BCT agreed that this subparcel should change from ECP Category 6 to Category 2.</p>	UST closure approval from TDEC-UST received in December 1998. No further action is necessary.
4 7(2) Demolished 1999	28,10	0 25	Buildings 256 and 257	<p>This subparcel is associated with Buildings 256 and 257 and Screening Site 67. Building 256 was a small storage shed adjacent to Building 257. Building 256 and 257 were demolished in 1999 by the DRC 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 are reported for this building. 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. One soil sample taken during the 1990 Law RI detected PAHs, dieldrin and metals. During Screening Site sampling, two surface soil and two shallow soil boring samples were collected (CH2M Hill, 1997). Samples indicated arsenic and dieldrin in surface soils at levels that exceeded BCT screening criteria. Two underground storage tanks (18,000 and 20,000 gallons) were removed in 1998 from the open land area south of Bldg 257. At the September 1997 meeting, the BCT changed this subparcel to a Category 6 due to the scheduled underground storage tanks removal project. Additional soil samples were collected after completion of the tank removal project and results indicated no levels that exceeded BCT screening criteria. Upon receipt of UST closure approval from TDEC-UST in December 1998, the BCT agreed this subparcel should change from ECP Category 6 to Category 2.</p>	UST closure approval from TDEC-UST received in December 1998. No further action is necessary.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

20 1(2)PR	21,5	0.46	Building 489	<p>This subparcel is associated with an oil spill on the north dock of Building 489. A 1-gallon oil spill was reported on November 3, 1995 at the north dock of Building 489, Section 4. The Spill Team responded, applied absorbent and disposed of the residue in accordance with federal, state and local regulations. The 1996 Environmental Baseline Survey categorized this subparcel as a Category 3. In 1997, the ECP category definitions changed so that Category 3 was no longer appropriate for petroleum product releases. In December 1998, the BCT concurred that this subparcel change to a Category 2 based on the new ECP definitions and release of a petroleum product.</p>	No remediation is necessary
23 9(2)	4,2	0.25	Spill area outside Building 995	<p>This subparcel is associated with a gasoline spill reported on September 13, 1993, adjacent and to the northwest of Building 995 on the asphalt road. The Spill Team responded, applied absorbent and disposed of all residues in accordance with federal, state and local regulations. One BRAC soil boring and surface soil sample was collected from the center of the suspected spill area. 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 that this subparcel change to a Category 3; however, these discussions regarding this subparcel did not take the 1997 ECP category definition change so that Category 3 was no longer appropriate for petroleum product releases into account when determining this parcel's ECP category. In December 1998, the BCT concurred that this subparcel change from ECP Category 3 to Category 2 based on the new ECP definitions and release of a petroleum product.</p>	No remediation is necessary. The groundwater under this subparcel will be further evaluated.
26 2(2)	6,4	6.3	Building 970	<p>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 that this subparcel change from ECP Category 7 to Category 2.</p>	No remediation is necessary

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

33 6(2)HR	13,13	0 25	Spill area west of Building 737	<p>This subparcel is associated with a spill area west of Building 737. A 50-gallon mineral oil (non-PCB/<1 ppm) spill was reported on November 9, 1995 outside of Building 737. The Spill Team responded, excavated contaminated material and disposed of the residue in accordance with federal, state and local regulations. This subparcel is also associated with proposed No Further Action Site 44 (Former Waste Water Treatment Unit). This 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 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 agreed Category 4 was not appropriate, as the release involved a petroleum product, and agreed the subparcel should change from an ECP Category 4 to a Category 2.</p>	No remediation is necessary
33 11(2)	14,9	0 25	Outside Building 756	<p>This subparcel is associated with the 1,000-gallon diesel above ground storage tank outside Building 756. The original underground storage tank supplying the emergency generator in Building 756 was removed in June 1994. At that time, soil was sampled for Total Petroleum Hydrocarbons and found to contain less than 20 ppm. The 1996 Environmental Baseline Survey determined this subparcel to be an ECP Category 2 and the BCT concurred.</p>	No remediation is necessary

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

Environmental Condition Category 3					No further remediation is necessary
4.4(3)PS/PR/HS/HR	30,9	0 15	Building 260	This subparcel is associated with Building 260, proposed No Further Action Site 41 (Satellite Drum Accumulation Area) and proposed No Further Action Site 30 (Safety Klean Units) The RCRA Facility Assessment visual inspection noted staining on the floor in the sign shop of this building 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 Environmental Baseline Survey determined this subparcel to be ECP Category 3 and the BCT concurred	
4 8(3)	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 Screening Site (SS) 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 Soil borings were sampled during the Screening Site Sampling Program Sample results indicate no levels that exceeded BCT screening criteria 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 concern that petroleum products and antifreeze may have been released In June 1998, the BCT again concurred that this subparcel change from ECP Category 7 to Category 3	No remediation is necessary
5 1(3)	29,7	0 49	Building 272 and surrounding open land area	This subparcel is associated with Building 272, a small shed that stored mulch, and the surrounding open land area This subparcel contains grassed areas that were historically sprayed with herbicides and pesticides. One Remedial Investigation (associated with Site 58 - Pad 267) soil sample and one BRAC soil sample were collected Sample results indicated no levels that exceeded the BCT screening criteria At the September 1997 meeting, the BCT concurred that this subparcel change from ECP Category 7 to a Category 3	No remediation is necessary
6 2(3)	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 were 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 release of battery acid In June 1998, the BCT again concurred that this subparcel change from ECP Category 7 to a Category 3	No remediation is necessary

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

6.4(3)	26,11	2 8	Building 350	<p>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 were 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 release of battery acid. In June 1998, the BCT again concurred that this subparcel change from ECP Category 7 to a Category 3.</p>	No remediation is necessary.
9.3(3)	23,13	2 8	Building 430	<p>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 were 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 Category 3 based on the release of battery acid. In June 1998, the BCT again concurred that this subparcel change from ECP Category 7 to a Category 3.</p>	No remediation is necessary.
10.1(3)HR	16,12	2 8	Building 649	<p>This subparcel is associated with Building 649 and may have been fumigated. Air sampling conducted during the BRAC sampling effort indicated no human health hazards from fumigation. A 1-gallon hydraulic fluid spill was reported on August 11, 1995, inside Building 649, Section 5. In addition, leaking containers of paint/lube oil/insecticide and other oil were reported on May 16, 1990, outside Building 649. The Spill Team responded, applied absorbent and disposed of all residues in accordance with federal, state and local regulations. The 1996 Environmental Baseline Survey determined this subparcel to be ECP Category 3 and the BCT concurred based on the cleanup of the spills.</p>	No remediation is necessary.
10.5(3)	19,11	2 8	Building 550	<p>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 were 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 Category 3 based on the release of battery acid. In June 1998, the BCT again concurred that this subparcel change from ECP Category 7 to Category 3.</p>	No remediation is necessary.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

11.2(3)	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 were 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 release of battery acid and firefighting foam. In June 1998, the BCT again concurred that this subparcel change from ECP Category 7 to Category 3.</p>	No remediation is necessary.
15.2(3)	26,18	0.01	Building 308	<p>This subparcel is associated with 308 and Screening Site 35 (Building 308 - Hazardous Waste Storage). Three screening site soil borings taken from around the building were sampled. Sample results indicated arsenic in surface soil below the BCT screening criteria as well as chromium and lead in subsurface soil near background levels. All levels appear to be naturally occurring. SS 35 does not exhibit waste accumulation-related contamination. The Preliminary Risk Evaluation indicates SS 35 does not pose a human health concern for industrial or residential scenarios and recommends the subparcel change to a Category 3. Also, air sampling conducted in this building to assess the impact from storage of hazardous materials indicated no human health hazards. At the September 1997 meeting, the BCT reviewed the data and determined that no levels exceeded BCT screening criteria, but no category change was mentioned. In June 1998, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 3.</p>	No remediation is necessary.
15.4(3) Demolished 1998	14,18	0.28	Building 702	<p>This subparcel is associated with Building 702, the Officer's Hobby Shop that was demolished in February 1998. Fuels/miscellaneous liquids were stored and used in Building 702. Site 79 is located in Subparcel 15.6 adjacent to Building 702. A soil boring at Site 79 indicated elevated levels of chromium. The BCT determined at its September 1997 meeting that Site 79 required a risk assessment to determine future actions. In February 1999, the BCT concurred that Subparcel 15.4 change from an ECP Category 7 to a Category 3 because the building has been demolished and the soils surrounding the building would be addressed during further investigation/risk assessments for Subparcel 15.6.</p>	No remediation is necessary.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

18.2(3)	19,8	2.6	Open land area surrounding Building 560	<p>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. This subparcel also contains grassed areas that were historically sprayed with herbicides and pesticides. One BRAC soil sample was collected. Sample results indicated no levels that exceeded the BCT screening criteria. In September 1997, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 3.</p>	No remediation is necessary
19.1(3)	21,8	2.8	Buildings 467 (fabric tension structure removed in 1996), 468, and open land area surrounding Buildings 465, 467, 468 and 469	<p>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. This subparcel also contains a small grassed 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 and looked at BRAC sampling data from adjacent Parcels 18.2 and 34.2 that indicated one chlordane level that exceeded BCT screening criteria. The PRE indicated the level to be below one in a million risk for industrial and residential scenarios. 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 that Subparcel 19.1 change from an ECP Category 7 to Category 3.</p>	No remediation is necessary.
19.2(3)	22,7	0.01	Building 465	<p>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 that the wash rack has been used since then only to wash grass cutting equipment. In May 1999, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 3.</p>	No remediation is necessary
23.6(3)	12,2	20.6	Open land area surrounding buildings 783, 787 and 793 and Sentry Stations at Gates 7 and 8	<p>This subparcel is associated with open land areas south of Buildings 690 and 490 including parking lots and grassed 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 the open land area surrounding Screening Site (SS) 82 (Flammables - Buildings 783 and 793). This subparcel contains grassed areas that were historically sprayed with herbicides and pesticides. Four screening site surface soil, four screening site subsurface soil and one BRAC surface soil samples were collected. Sample results indicate arsenic levels in surface soil (20.2 and 24.3 mg/kg) near the range of background levels (20 mg/kg), but below BCT screening criteria. In October 1997, the BCT concurred that this subparcel change to from an ECP Category 7 to Category 3.</p>	No remediation is necessary. The groundwater under this subparcel will be further evaluated

TABLE 3-6
SUBPARCEL DESCRIPTIONS

23 7(3)	11,5	0.05	Building 783	<p>This subparcel is associated with Building 783 that previously stored flammable items and ordnance material and is Screening Site 82. Building 783 was used by the U S Army Chemical Warfare Service from 1942 until 1956 for storage of flammable materials including hexachlorethane smoke pots, burning-mixture chloracetophenone tear gas solution and phosphorus/ rubber-gasoline solution filled grenades. The U S Army Corps of Engineer - St Louis District found no evidence of release or disposal at this building of chemical warfare material during research for preparation of the "Ordnance and Explosive Waste/Chemical Warfare Materials Archive Search Report for Memphis Defense Depot." Four screening site surface soil, four screening site subsurface soil and one BRAC surface soil samples were collected in Subparcel 23 6, the grassed area surrounding the building. Sample results indicate arsenic levels in surface soil (20.2 and 24.3 mg/kg) near the range of background levels (20 mg/kg), but below BCT screening criteria. In March 1999, the BCT concurred that this subparcel change from ECP Category 7 to a Category 3 based on a BCT visual inspection of the building's interior to determine its condition and on results of screening site samples taken in Subparcel 23 6.</p>	No remediation is necessary
23 8(3)	11,3	0.04	Building 793	<p>This subparcel is associated with Building 793 that previously stored flammable items and ordnance material and is Screening Site 82. Building 793 was used by the U S Army Chemical Warfare Service from 1942 until 1956 for storage of flammable materials including hexachlorethane smoke pots, burning-mixture chloracetophenone tear gas solution and phosphorus/ rubber-gasoline solution filled grenades. The U.S. Army Corps of Engineer - St Louis District found no evidence of release or disposal at this building of chemical warfare material during research for preparation of the "Ordnance and Explosive Waste/Chemical Warfare Materials Archive Search Report for Memphis Defense Depot." Four screening site surface soil, four screening site subsurface soil and one BRAC surface soil samples were collected in Subparcel 23 6, the grassed area surrounding the building. Sample results indicate arsenic levels in surface soil (20.2 and 24.3 mg/kg) near the range of background levels (20 mg/kg), but below BCT screening criteria. In March 1999, the BCT concurred that this subparcel change from ECP Category 7 to a Category 3 based on a BCT visual inspection of the building's interior to determine its condition and on results of screening site samples taken in Subparcel 23 6.</p>	No remediation is necessary

TABLE 3-6
SUBPARCEL DESCRIPTIONS

23 10(3)	8,2	2 6	Area X01	<p>This subparcel is associated with the open gravel storage area south of Buildings 873 and 875 in area X01, which was reportedly once a small lake. This subparcel consists of a gravel area that was historically sprayed with waste oil containing PCP, pesticides and herbicides and a grassed area that were historically sprayed with 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. One BRAC surface soil sample and one BRAC soil boring were collected. Sample results indicate that no levels that exceeded the BCT screening criteria. In October 1997, the BCT concurred that this subparcel change from an ECP Category 7 to Category 3.</p>	No remediation is necessary. The groundwater under this subparcel will be further evaluated.
28 1(3)	2,7	6 0	Area X04	<p>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. According to DDMT personnel, this area was used for the storage of feed stock material and not hazardous materials. Four BRAC soil samples, two surface and two subsurface, were collected. Sample results indicate aluminum and iron in surface soil near the range of the BCT screening criteria and lead within the background value range. The Preliminary Risk Evaluation indicated that carcinogenic risks were below acceptable levels for both industrial worker and residential scenarios of one in a million, noncarcinogenic risks were above one in a million due to the inorganic chemicals aluminum and iron in both subsurface and surface, but the concentrations of these constituents in surface soils only did not pose significant health risks. In October 1997, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 3.</p>	No remediation is necessary.
32 1(3)	9,14	4 6	Areas X13 and X15	<p>This subparcel is associated with open storage areas X13 and X15 that are 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. Four BRAC soil samples (two surface and two subsurface) were collected. Sample results indicate that no levels exceeded the BCT screening criteria. In October 1997, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 3.</p>	No remediation is necessary.
33 8(3)	10,10	0 03	Building 863	<p>This subparcel is associated with Building 863. The building contained a battery charging station. Material handling equipment (forklifts) were 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 that this subparcel change from an ECP Category 7 to a Category 3.</p>	No remediation is necessary.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

34 2(3)		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. This subparcel also contains grassed areas that were historically sprayed with herbicides and pesticides. One BRAC soil sample was collected. Sample results indicate chlordane at levels that exceeded the BCT screening criteria. The Preliminary Risk Evaluation indicated that the carcinogenic and noncarcinogenic risks were well below the acceptable levels of one in a million for both industrial worker and residential scenarios. In October 1997, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 3.	No remediation is necessary.
Environmental Condition Category 4						
27(4)		33,6	1 8	Open land area surrounding the military family housing units and garages	This subparcel is associated with the open land area surrounding the military family housing units and garages in Parcel 2. This subparcel contains grassed areas that were historically sprayed with herbicides and pesticides. Four BRAC soil samples were collected. Samples indicated levels of chlorinated hydrocarbon pesticides (dieldrin, DDE, DDT and gamma-chlordane) above BCT screening criteria. At the September 1997 meeting, the BCT changed this subparcel to a Category 6 due to the presence of pesticides, particularly dieldrin, and the Depot Redevelopment Corporation's high priority for reuse of this subparcel. An early removal project was completed and post removal reports provided to EPA, TDEC and the public via the Information Repositories. In May 1999, the BCT concurred that the early removal action was complete and that this subparcel change from an ECP Category 6 to a Category 4 based on successful completion of the removal action.	No further remediation is necessary.
4 12(4) Demolished 1999		31,10	0 18	Building 251	This subparcel is associated with Building 251 that has a floor drain connected to the sanitary sewer. This building was demolished in 1999 by the DRC during construction of the entrance boulevard. One surface soil sample was taken from the sump beneath the floor drain. Results indicate elevated concentrations of many metals and poly aromatic hydrocarbons. 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 action was completed in January 1998 and the ECP Category 7 changed to Category 4.	No further remediation is necessary.

TABLE 3-6
SUBPARCEL DESCRIPTIONS

4.13(4)	31,8	0.18	Building 265	<p>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 poly aromatic hydrocarbons. 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 action was completed in June 1998 and the ECP Category 7 changed to Category 4.</p>	No further remediation is necessary
5.2(4)	29,7	1.5	Building 274 and open land area surrounding Building 274	<p>This subparcel is associated with Building 274 ("J" Street Cafe) and the open land area surrounding the building. This subparcel is also associated with Remedial Investigation (RI) Site 48 (The former PCB Transformer Area). Building 274 was constructed after transformer storage ceased. 1990 Law RI soil samples detected PAHs and DDT (and breakdown products). A groundwater sample (CH2M Hill 1995b, 1995e) in MW-26 detected tetrachloroethane and carbon tetrachloride and will be further evaluated in the Main Installation groundwater investigation.</p> <p>In 1997, five Remedial Investigation surface soil samples were collected (CH2M Hill, 1997) from the grassed areas directly outside of Building 274. Sample results indicated levels of PCBs and dieldrin exceeding BCT screening levels. The Depot Redevelopment Corporation identified this subparcel as a high priority for reuse. In August 1997, the BCT agreed this subparcel should undergo a removal of surface soils. At the September 1997 meeting, the BCT concurred that this subparcel change to a Category 6. In 1998 a removal action was completed and the post removal reports provided to EPA, TDEC and the public via the Information Repositories. In May 1999, the BCT concurred that the removal action was complete and that this subparcel change from an ECP Category 6 to Category 4 based on successful completion of the removal action.</p>	No further remediation is necessary. The groundwater under this subparcel will be further evaluated.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

7.2(4)	29,12	2 8	Building 249	<p>This subparcel is associated with Building 249, which was used by the U.S. Army Chemical Warfare Service for storage of a clothing treated with XXCC-3 impregnate (provided protection from chemical warfare materials). The U.S. Army Corps of Engineer - St. Louis District found no evidence of release or disposal at this building of chemical warfare material during research for preparation of the "Ordnance and Explosive Waste/Chemical Warfare Materials Archive Search Report for Memphis Defense Depot." 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 residue 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 that this subparcel change from Category 7 to a Category 4.</p>	No further remediation is necessary.
12.2(4)	16,15	2 8	Building 629	<p>This subparcel is associated with Building 629 - the former 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 residue in accordance with federal, state and local regulations. The soil surrounding Building 629 is associated with Remedial Investigation Site 57 and will be further evaluated during the Remedial Investigation process. 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 nitric acid. In January 1998, the BCT again concurred that this subparcel change from an ECP Category 7 to a Category 4 based on successful cleanup of the spill.</p>	No further remediation is necessary.

482 160

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

15 3(4)	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 remediation occurred 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 permit remediation and closure documentation, the Memphis Depot deleted from the DDC's permit and Building 319 released for use with no NRC restrictions. In June 1998, the BCT received the NRC permit closure approval documentation and concurred that this subparcel change from an ECP Category 7 to a Category 4 based on the cleanup of the xylene spill and the low-level radioactivity.</p>	No further remediation is necessary
17 3(4) Demolished 1999	25,9	5 5	Building 359	<p>This subparcel is associated with Building 359 and proposed No Further Action Site 49 (Medical Waste Storage Area). This building was demolished in 1999 by the DRC 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 residue in accordance with federal, state and local regulations. An out of service incinerator is 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 conferred and concurred via telephone calls that this subparcel would become a Category 4 based on the cleanup of the sulfuric acid. In June 1998, the BCT again concurred that this subparcel change from an ECP Category 7 to a Category 4 based on cleanup of the spill.</p>	No further remediation is necessary
18 1(4)HS/HR	17,8	4 0	Building 560	<p>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 residue in accordance with federal, state and local regulations. The 1996 Environmental Baseline Survey determined this subparcel to be an ECP Category 4 and the BCT concurred.</p>	No further remediation is necessary.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

19 3(4)	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 No Further Action 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 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 who was present during the spill cleanup and sampling, the effected area was removed during sampling operations. In February 1999, the BCT conducted a visual inspection 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 that this subparcel should change from ECP Category 7 to Category 4 based on cleanup of the spill.</p>	No remediation is necessary
20 2(4)HS/HR	17,6	5 0	Building 670	<p>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 residue in accordance with federal, state and local regulations. The 1996 environmental Baseline Survey determined this subparcel to be an ECP Category 4 and the BCT concurred.</p>	No further remediation is necessary
20 3(4)HS/HR	20,7	5.0	Building 470	<p>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 Environmental Baseline Survey determined this subparcel to be an ECP Category 4 and the BCT concurred.</p>	No further remediation is necessary.
20 4(4)HS/HR	21,5	5 0	Building 489	<p>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 Environmental Baseline Survey determined this subparcel to be an ECP Category 4 and the BCT concurred.</p>	No further remediation is necessary

482 162

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

21 2(4)PS/HS/HR	23,3	5 0	Building 490	<p>This subparcel is associated with Building 490 and proposed No Further Action Site 40 (Safety Klean Units). The Safety Klean 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 residue in accordance with federal, state and local regulations. Petroleum products and microfiche developing chemicals were stored and used in Building 490. The 1996 Environmental Baseline Survey determined this subparcel to be an ECP Category 4 and the BCT concurred.</p>	No further remediation is necessary
21 3(4)HS/HR	15,5	5.2	Building 689	<p>This subparcel is associated with Building 689, Screening Site 78 (Alcohol, Acetone, Toluene, Naphtha, Hydrofluoric Acid Spills) and proposed No Further Action Site 40 (Safety Klean Units). Building 689 historically staged alcohol, acetone, toluene, and hydrofluoric acid before transport. The Safety Klean 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 residue in accordance with federal, state and local regulations. Four soil borings were taken from the concrete parking lot immediately adjacent to and outside of Building 689 in Subparcel 21.5. Cadmium was detected in one sample and appeared to be an isolated occurrence. TCE was detected at depths of 1 to 20 feet in one sample and may require further investigation for groundwater impacts. The 1996 Environmental Baseline Survey determined this subparcel to be an ECP Category 4 and the BCT concurred.</p>	No further remediation required in Building 689 The Groundwater under this subparcel will be further evaluated
21 4(4)HS/HR	15,4	0 73	Building 685	<p>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 Environmental Baseline Survey determined this subparcel to be an ECP Category 4 and the BCT concurred.</p>	No further remediation is necessary

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

25 1(4)HS/HR	9,4	6 2	Building 873	<p>This subparcel is associated with Building 873 and Remedial Investigation (RI) Site 27 (Former Recoupment Area - Building 873). Building 873 stored hazardous materials such as chlorinated solvents, corrosives, petroleum, oils and lubricants. The southern end of the building 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. 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 residue in accordance with federal, state and local regulations. Samples associated with RI Site 27 were taken outside of the building in subparcel 25 2 and will be further evaluated as part of the RI. At the September 1997 meeting, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 4 based on the cleanup of the spills.</p>	No further remediation is necessary.
27 2(4)	4,4	6 3	Building 972	<p>This subparcel is associated with Building 972 and Screening Site 84 (Flammables, Solvents, Waste Oil - Building 972). The building once stored flammable materials, solvents and waste oil as an open shed building. Hazardous materials were repoured/repacked in a portion of the middle bay until the mid-1970s. Building 972 was converted to a closed building and stored and constructed wooden packing materials, which involved 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. Screening site soil samples were taken outside the building in Subparcel 27.1 and will be further evaluated as part of the RI. At the October 1997 meeting, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 4 based on the cleanup of operational spills.</p>	No further remediation is necessary

482 164

TABLE 3-6
SUBPARCEL DESCRIPTIONS

30 1(4)	4,14	1 4	Building 925	<p>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 925, 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. At the September 1997 meeting, the BCT concurred that this subparcel change from ECP Category 7 to Category 4 based on the spill not occurring in the current building and the volatilization of any spilled material over the past nine years.</p>	No further remediation is necessary
30 2(4)	4,13	0 42	Spill Area between Buildings 925 and 949	<p>This subparcel is associated with the former X25 open storage area, a 1988 spill and proposed No Further Action (NFA) Site 53. In the past, petroleum products and 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, methyl ethyl ketone) that mixed with approximately 30,000 gallons of water. The Memphis Fire Department Hazmat Team joined the Depot's Hazmat 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. Samples were collected and results indicated levels of PAHs that exceeded residential criteria and will be further addressed in a site-wide risk assessment. At the February 1999 meeting, the BCT concurred that this subparcel change from ECP Category 7 to Category 4 based on cleanup of the spill and sample results.</p>	No further remediation is necessary
32 2(4)	9,13	3 6	Building 835	<p>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 residue 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. At the September 1997 meeting, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 4 based on cleanup of these spills and air sample results.</p>	No further remediation is necessary

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

Environmental Condition Category 5				
24 1(5)HR	10,3	2	Former material recoupment area at southern end of open storage area X02 and at the southeast corner of Building 873	<p>This subparcel is associated with a former hazardous material recoupment area at the southern end of open gravel storage area X02 and to the east of Building 873, which is Remedial Investigation (RI) Site 27 (Former Recoupment Area - Building 873). This subparcel contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. This subparcel was used in conjunction with Building 873 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. Removal of soil contamination from previous spills and pesticide/herbicide application was completed in 1985. During the sampling effort in 1997, three RI surface soil and five RI soil boring samples were collected. Sample results indicated elevated levels of vanadium and poly aromatic hydrocarbons (PAHs). PAHs will be addressed in the statewide risk evaluation. The 1996 Environmental Baseline Survey determined this subparcel to be a Category 5 and the BCT concurred based on the removal action that occurred, but that further investigation is needed to determine if further action is required.</p> <p>Further remediation may be required upon completion of the Main Installation Remedial Investigation</p>
Environmental Condition Category 6				
7 1(6)	29,13	1 5	Open land area surrounding Building 249	<p>This subparcel is associated with the open land area surrounding Building 249, which is Screening Site (SS) 65 (XXCC-3, Building 249). This subparcel contains railroad tracks and gravel areas that historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, Five surface soil samples and three soil borings associated with SS 65 were collected. Samples indicated levels of PAHs (particularly Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene and Indeno(1,2,3-cd)pyrene) that exceeded BCT screening criteria. At least one detection of each of these PAHs were two orders of magnitude above the risk based concentration. The high levels of PAHs were found on the south side of Building 249 near the railroad tracks. One sample detected levels of DDE and DDT. In September 1997, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 due to PAH levels that may require some type of remedial action. PAHs, DDE and DDT will be further addressed in the upcoming statewide risk evaluation</p> <p>Due to the levels of PAHs, this subparcel is a removal action candidate, particularly the area near the railroad tracks. PAHs, DDE and DDT will be further addressed in the upcoming statewide risk evaluation</p>

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

15.5(6)	23,18	3 3	Open land area west of Buildings 308 and 309	<p>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 Screening Site 36 (DRMO Hazardous Waste Concrete Storage Pad), Screening Site 37 (DRMO Hazardous Waste Gravel Storage Pad), Screening Site 38 (DRMO Damaged/Empty Hazardous Materials Drum Storage Area), and Screening 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. One 1990 Law RI surface soil sample taken just outside this subparcel boundary detected PAHs, dieldrin and metals. During the 1997 Screening Site Sampling Program, thirteen soil boring samples were taken. Sample results indicated PAHs no longer occurring, arsenic at risk ratios above 1 in a million for both industrial and residential scenarios, and levels of 1,1,2,2-tetrachloroethane, DDT and metals. At the September 1997 meeting, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 due to contaminant levels that may require some type of remedial action.</p>	Screening Site 36, which is along the northern fenceline, is a removal action candidate due to elevated levels of arsenic uniformly along the fenceline.
25.2(6)	8,7	12	Building 875 and open land area surrounding Buildings 873 and 875	<p>This subparcel is associated with Building 875, the open land area surrounding Buildings 873 and 875, and Remedial Investigation (RI) Site 27 (Former Recoupment Area/Building S873). This subparcel also contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. A 1,000-gallon heating oil tank was closed in place in July 1994 outside Building 875. One BRAC and two RI surface soil samples and one BRAC soil boring were collected from this subparcel (CH2M Hill, 1997). The RI samples were taken from south of Building 873. The RI sample results indicated levels of poly aromatic hydrocarbons (PAHs) that exceeded the BCT screening criteria. This area of Subparcel 25.2 is an early removal candidate, or could go through a risk assessment due to the moderate level of PAHs. The BRAC sample results indicated chlordane in the surface soils and lead at a depth of zero to 4 feet. The Preliminary Risk Evaluation indicated carcinogenic and non-carcinogenic risk ratios of less than 1 in one million. At the September 1997 meeting, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 due to contaminant levels that may require some type of remedial action.</p>	<p>The portion of this subparcel that is impacted by RI Site 27 is proposed for a removal action. PAHs will be further addressed in the upcoming sitewide risk evaluation.</p>

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

28 2(6)	3,5	6 31	Building 1089 and surrounding open land area	<p>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. Eight SS surface soil samples and four SS soil borings were collected. Surface soil sample results indicated lead, arsenic and chromium levels that exceeded BCT screening criteria. Subsurface soil samples indicated no levels that exceeded BCT screening criteria. Monitoring well 21 (MW-21) is also associated with this subparcel. Groundwater samples taken from MW-21 detected VOCs and metals and will be further addressed during the Main Installation groundwater investigation/risk assessment. At the October 1997 meeting, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 and proceed through the removal action process due to metal levels and the DRC's high priority for reuse of this subparcel. An Engineering Evaluation/Cost Analysis has been prepared to support a non-time critical removal action for this subparcel.</p>	<p>An Engineering Evaluation/Cost Analysis has been prepared to support a non-time critical removal action for this subparcel.</p>
35 1(6)	3,3	0 02	Building 1090	<p>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 proposed early removal action for the surrounding area and that the subparcel change from an ECP Category 7 to a Category 6.</p>	<p>Proposed for interior cleaning during the early removal action proposed for the surrounding area. An Engineering Evaluation/Cost Analysis has been prepared to support a non-time critical removal action for Subparcel 35 5.</p>
35 2(6)	3,5	0 43	Building 1084 and open land area surrounding this building	<p>This subparcel is associated with Proposed Early Removal Site 88, an old concrete grease rack and storage area for POLs at Building 1085 (removed), Proposed Early Removal Site 29, a UST associated with the grease rack (removed 1988); Proposed Early Removal 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. At the February 1999 meeting, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 and proceed through the removal action process due to metal levels and the DRC's high priority for reuse of this subparcel. An Engineering Evaluation/Cost Analysis has been prepared to support a non-time critical removal action for this subparcel.</p>	<p>An Engineering Evaluation/Cost Analysis has been prepared to support a non-time critical removal action at this subparcel.</p>

482 168

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

35.3(6)	3.5	0.22	Building 1086	<p>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 No Further Action 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 proposed early removal actions at the surrounding parcels. At the February 1999 meeting, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 due to metal levels and the DRC's high priority for reuse of this subparcel. An Engineering Evaluation/Cost Analysis has been prepared to support a non-time critical removal action for this subparcel.</p>	<p>An Engineering Evaluation/Cost Analysis has been prepared to support a non-time critical removal action at this subparcel.</p>
35.4(6)	3.3	4.9	Building 1087, former sandblast waste drum storage area and the surrounding open land area	<p>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 were collected and results indicated levels of PAHs, pesticides and metals that exceeded BCT screening criteria. Groundwater samples were collected from MW-22 and detected VOCs, SVOCs and metals that will be addressed in the Main Installation groundwater investigation/risk assessment. At the February 1999 meeting, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 and proceed through the removal action process due to metal levels and the DRC's high priority for reuse of this subparcel. An Engineering Evaluation/Cost Analysis has been prepared to support a non-time critical removal action for this subparcel.</p>	<p>An Engineering Evaluation/Cost Analysis has been prepared to support a non-time critical removal action at this subparcel. The groundwater under this subparcel will be further evaluated.</p>

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

35.5(6)	2,2	4	Buildings 1088 and 1091 and surrounding open land area extending to Perry Road	<p>This subparcel is associated with Buildings 1088 and 1091 as well as the open land area surrounding these buildings but not included in Parcels 35.1 through 35.4. This subparcel is also associated with RI Site 32 (Sandblasting Waste Accumulation Area) which is a gravel area adjacent to Building 1088 where spent sandblast material is funneled through a hopper into 55-gallon drums. Fourteen surface soil samples (five samples were associated with Screening Site 33 that is included in Subparcel 35.4) and three soil borings (one associated with SS 33) were collected in Subparcel 35.5. Sample results associated with RI site 32 indicated levels of chromium, lead, arsenic, and PAHs that exceeded BCT screening criteria. PCBs were detected in Site 33 samples taken during the Law Environmental study in 1991. PCBs were not detected in Site 33 samples taken during the screening site sampling in the winter of 1997. At the October 1997 meeting, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 and proceed through the removal action process due to metal levels and the DRC's high priority for reuse of this subparcel. An Engineering Evaluation/Cost Analysis has been prepared to support a non-time critical removal action for this subparcel.</p>	An Engineering Evaluation/Cost Analysis has been prepared to support a non-time critical removal action at this subparcel.
36.16(6)	29,9	0.08	Dunn Field	<p>This subparcel is associated with a suspected chemical warfare materiel burial location, Site 1 (Mustard and Lewisite Training Sets Burial Site). Nine sets of Chemical Agent Identification Sets were buried at this subparcel 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 transfer the property with a low human health or environmental risk due to the chemical warfare materiel in the future, the Army determined the CWM must be removed. In June via email, the BCT concurred that this subparcel should change from an ECP Category 7 to a Category 6 based on the proposed removal action. An Engineering Evaluation/Cost Analysis has been prepared to support a non-time critical removal action for this subparcel.</p>	An Engineering Evaluation/Cost Analysis has been prepared to support a non-time critical removal action at this subparcel.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

36.29(6)	23,9	7.5	Dunn Field	<p>This subparcel is associated with suspected chemical warfare materiel disposal location, Site 24 (Former Burn Site - 1946). This subparcel is also associated with Proposed No Further Action Sites 23 (Construction Debris and Food Burial Site) and 63 (Fluorspar Storage - Southeastern quadrant). In 1946, railcars carrying captured German bomb casings containing sulfur mustard were enroute to Pine Bluff Arsenal, AR from Mobile, AL. Three cars began leaking mustard, and the train was rerouted to the Memphis Depot. 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 a casing and destroyed by surface soil, subsurface soil and groundwater. In 1998, sampling of surface soil, subsurface soil and groundwater around this site indicated no migration of chemical warfare materiel. In order to transfer the property with a low human health or environmental risk due to the chemical warfare materiel in the future, the Army determined the CWM must be removed. In June via email, the BCT concurred that this subparcel change from an ECP Category 7 to a Category 6 based on the proposed removal action. An Engineering Evaluation/Cost Analysis Action Memorandum has been prepared to support a non-time critical removal action at this subparcel.</p>	An Engineering Evaluation/Cost Analysis has been prepared to support a non-time critical removal action at this subparcel.
Environmental Condition Category 7					
1 8(7)	33,12	15 2	Buildings 143, 146 and 147, north and south parking lots and surrounding open land area	<p>This subparcel is associated with Buildings 143, 146 and 147, the parking lots north and south of Building 144, and the surrounding open land area. Both the north and south Parking Lots in this subparcel are the location of former military family housing units. These housing units were demolished and the potential impacts from these units are unknown. This subparcel contains grassed areas that were historically sprayed with pesticides and herbicides. A 4-gallon motor oil spill was reported on March 22, 1995, for the Gate 1 parking lot. In addition, a diesel spill was reported on October 28, 1993, in the street at Gate 1. The Spill Team responded, took the appropriate action and disposed of all residue in accordance with federal, state and local regulations. Based on BRAC sample results, this subparcel will remain a Category 7 and will be addressed in the upcoming sitewide risk assessment for dielrin.</p>	This subparcel requires additional evaluation.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

3 5(7)	29,4	36 3	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. In 1997, samples were collected and results indicated dieldrin and arsenic levels that exceeded BCT screening criteria. This subparcel will be further investigated. In September 1997, the BCT agreed this subparcel should remain a Category 7.	This subparcel requires additional evaluation
3 6(7)	26,6	3 4	Lake Danielson	Lake Danielson is located in the northwest corner of the Golf Course and receives stormwater runoff from the central portion of DDMT. Several different sampling events have occurred at this subparcel with results indicating metals, pesticides and PAHs in surface soils surrounding the lake, in storm water entering the lake and in lake sediments that exceeded BCT screening criteria. In 1997 and again in 1998, efforts were made to capture edible fish species for tissue sampling. To date, only inedible species have been found. This subparcel will be further investigated. In September 1997, the BCT agreed that this subparcel should remain an ECP Category 7.	This subparcel requires additional evaluation
3 7(7)	26,4	0 30	Lake Danielson Outlet Ditch	Lake Danielson outlet ditch receives stormwater flow from surrounding areas and intermittent flow from the lake. Several different sampling events have occurred at this subparcel with results indicating levels of metals, pesticides and PAHs in surface soils surrounding the ditch, in storm water and in sediments under the current concrete ditch that exceeded BCT screening criteria. This subparcel will be further investigated. In September 1997, the BCT agreed that this subparcel should remain an ECP Category 7.	This subparcel requires additional evaluation
3 8(7)	32,5	0.23	Golf Course Pond	Golf Course Pond receives surface water runoff from the golf course and southeast portion of the installation. Several different sampling events have occurred at this subparcel with results indicating levels of metals and pesticides in surface water and in ditch sediments that exceeded BCT screening criteria. This subparcel will be further investigated. In September 1997, the BCT agreed that this subparcel should remain an ECP Category 7.	This subparcel requires further evaluation

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

3 9(7)	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. Several different sampling events have occurred at this subparcel with results indicating levels of metals, dieldrin and PAHs in surface soils surrounding the ditch, metals in surface water, and metals and pesticides in sediments under the current concrete ditch that exceeded BCT screening criteria. This subparcel will be further investigated. In September 1997, the BCT agreed that this subparcel should remain an ECP Category 7.	This subparcel requires further evaluation. Dieldrin and PAHs will be further evaluated on a site-wide basis.
3 10(7)	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. A sample was collected and results indicated levels of dieldrin and arsenic that exceeded BCT screening criteria. This subparcel will be further investigated. In September 1997, the BCT agreed that this subparcel should remain an ECP Category 7.	This subparcel requires further evaluation.
3 11(7)	30,6	0 77	Former flamethrower test site west of Hole	This area is within the Golf Course and was used to test flame-thrower fuels. Firefighting techniques were also practiced at this site after ignition of the fuel. In 1997, samples were collected and results indicated levels of dieldrin and PAHs that exceeded BCT screening criteria. This subparcel will be further investigated. In September 1997, the BCT agreed that this subparcel should remain an ECP Category 7.	This subparcel requires further evaluation.
4,5(7)	30,8	3 2	Building 261, and area surrounding buildings in Parcel 4	This subparcel is associated with Building 261, an open shed for storing equipment, 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 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 are 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.	This subparcel requires additional evaluation. Dieldrin and PAHs will be evaluated on a site-wide basis. A portion of this area is included in construction of the DRC's entrance boulevard.
4 9(7)	29,8	1 4	Pad 267	Pad 267 is a concrete slab, the site of the former pesticide shop (Building T-267). This building was used for storage/mixing of pesticides/herbicides. Rinse water from pesticide/herbicide spraying operation was reportedly dumped on the ground near the facility.	This subparcel requires additional evaluation.
4,10(7)	31,7	0 26	Building 273 and the former putting green	Building 273 was used for mixing golf course pesticides and herbicides and is associated with RI Site 59. Surface soil samples (SS-37 and SS-50) detected VOCs, PAHs, and pesticides.	This subparcel requires additional evaluation.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

6 1(7)	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 that were historically sprayed with pesticides, herbicides, and waste oil containing PCP and grassed areas that were historically sprayed with herbicides and pesticides. No screening site samples were taken in this subparcel, however, SS 70/71 (facility-wide railroad tracks) soil samples taken from tracks in Parcel 7, adjacent to Parcel 6, were found to contain PAHs at levels that exceeded BCT screening criteria. The grassy area in this subparcel was also treated with pesticides. This subparcel was sampled and found to contain dieldrin at levels that exceeded BCT screening criteria.	This subparcel requires additional evaluation.
8 1(7)	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. This subparcel was sampled and found to contain dieldrin at levels that exceeded BCT screening criteria.	This subparcel requires additional evaluation.
9 1(7)	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 that were historically sprayed with pesticides, herbicides, and waste oil containing PCP and grassed areas that were historically sprayed with herbicides and pesticides. This subparcel was sampled and found to contain dieldrin at levels that exceeded BCT screening criteria.	This subparcel requires additional evaluation.
10 2(7)	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, 550, 649 and 650. 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. This subparcel was sampled and found to contain dieldrin at levels that exceeded BCT screening criteria.	This subparcel requires additional evaluation.
10.3(7)	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 absorbent and sodium bicarbonate, and disposed of all residue in accordance with federal, state and local regulations. The area was sampled, and no contaminants attributable to the spill were found. Arsenic was found at levels that exceeded BCT screening criteria. The grassy area in this subparcel was also treated with pesticides.	This subparcel requires additional evaluation.
11.1(7)	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 that were historically sprayed with pesticides, herbicides, and waste oil containing PCP and grassed areas that were historically sprayed with herbicides and pesticides. This subparcel was sampled. Results indicated dieldrin that slightly exceeded BCT screening criteria.	This subparcel requires additional evaluation.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

12 1(7)	17,15	1.7	Open land area surrounding Building 629	This subparcel is associated with the open land area surrounding Building 629 and with Remedial Investigation Site 57 (Building 629). 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. Building 629 was the hazardous materials warehouse until 1985 when Building 835 was constructed. Nine soil boring samples were taken at this subparcel. Results indicated Poly Aromatic Hydrocarbons (PAHs), DDE and DDT at levels that exceeded BCT screening criteria.	This subparcel requires additional evaluation.
13 5(7)	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 the open land area surrounding Buildings 210 and 211 and Sentry Stations 23 and 25. 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. A 500-gallon diesel aboveground storage tank for the emergency generator at Building 211 is also associated with this subparcel. In September 1997, the BCT agreed that this subparcel should remain an ECP Category 7.	This subparcel requires additional evaluation.
14 2(7) 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 and open land area surrounding Building 209 and Sentry Station 22. Building 209 was demolished in 1997. 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. A 12,000-gallon heating oil tank was removed in July 1994 outside Building 209 and no evidence of leaking was identified. In September 1997, the BCT agreed that this subparcel should remain an ECP Category 7.	This subparcel requires additional evaluation.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

15.6(7)	18,17	43.8	Buildings 301, 304, 305, 306, 307, 309, 416, 417, 701 and 717, and surrounding open land area from C Street to Dunn Road. This subparcel contains open storage areas Y10, Y11, Y50 and Y60. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides, and waste oil containing PCP. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. In 1997, samples were collected and results indicated levels of metals, dieldrin, DDD, DDE, DDT and dioxins/furans in soils that exceeded BCT screening criteria. A 4,000-gallon heating oil tank was removed in July 1994 outside Building 319. A 30-gallon spill of cleaning compound solvent was reported on December 2, 1991, on B Street southwest of Building 309. On March 26, 1991, less than 1 gallon of non-PCB containing dielectric fluid was spilled on the gravel area west of Building 309. The Spill Team responded, cleaned up the spills, removed stained soil and disposed of all residue in accordance with federal, state and local regulations. This subparcel is also associated with the following IRP sites: DRMO East Stormwater Runoff Canal (Site 54) is a canal that collects the stormwater runoff from the DRMO yard and other Depot facilities, DRMO North Stormwater Runoff Canal (Site 55) is a canal that collects the stormwater runoff from the DRMO yard and other Depot facilities, and Waste oil used for dust control at gravel open storage areas (Site 72). In September 1997, the BCT agreed that this subparcel should remain an ECP Category 7.	This subparcel requires additional evaluation.
16 1(7)	21,9	2 8	Open land area surrounding Building 559	This subparcel requires additional evaluation. This subparcel is included in construction of the DRC's entrance boulevard
17 2(7)	22,9	3.7	Open land area surrounding Building 359	This subparcel requires additional evaluation. This subparcel is included in construction of the DRC's entrance boulevard

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

20.5(7)	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 tracks that were historically sprayed with pesticides, herbicides, and waste oil containing PCP. This subparcel also contains grassed areas that were historically sprayed with pesticides and herbicides. A sample was collected and results indicated levels of dieldrin that exceeded BCT screening criteria. In September 1997, the BCT agreed that this subparcel should remain an ECP Category 7.	This subparcel requires additional evaluation
20.6(7)	20.4	0.40	Spill area between western ends of Buildings 489 and 490	A sulfuric acid spill was reported on June 10, 1993, between Buildings 489 and 490. The Spill Team responded, applied sodium bicarbonate and disposed of the residue in accordance with federal, state and local regulations. Samples were collected from the gravel area east of the spill area and results indicated levels of PAHs, arsenic, chromium and lead that exceeded BCT screening criteria. In September 1997, the BCT agreed that this subparcel should remain an ECP Category 7.	This subparcel requires additional evaluation
21.5(7)	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, 685, 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). Samples were collected and results indicated levels of chromium and lead in subsurface soils that exceeded BCT screening criteria. Dieldrin was detected, but was below BCT screening criteria. This subparcel requires further investigation. In September 1997, the BCT agreed that this subparcel should remain an ECP Category 7.	This subparcel requires additional evaluation
22.1(7)	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. In 1997, samples were collected and results indicated levels of antimony and PAHs that exceeded BCT screening criteria. This subparcel requires further investigation. In October 1997, the BCT agreed that this subparcel should remain an ECP Category 7.	This subparcel requires additional evaluation
22.2(7)	17.4	0.58	Spill area east of Building 685 between Buildings 689 and 690	This subparcel is also associated with Screening Site 77 (Unknown Wastes Near Buildings 689 and 690). Battery acid spilled during MHE battery charging procedures in Building 685 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. In 1997, samples were collected and results indicated levels of antimony, arsenic, dieldrin and PAHs in surface soil that exceeded BCT screening criteria. This subparcel requires further investigation. In October 1997, the BCT agreed that this subparcel should remain an ECP Category 7.	This subparcel requires additional evaluation

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

23 11(7)	6,2	3,3	Open land area surrounding Building 995	<p>This subparcel is associated with the open land area surrounding Building 995 south of Building 972. 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. In 1997, a sample was collected from Subparcel 23 9, a spill area within Subparcel 23 11. Results indicated lead in subsurface soils that slightly exceeded (24.3 mg/kg vs. 24 mg/kg) BCT screening criteria. The BCT has made no decision to change the ECP category for this subparcel.</p>	This subparcel requires additional evaluation.
24 2(7)	11,6	12,6	Open storage areas X02 and X03	<p>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 and gravel areas that were historically sprayed with pesticides, herbicides, and waste oil containing PCP. In 1997, samples were collected and results indicated arsenic, PAHs and PCP levels in surface soil and lead in subsurface soils that exceeded BCT screening criteria. In October 1997, the BCT agreed that this subparcel should remain an ECP Category 7.</p>	This subparcel requires additional evaluation.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

24 3(7)	11,7	3 9	Buildings 770 and 771, and open land area surrounding these buildings	<p>Hazardous materials (antifreeze, paint, solvents, Safety Kleen) and petroleum products were stored in Building 770. Building 771 was a restroom facility. Several spills were reported for Building 770 including an oil spill on August 23, 1993 outside of Building 770 (northeast corner), a 50-gallon spill of PCB-containing liquid on July 9, 1990; and a 55-gallon spill of petroleum on November 7, 1991 outside of Building 770 (west side). The Spill Team responded, applied absorbent and removed contaminated materials associated with these spills. Several tanks have been removed at this building, including an 11,155-gallon diesel tank removed in July 1994, an 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 is pumped out quarterly, and a floor drain. During the EBS visual inspection, oil staining was observed on the floor of Building 771.</p> <p>This subparcel is associated with Remedial Investigation (RI) site 34 (Underground Waste Oil Storage Tanks) and proposed No Further Action sites 30 (Paint Spray Booths), 40 (Safety Kleen Units) and 41 (Satellite Drum Accumulation Area). During RI sampling conducted in the winter of 1997, four soil borings and four surface soil samples were collected. Results indicated chromium and PAHs at levels that exceeded BCT screening criteria. Residue was removed from the paint spray booth and consisted of the air filters, therefore, no further action is proposed for the paint spray booth. The Safety-Kleen units were maintained by Safety-Kleen and removed upon closure. There is no evidence of release or disposal from these units; therefore, no further action is proposed at the Safety Kleen units. The satellite drum accumulation areas were also removed upon closure. There is no evidence of release or disposal at the satellite drum accumulation area; therefore, no further action is proposed. Due to the presence of metals and PAHs in soil samples, this subparcel requires additional evaluation as part of the installation restoration program.</p>	This subparcel requires additional evaluation
26 1(7)	6,9	4 7	Open land area surrounding Building 970	<p>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. In 1997, samples were collected and results indicated no levels that exceeded BCT screening criteria. However, in October 1997 the BCT agreed that this subparcel remain an ECP Category 7 until surface soils could be further evaluated. Appropriate.</p>	This subparcel requires additional evaluation

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

27.1(7)		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 railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of chromium, PAHs and chlorinated pesticides in surface soil and chromium and lead in subsurface soils that exceeded BCT screening criteria. In October 1997 the BCT agreed that this subparcel remain an ECP Category 7.	This subparcel requires additional evaluation
29.2(7)		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 contains open storage areas X27 and X30 that historically stored POLs and flammable materials. X30 was also used to store excess wooden pallets. This subparcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. Several hydraulic fluid spills resulting from broken hydraulic lines on forklifts were reported for X27 and X30 including a 1 25-gallon hydraulic fluid spill on September 12, 1995 from A Street to 11th Street out Gate 15 to Dunn Field, a 25-gallon hydraulic fluid spill on May 13, 1994 that began in X30, went across to X27 on 27th Street to Building 972, and a 5-gallon hydraulic fluid spill on April 19, 1994, on G Street from Building 1089 to Gate 15. The Spill Team responded, applied absorbent and disposed of all residue in accordance with federal, state and local regulations. In 1997, samples were collected and results indicated levels of chromium, dieldrin, DDT and methylene chloride in surface soil that exceeded BCT screening criteria. In October 1997 the BCT agreed that this subparcel remain an ECP Category 7.	This subparcel requires additional evaluation
29.3(7)		2,11	0 13	Storm drainage ditch adjacent to Gate 9	This subparcel is associated with Screening Site 56 (Western Storm Drainage Canal). This storm drainage ditch collects rainwater from the western half of the Depot starting at 6th Street and including the open storage areas. In 1997, samples were collected and results indicated levels of metals in surface soil, lead in subsurface soil, PAHs, lead, p,pN-DDD and p,pN-DDE in sediments under the concrete lined ditch that exceeded BCT screening criteria. PAHs were detected in sediments at levels exceeding criteria, but below background values. This subparcel requires further investigation. In September 1997, the BCT agreed that this subparcel remain an ECP Category 7.	This subparcel requires additional evaluation.

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

30.3(7)	4,15	6 0	Open storage area X23 and open land area surrounding Buildings 925 and 949	<p>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. No sampling has occurred at this specific subparcel. However, samples collected from Subparcel 30 2 indicated levels of PAHs that exceeded residential criteria and will be further addressed in a site-wide risk assessment. In September 1997, the BCT agreed this subparcel should remain an ECP Category 7.</p>	This subparcel requires additional evaluation
30 5(7)	4,10	0.55	Former spray paint area south of Building 949	<p>This subparcel is associated with Screening 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. In 1997, samples were collected and results indicated levels of antimony, barium, beryllium, cadmium, chromium, iron, lead and zinc that exceeded BCT screening criteria. In September 1997, the BCT agreed this subparcel should remain an ECP Category 7.</p>	This subparcel requires additional evaluation
31.1(7)	6,13	23.7	Open storage areas X17, X19 and X21	<p>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 gravel areas that were historically sprayed with pesticides, herbicides, and waste oil containing PCP. In 1997, samples were collected and results indicated levels of metals, dieldrin, dibenz(ah)anthracene and PCBs that exceeded BCT screening criteria. In October 1997, the BCT agreed that this subparcel should remain an ECP Category 7.</p>	This subparcel requires additional evaluation
32 3(7)	9,10	2 3	Building 865 and surrounding open land area	<p>This subparcel is associated with Screening Site 28 (Building 865, the Recoup Area Building). Building 865 is a handling area used to transfer hazardous substances/wastes or petroleum products/wastes from damaged or leaking containers into undamaged containers. This subparcel also includes a gravel area that was historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of arsenic and lead that exceeded BCT screening criteria. In October 1997, the BCT agreed this subparcel should remain an ECP Category 7.</p>	This subparcel requires additional evaluation

TABLE 3-6
SUBPARCEL DESCRIPTIONS

33 7(7)	13,8	0 15	Former aboveground storage tank (Building 765) east of Building 770	This subparcel is associated with Screening Site 81 (Fuel Oil Building 765), a 12,000-gallon diesel fuel aboveground storage tank that was removed in 1994. This subparcel also contains a gravel area that was historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of PAHs that exceeded BCT screening criteria. This subparcel requires further investigation. In October 1997, the BCT agreed that this subparcel should remain an ECP Category 7.	This subparcel requires additional evaluation
33 9(7)	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	This subparcel contains open storage areas X05, X06, X07, X08, X09, X10 and X11, and Buildings 737 and 720, and the open land area surrounding Buildings 720, 737, 753, 755, 756, 860 and 863. These areas were used to store a variety of materials including POLs, hazardous materials, and PCB and non-PCB containing transformers for operations use. This subparcel is associated with Screening Site 42 (Former Pentachlorophenol (PCP) Dip Vat Area), Screening Site 43 (Former Underground PCP Tank Area), Screening Site 46 (Pallet Drying Area) and Screening 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 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. 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. On July 26, 1993, leaking 55-gallon drums of ethyl acetate/naphtha aromatic were reported in the X10 area. The Spill Team responded, took the appropriate actions including soil excavation and disposed of all residues in accordance with federal, state and local regulations. In 1997, samples were collected and results indicated levels of lead, chromium, arsenic, PAHs, dieldrin and PCB-1260 that exceeded BCT screening criteria. In February 1999, the BCT agreed that this subparcel should remain an ECP Category 7.	This subparcel requires additional evaluation
36 1(7)	30,9	<0 01	Dunn Field	This subparcel is associated with a seven-pound jug of ammonia hydroxide and a one-gallon bottle of acetic acid that were buried here. This subparcel is associated with IRP Site 2. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36 2(7)	30,9	0 01	Dunn Field	This subparcel is associated with three thousand quarts of unknown chemicals and five cubic feet of orthotolidine dihydrochloride that were buried here. This subparcel is associated with IRP Site 3. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation

TABLE 3-6
SUBPARCEL DESCRIPTIONS

36.3(7)	30,9	0.02	Dunn Field	This subparcel is associated with forty-five 55-gallon drums of discarded oil, grease, paints, and thinner that were buried in these two adjacent trenches. This subparcel is associated with IRP Sites 4 and 4.1. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36.4(7)	30,9	<0.01	Dunn Field	This subparcel is associated with three cubic feet of methyl bromide that were buried here in an unidentified container or containers. This subparcel is associated with IRP Site 5. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36.5(7)	30,8	<0.01	Dunn Field	This subparcel is associated with 1,700 quart bottles of nitric acid that were buried here. This subparcel is associated with IRP Site 7. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36.6(7)	30,8	<0.01	Dunn Field	This subparcel is associated with 3,768 one-gallon cans of methyl bromide that were buried to a depth of 7 feet. This subparcel is associated with IRP Site 8. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36.7(7)	31,9	<0.01	Dunn Field	This subparcel is associated with 1,433 one-ounce bottles of trichloroacetic acid that were buried at a depth of 6 feet. This subparcel is associated with IRP Site 11. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36.8(7)	27,8	0.06	Dunn Field	This subparcel is associated with 30 pallets of discarded acid containers that were buried at these three locations at a depth of 8 feet. This subparcel is associated with IRP Sites 12 and 12.1. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36.9(7)	28,8	0.01	Dunn Field	This subparcel is associated with 32 cubic yards of mixed chemicals and acids and 8,100 pounds of unnamed solids that were buried at a depth of 8 feet. This subparcel is associated with IRP Site 13. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation.
36.10(7)	28,8	<0.01	Dunn Field	These sites contain unknown amounts of unnamed acid. This subparcel is associated with IRP Sites 16 and 16.1. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation.
36.11(7)	28,8	<0.01	Dunn Field	This subparcel is associated with an unknown amount of chemicals and medical supplies that were buried. This subparcel is associated with IRP Site 17. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36.12(7)	23,11	0.92	Dunn Field	This site contains one above-grade covered bauxite pile. The pile was removed in 1998. This subparcel is associated with IRP Site 62. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36.13(7)	27,11	3.3	Dunn Field	This site contains two above-grade covered bauxite piles. The piles were removed in 1998. This subparcel is associated with IRP Site 62. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation

TABLE 3-6
SUBPARCEL DESCRIPTIONS

36.14(7)	31,11	0.33	Dunn Field	This site is a former pistol range (Site 60) and impact area and includes Building 1184 (Site 85). The building was used for temporary pesticide storage. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36.15(7)	29,10	11.7	Dunn Field	This subparcel is associated with the fluvial aquifer groundwater contamination identified at Dunn Field. An interim remedial action addressing the contamination has been implemented with the installation of seven recovery wells along the western fence line of Dunn Field. Groundwater from the fluvial aquifer is pumped out and discharged to the Memphis sanitary sewer for treatment at the publicly owned treatment works. The BCT has approved installation of four additional recovery wells to the system. In addition, this subparcel contains railroad tracks that were historically sprayed with pesticides, herbicides, and waste oil containing PCP. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36.17(7)	30,9	0.07	Dunn Field	This subparcel is associated with ashes and metals from the former burn site (Screening Site 24) that were buried here. This subparcel is associated with IRP Site 9. In 1998, samples were collected, but the BCT has not evaluated the data. The CEHNC ordnance division and the CWM field investigation contractor have determined this area does not contain CWM. Documentation to this effect is forthcoming.	This subparcel requires additional evaluation
36.18(7)	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 IRP Site 86. In 1998, samples were collected, but the BCT has not evaluated the data. The CEHNC ordnance division and the CWM field investigation contractor have determined this area does not contain CWM. Documentation to this effect is forthcoming.	This subparcel requires additional evaluation.
36.19(7)	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 IRP Site 86. In 1998, samples were collected, but the BCT has not evaluated the data. The CEHNC ordnance division and the CWM field investigation contractor have determined this area does not contain CWM. Documentation to this effect is forthcoming.	This subparcel requires additional evaluation
36.20(7)	31,9	0.01	Dunn Field	This subparcel is associated with 40,037 units of eye ornament that were buried here in 1955. This subparcel is associated with IRP Site 6. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36.21(7)	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 IRP Site 10. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36.22(7)	28,8	0.01	Dunn Field	This municipal waste burial site reportedly contains paper, food, and other unnamed materials. This subparcel is associated with IRP Site 14. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation

TABLE 3-6
SUBPARCEL DESCRIPTIONS

36 23(7)	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, acid, chlorinated lime, and medical supplies were buried here in 1970. This subparcel is associated with IRP Sites 15, 15 1 and 15 2. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36 24(7)	28,11	0.08	Dunn Field	This site was used for the disposal of sanitary wastes, construction debris, smoke pots, and tear gas canisters from 1955 to 1960. This subparcel is associated with IRP Site 19. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36 25(7)	30,10	0.34	Dunn Field	Reportedly, asphalt and roofing gravel were dumped in a surface fill at this location until 1981 when the debris was removed. This subparcel is associated with IRP Site 20. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36 26(7)	31,13	0 51	Dunn Field	This site consists of two trenches with unknown depths. It is reported that XXCC-3 impregnate is buried here. This subparcel is associated with IRP Site 21. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36 27(7)	31,12	0.21	Dunn Field	This concrete-lined drainage ditch collects stormwater runoff from surrounding areas. This subparcel is associated with IRP Site 50. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36 28(7)	30,9	0 11	Dunn Field	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 IRP Site 61. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation
36 30(7)	28,12	41 9	Dunn Field, Buildings 1104, 1145, 1146, and 1185	This subparcel is associated with Dunn Field excluding the areas that were previously parcelized. This subparcel contains railroad tracks that were historically sprayed with pesticides, herbicides, and waste oil containing PCP. In 1998, samples were collected, but the BCT has not evaluated the data.	This subparcel requires additional evaluation

Notes:

AST Aboveground storage tank
 BCT BRAC Cleanup Team
 BRAC Base Realignment and Closure
 CAIS Chemical Agent Identification Sets
 DDE 4,4'-Dichlorodiphenyltrichloroethene
 DRC Depot Redevelopment Corporation
 DDT 4,4'-Dichlorodiphenyltrichloroethane
 DRMO Defense Reutilization and Marketing Office
 EBS Environmental Baseline Survey
 NFA No further action
 PAH Poly aromatic hydrocarbon

a) Subparcel label definitions are as follows

PCB Polychlorinated biphenyl
 PCP Pentachlorophenol
 POL Petroleum, oil and lubricant
 ppm parts per million
 PDO Property Disposal Office
 RCRA Resource Conservation and Recovery Act
 RI Remedial investigation
 SVOC Semivolatile organic compounds
 TPH Total petroleum hydrocarbons
 UST Underground storage tank
 VOC Volatile organic compounds

**TABLE 3-6
SUBPARCEL DESCRIPTIONS**

PS PR.	Petroleum storage Petroleum release or disposal	HR HS	Hazardous substance release or disposal Hazardous substance storage
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Qualified subparcel label definitions are as follows

- A Asbestos containing material
- P Polychlorinated biphenyls
- R Radon
- X UXO and/or ordnance fragments
- 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 basically consist of the EPA Region III Risk Based Concentration table and, for some metals, regional background levels

TABLE 3-7
UNCONTAMINATED CATEGORY 1 SUBPARCELS

482 187

SUBPARCEL NUMBER AND CERFA CATEGORY	MAP LOCATION	BUILDING NUMBER
1.1(1)	32,10	1
1.2(1)	32,13	2
1.3(1)	NA	129
1.4(1)	31,13	139
1.5(1)	34,12	144
1.6(1)	32,13	145
1.7(1) demolished	31,10	155
2.1(1)	34,6	176
2.2(1)	34,6	178
2.3(1)	34,5	179
2.4(1)	34,5	181
2.5(1)	34,4	183
2.6(1)	34,4	184
3.1(1)	32,2	193
3.2(1)	31,2	195
3.3(1)	31,2	196
3.4(1)	31,2	198
4.1(1) demolished	30,10	252
4.2(1)	31,7	270
4.3(1)	31,7	271
4.11(1) demolished	29,9	253
6.3(1)	27,12	349
8.2(1)	29,15	229
8.3(1)	29,14	230
8.4(1)	26,15	329
8.5(1)	26,13	330
9.2(1)	23,15	429
9.4(1)	23,12	449
9.5(1)	23,11	450
10.4(1)	20,12	549
10.6(1)	17,11	650

TABLE 3-7
UNCONTAMINATED CATEGORY 1 SUBPARCELS

SUBPARCEL NUMBER AND CERFA CATEGORY	MAP LOCATION	BUILDING NUMBER
11.3(1)	20,14	530
11.4(1)	16,13	630
13.1(1)	33,16	23
13.2(1)	NA	24
13.3(1)	32,16	25
13.4(1)	31,17	210
14.1(1)	27,19	22
15.1(1)	10,18	15
16.2(1) demolished	17,10	559
17.1(1)	relocated to open area near Building 925; 4,16	459
21.1(1)HS	17,3	690
23.1(1)	19,2	7
23.2(1)	13,2	8
23.3(1)	11,4	787
23.4(1)	13,2	795
23.5(1)	5,2	995
29.1(1)	3,10	9
30.4(1)	4,11	949
33.1(1)	13,16	727
33.2(1)	14,10	754
33.3(1)	14,10	755
33.4(1)	14,9	756
33.5(1)	11,10	860
33.10(1)	14,10	753
34.1(1)	24,8	360

TABLE 3-8
QUALIFIED PARCEL DESCRIPTIONS

QUALIFIED SUBPARCEL NUMBER AND LABEL*	LOCATION (X, Y, COORDINATES)	APPROXIMATE SIZE (ACRES) ^b	BUILDING NUMBER	BASIS	EBS SOURCE OF EVIDENCE ^c	REMEDIATION/ 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	35, 2	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	35, 2	No current mitigation
1 3-129Q-A(P)	NA	<0 01	129	ACM possible based on the year of construction	15	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	26, 2	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	22, 2	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	22, 2	No current mitigation
2 1-176Q-A/L	34,6	0 11	176	ACM and LBP present, confirmed by previous sampling and testing	26, 2	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	26, 2	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	26, 2	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	26, 2	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	26, 2	LBP removed/encapsulated No further mitigation

TABLE 3-8
QUALIFIED PARCEL DESCRIPTIONS

QUALIFIED SUBPARCEL NUMBER AND LABEL*	LOCATION (X,Y COORDINATES)	APPROXIMATE SIZE (ACRES)*	BUILDING NUMBER	BASIS	EBS SOURCE OF EVIDENCE*	REMEDIATION/ 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	26, 2	Soil was removed No further mitigation
3 2-S195Q-A/L	31,2	0 10	S195	ACM and LBP present, confirmed by previous sampling and testing	22, 2	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	26, 2	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	26, 2	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	30, 2	No current mitigation
3 5-RANGEQ-X(P)	30,6	0 25	Range	Site formerly used as a pistol range On the environmental condition of property map, this parcel is 3 10	3	Ongoing Remedial Investigation
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	24, 2	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	24, 2	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	24, 2	No current mitigation
4 8-263Q-L(P)	30,9	0 02	263	LBP possible based on the year of construction	24, 2	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	24, 2	No current mitigation
5 1-T272Q-L(P)	29,7	0 03	T272	LBP possible based on the year of construction	27, 2	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	27, 2	No current mitigation

TAB 3-8
QUALIFIED PARCEL DESCRIPTIONS

QUALIFIED SUBPARCEL NUMBER AND LABEL *	LOCATION (X, Y COORDINATES)	APPROXIMATE SIZE (ACRES)	BUILDING NUMBER	BASIS	EBS SOURCE OF EVIDENCE	REMEDIAL 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	29, 2	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	29, 2	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	29, 2	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	28, 2	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	28, 2	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	28, 2	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	29, 2	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	29, 2	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	31, 2	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	31, 2	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	31, 2	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	31, 2	No current mitigation

TABLE 3-8
QUALIFIED PARCEL DESCRIPTIONS

QUALIFIED SUBPARCEL NUMBER AND LABEL*	LOCATION (X,Y COORDINATES)	APPROXIMATE SIZE (ACRES)	BUILDING NUMBER	BASIS	EBS SOURCE OF EVIDENCE*	REMEDIAL 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	32, 2	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	32, 2	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	32, 2	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	32, 2	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	31, 2	No current mitigation
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	31, 2	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	32, 2	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	32, 2	No current mitigation
13 1-230Q-A/L(P)	33,16	<0.01	23	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	35, 2	No current mitigation
13 2-240Q-L(P)	NA	<0.01	24	LBP possible based on the year of construction	35, 2	No current mitigation
13 3-250Q-L(P)	32,16	<0.01	25	LBP possible based on the year of construction	35, 2	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	23, 2	No current mitigation
14 1-220Q-A/L(P)	27,19	<0.01	22	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	35, 2	No current mitigation

TABLE 3-8
QUALIFIED PARCEL DESCRIPTIONS

QUALIFIED SUBPARCEL NUMBER AND LABEL*	LOCATION (X,Y COORDINATES)	APPROXIMATE SIZE (ACRES)	BUILDING NUMBER	BASIS	EBS SOURCE OF EVIDENCE*	REMEDIAL/ 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	35, 2	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	28, 2	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	30, 2	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	15	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	28, 2	No current mitigation
15 6-T416Q-A/L(P)	24,16	0.06	T416	ACM present; confirmed by previous sampling and testing LBP possible based on the year of construction	27, 2	No current mitigation
15 6-T417Q-A/L(P)	23,16	0.07	T417	ACM present; confirmed by previous sampling and testing LBP possible based on the year of construction	27, 2	No current mitigation
19 1-S468Q-L(P)	21,8	0.22	S468	LBP possible based on the year of construction	30, 2	No current mitigation
19 2-S465Q-A	22,7	0.01	S465	ACM present; confirmed by previous sampling and testing	30	No current mitigation
19 3-S469Q-L(P)	22,8	0.22	S469	LBP possible based on the year of construction	30, 2	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	33, 2	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	30, 2	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	30, 2	No current mitigation

TABLE 3-8
QUALIFIED PARCEL DESCRIPTIONS

QUALIFIED SUBPARCEL NUMBER AND LABEL*	LOCATION (X,Y COORDINATES)	APPROXIMATE SIZE (ACRES)*	BUILDING NUMBER	BASIS	EBS SOURCE OF EVIDENCE*	REMEDIAL 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	33, 2	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	30, 2	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	33, 2	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	33, 2	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	35, 2	No current mitigation
23 4-795Q-L(P)	NA	0 01	795	LBP possible based on the year of construction	27, 2	No current mitigation
23 7-783Q-A/L(P)	11,5	0 05	783	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	34, 2	No current mitigation
23 8-793Q-L(P)	11,3	0 04	793	LBP possible based on the year of construction	34, 2	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	34, 2	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	34, 2	No current mitigation
25 1-S873Q-A/L(P)	9,4	6 3	S873	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	15	No current mitigation
25 2-T875Q-A/L(P)	8,7	6 3	T875	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	36, 2	No current mitigation

TABLE 3-8
QUALIFIED PARCEL DESCRIPTIONS

QUALIFIED SUBPARCEL NUMBER AND LABEL *	LOCATION (X, Y COORDINATES)	APPROXIMATE SIZE (ACRES)	BUILDING NUMBER	BASIS	EBS SOURCE OF EVIDENCE	REMEDIATION/ 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	36, 2	No current mitigation
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	36, 2	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	15	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	35, 2	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	36, 2	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	27, 2	No current mitigation
33 4-756Q-A	14,9	0.06	756	ACM present, confirmed by previous sampling and testing	27	No current mitigation
33 5-T860Q-A/L(P)	11,10	0.02	T860	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	36, 2	No current mitigation
33 8-S863Q-A/L(P)	10,10	0.03	S863	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	36, 2	No current mitigation
33 9-717Q-A/L(P) This building is actually located 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	33, 2	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	33, 2	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	34, 2	No current mitigation

TABLE 3-8
QUALIFIED PARCEL DESCRIPTIONS

QUALIFIED SUBPARCEL NUMBER AND LABEL*	LOCATION (X,Y COORDINATES)	APPROXIMATE SIZE (ACRES)*	BUILDING NUMBER	BASIS	EBS SOURCE OF EVIDENCE*	REMEDIACTION/ 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	34, 2	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	35, 2	No current mitigation
35 2-T1084Q-A/L(P)	4,5	0.03	T1084	ACM present, confirmed by previous sampling and testing LBP possible based on the year of construction	35, 2	No current mitigation
35 3-1086Q-L(P)	3,5	0.22	1086	LBP possible based on the year of construction	35, 2	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	35, 2	No current mitigation
35 4-1088Q-L(P)	3,3	0.05	1088	LBP possible based on the year of construction	35, 2	No current mitigation
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	35, 2	No current mitigation
36 14-1184Q-L(P)	31,12	0.01	1184	LBP possible based on the year of construction	35, 2	No current mitigation
36 29-OBQ-X(P)	23,9	7.50	Former Ordnance Burn Area	UXO possible based on former use as an ordnance burn area	1, 6	Scheduled for removal

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

P = polychlorinated biphenyls

R = radon

X = UXO and/or ordnance fragments

(P) = possible (unverified)

- b) Acreage figures are approximate, they have been calculated using AutoCad Release 12

- c) EBS Source of Evidence numbers refer to documents listed in Table 2-1 of this report

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 Memphis Depot Caretaker Division Environmental Office. 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 2004 with the exception of groundwater remediation, which is anticipated to continue until 2007.

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 Installation Restoration Sites, Operable Units (OUs), BRAC

SECTION FOUR**INSTALLATION-WIDE STRATEGY FOR
ENVIRONMENTAL RESTORATION**

parcels and Functional Units (FUs). The following subsections reflect the relationship among IR sites, OUs, BRAC parcels and FUs. The priorities and sequence for cleanup were determined by the BCT 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 Installation Restoration (IR) 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 (USAEHA 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 IR site numbers and are now being evaluated through the CERCLA site assessment/preliminary investigation process. Some of these sites will continue through the CERCLA remedial investigation/feasibility study process.

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, 187 in all, and represent buildings, spill locations, burial locations, former pistol ranges, open land areas and IR 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 category decision making, leasing and, ultimately, transfer. The relationship among the OUs and BRAC parcels is shown in Table 4-1.

Rather than assess each parcel individually to evaluate risk to human health and the environment, the BRAC parcels and IR sites were grouped into Functional Units. Each FU 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 for investigating each BRAC parcel or subparcel is presented in Table 4-1. The sequence is based primarily on the DRC's order of preference. This shall be updated as the DRC attracts business and organizations to locate at the Depot. Table 4-2 lists primary deliverables and projected deliverable dates for the environmental restoration investigation.

4.1.3 Early Actions Strategy

The Depot is implementing the "Record of Decision for Interim Remedial Action for Groundwater at Dunn Field (OU-1)" 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 and of PCB impacted soil from the open land area surrounding Building 274 (RI Site 48). The Depot prepared engineering evaluations/cost analyses and conducted public comment periods for the following proposed removal actions: 1) soil removal and interior cleaning of buildings at the old paint shop and maintenance area in Subparcels 35 and 28, and 2) removal of suspected chemical warfare material from Dunn Field. The Depot has prepared Action Memorandums and anticipates both removal actions to be completed in fiscal year 2000. 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 each IR site or BRAC subparcel, if required, at the Depot will be selected in accordance with the NCP. The BCT has and will continue to evaluate each IR site or subparcel to determine the appropriate remedy. Areas where contamination is suspected to be limited in extent will likely be addressed by ER actions (presumptive remedy) where such activities have been identified as providing significant environmental and economic benefits. If contamination extends beyond the limits within which remediation can feasibly be completed using available ER technologies, ER will not be implemented and the approach outlined in the NCP will be taken.

As outlined in the NCP, the following items will be required for these sites:

- A work plan will be prepared and implemented to evaluate the extent of the contamination.

SECTION FOUR**INSTALLATION-WIDE STRATEGY FOR
ENVIRONMENTAL RESTORATION**

- A risk assessment will be completed to evaluate the potential risk to human health and the environment. Future land use will be considered during the assessment (it is anticipated that industrial use would apply to all BRAC parcels except those formerly used for residential or recreational purposes). The assessment results have and will be compared to EPA Region III Risk Based Concentrations, background concentrations and achievable analytical reporting limits.
- Options to cleanup the area of contamination will be evaluated. Selected technologies for application of expedited solutions will be reviewed, presumptive remedies will be reviewed, and a focused feasibility study will be prepared.
- The design for the selected remedial option will be prepared and implemented in a ROD, and applicable or relevant and appropriate requirements will be identified.

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.

4.2.1 Storage Tanks

The following strategies have been developed to manage the storage tanks at the Depot until realignment is complete and the Depot property is transferred. Historically, there have been 37 storage tanks in use at the Depot

Underground Storage Tanks

Historically, there have been 28 USTs in use at the Depot. Since the 1980s, the Depot has 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 have either become IR sites or BRAC subparcels and will be sampled accordingly. If contamination is present at these areas, the remedy selection approach described in Section 4.1.4 will be implemented.

SECTION FOUR**INSTALLATION-WIDE STRATEGY FOR
ENVIRONMENTAL RESTORATION**

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 at the Depot.

Aboveground Storage Tanks

Historically, there have been nine ASTs in use at the Depot. Since the 1980s, the Depot has implemented a program to remove or close in place tanks that were leaking or not in use. As of September 1999, there are five ASTs at the Depot. The DRC has taken possession of three ASTs and will be responsible for any future actions. Two ASTs remain active at the Depot. They provide emergency power for the fire suppression system and the computer network system. These two ASTs will not be removed unless specifically directed by the DRC.

4.2.2 Hazardous Materials/Waste Management

Hazardous materials/waste management compliance programs at the Depot will continue to be conducted throughout the closure and property transfer process in accordance with applicable state and federal regulations

4.2.3 Solid Waste Management

Municipal solid wastes generated at the Depot will continue to be collected and disposed of off-site at the North Shelby Sanitary Landfill or South Shelby Sanitary Landfill (both operated by Browning-Ferris Industries) by a licensed solid waste vendor.

4.2.4 Polychlorinated Biphenyls

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 E. 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.

SECTION FOUR**INSTALLATION-WIDE STRATEGY FOR
ENVIRONMENTAL RESTORATION**

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 BCT agreed that no further evidence of the spill remained.

4.2.5 Asbestos

Asbestos-containing material will continue to be 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 will be managed in place. All friable asbestos that poses a risk to human health will be removed or encapsulated. Asbestos inspections will be conducted as needed.

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 E.

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.

4.2.8 NPDES Permits

The Depot has an NPDES permit for the discharge of stormwater runoff. The Depot will continue to conduct the activities required in its NPDES permit.

SECTION FOUR**INSTALLATION-WIDE STRATEGY FOR
ENVIRONMENTAL RESTORATION****4.2.9 Oil/Water Separators**

There are two oil/water separators remaining at the Depot that will be left in place. 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 used as pistol ranges. Before construction of the golf course, a pistol range was 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 plans to sample and, if required, remediate these areas.

4.2.11 Pesticides

The Depot plans to implement a site-wide program to collect samples to evaluate the lateral extent of pesticide contamination and the types and concentrations of pesticides. 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 is 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."

The Depot plans to abate LBP in areas requiring such activities.

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.

SECTION FOUR**INSTALLATION-WIDE STRATEGY FOR
ENVIRONMENTAL RESTORATION****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, 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 (TNSHPO) 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, TNSHPO 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.

SECTION FOUR**INSTALLATION-WIDE STRATEGY FOR
ENVIRONMENTAL RESTORATION****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.

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, Depot employees; and federal, state and local officials informed in a timely manner of major findings of the remedial actions to be conducted at the Depot.

SECTION FOUR**INSTALLATION-WIDE STRATEGY FOR
ENVIRONMENTAL RESTORATION**

- Provide local residents; on-post employees; and federal, state and local officials with an opportunity to review and comment on the studies to be 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.
- 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, environmental hotline, public meetings, public comment periods and the newsletter support this strategy.

**TABLE 4-2
ENVIRONMENTAL DOCUMENT STATUS**

482 207

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
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	CELMM/Barge, Waggoner, Sumner & Cannon	December 1995	April 1996
Asbestos Survey	CELMM/Pickering Inc.		January 1994
PCB Survey	DDMT-W		1993
Radon Survey	ASCE-WP		March 8, 1996
UST Survey	CELMM/Pickering Inc.		November 1993
Community Relations Plan	DDSP-F/Frontline	September 1998	June 1999
RI/FS Work Plans	CEHNC/CH2M Hill	1995	1995
RI Reports	CEHNC/CH2M Hill	Q1 FY00	Q2 FY00
FS Reports	CEHNC/CH2M Hill	Q2 FY00	Q3 FY00
Proposed Remedial Action Plans	CEHNC/CH2M Hill	Q3 FY00	Q1 FY01
Record of Decision (Groundwater IRA)	CEHNC/CH2M Hill		April 1996
Records of Decision	CEHNC/CH2M Hill		Q1 FY01
Remedial Designs	CEHNC/CH2M Hill		Q4 FY01
Remedial Action Work Plans	CESAM		Q1 FY02
Final Remediation Reports	DLA		5 months following completion of RA

**TABLE 4-2
ENVIRONMENTAL DOCUMENT STATUS**

ACTIVITY	AGENCY	DRAFT REPORT	FINAL REPORT
Five Year Review Reports	DLA	TBD	TBD
Site Closeout Report, including Notice of Intent to Delete	DLA	TBD	TBD

Notes:

ASCE-WP: Admin Support Center East - Environmental Branch
 BRAC: Base Realignment and Closure
 CELMM: 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
 TBD: To be determined
 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 are summarized in Table 5-1. This table will be updated as the BCT makes decisions regarding IR 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 Table 5-1 were based on schedules established in August 1999 for the Depot's environmental restoration program by CEHNC, CESAM, EPA, TDEC, the Depot and the appropriate contractors. 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. These schedules will be reviewed regularly by the BCT and project team to ensure that they are current, that activities are expedited whenever possible and that reuse goals continue to be met.

The response schedules on Table 5-1 include time frames for BCP updates; remedial investigation, design and action at the Main Installation; groundwater design and action at the Main Installation; chemical warfare materiel removal action at Dunn Field, remedial investigation, design and action at Dunn Field; and groundwater design and action at 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 specific IRP site and that is maintained by CEHNC 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 meetings and the schedule for the meetings concerning issues related to BRAC closure and the environmental restoration program at the Depot are as follows: the BCT and the project team meet the third Thursday of every month. The RAB meets the third Thursday of every month, except when the RAB decides otherwise. Additional BCT and project team meetings are scheduled as necessary to facilitate the decision-making process.

TABLE 5-1
PROJECTED RESTORATION SCHEDULE

482 211

Project	Start	Finish
BRAC Cleanup Plan Updates	Update as needed	Official Update due annually in October
Main Installation Soil Sites^a <ul style="list-style-type: none"> • Remedial Investigation • Remedial Designs • Remedial Action 	Underway Q4 FY00 Q2 FY01	Q2 FY00 Q2 FY01 Q4 FY01
Dunn Field Soil Sites^b <ul style="list-style-type: none"> • Remedial Investigation • Remedial Design • Remedial Action 	Underway Q4 FY00 Q4 FY01	Q2 FY00 Q4 FY01 Q2 FY02
Main Installation Groundwater Sites^c <ul style="list-style-type: none"> • Remedial Investigation • Remedial Design • Remedial Action • Long Term Operations/Maintenance 	Underway Q4 FY00 Q4 FY01 Q4 FY02	Q2 FY00 Q4 FY01 Q4 FY02 Q4 FY07
Dunn Field Groundwater Sites^c <ul style="list-style-type: none"> • Remedial Investigation • Remedial Design • Remedial Action • Long Term Operations/Maintenance 	Underway Q4 FY00 Q4 FY01 Q4 FY02	Q2 FY00 Q4 FY01 Q4 FY02 Q4 FY07
Dunn Field Chemical Warfare Materiel Sites^d <ul style="list-style-type: none"> • Early Removal Design/Safety Submissions • Early Removal Action 	Underway Q2 FY00	Q2 FY00 Q4 FY00
Proposed No Further Action Sites^e	Documentation Underway	Q2 FY00

Notes:

- a) Main Installation soil sites include sites 25, 26, 28, 31, 32, 33, 35, 36, 37, 38, 39, 42, 43, 46, 48, 51, 52, 54, 55, 56, 57, 58, 59, 65, 66, 68, 70, 71, 72, 73, 75, 77, 78, 79, 80, 82, 83, 84, 87, 88 and 89.
- b) Dunn Field soil sites include sites 2, 3, 5, 6, 7, 8, 10, 12, 13, 15, 16, 18, 19, 20, 21, 22, 23, 60, 61, 62, 63, 64, 85, 86, 90, 91, 92 and 93
- c) Main Installation and Dunn Field groundwater sites include site 4, 11, 14, 17, 27, 29 and 34
- d) Dunn field Chemical Warfare Materiel sites include sites 1, 9 and 24.
- e) Proposed No Further Action sites include sites 30, 40, 41, 44, 45, 47, 49, 53, 69, 74, 76, and 81. Please note that sites 35, 43, 63 and 68 may also join the No Further Action site listing after obtaining evidence or documentation from sampling during the current Remedial Investigation

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 are yet to be resolved. These issues include functional unit concept, polycyclic aromatic hydrocarbons as a base-wide issue, groundwater containment system, community involvement, 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. Furthermore, sampling for Remedial Investigation, Screening and BRAC sites performed since 1996 was designed for use in the Remedial Investigation. 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 has been loaded into a specified electronic data management system such as the Installation Restoration Program Information Management System (IRPIMS), Installation Restoration Data Management Information System (IRDMIS), or other equivalent data management system
- Require that all contractors submit data and reports in an electronic format that can be readily used by the Depot.

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

SECTION SIX TECHNICAL AND OTHER ISSUES TO BE RESOLVED

available to the BCT members as of September 1999 and is scheduled to be publicly accessible through the Defense Distribution Center's (DDC) Memphis web site before the end of the calendar year.

- Establish an Internet web site that makes available all administrative record documents as well as current affairs and other information regarding the installation restoration program at the Memphis Depot. The DDC's Memphis web site was established in August 1999. This page was sparsely populated as of September 1999, but is scheduled to be fully populated by the end of the calendar year. The web site will be updated on a regular basis to make available the latest documentation and information.
- 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. While a contractor has been retained and has digitized the administrative record, this effort will have to 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:

- Accessibility to data and documentation via the DDC's Memphis web site is critical to promote ease of use for the various team members. The web site was established in August 1999 and continues to be populated.
- All historical data generated at the Depot are available in the installation administrative record managed by the Depot's Environmental Division, in the Depot's information repositories and will be available on the DDC's Memphis web site.

SECTION SIX**TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

- All new sampling and analysis data generated during the Depot's environmental restoration program will be entered in a specific data management system, such as 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 Depot's Community Outreach Room. The Depot also maintains three other information repositories that contain a copy of all the reports in the administrative record. The administrative record will also be available through the web site
- U S Army Corps of Engineers will ensure that data and reports from ongoing efforts are submitted electronically to the Depot and AMC and are loaded into a system such as DENIX that can be readily accessed by the Depot, DLA, AMC, and other authorized interested parties
- Information repositories have been established, including two at public libraries, to provide the community access to information. The web site will also provide access to the information repository documents.
- Various public outreach programs have been established to disseminate information to the community. These include the formation of 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 BCT action items should be addressed at the Depot to identify and fill data gaps and continue the environmental restoration process:

- A majority of the areas of concern at the Depot are undergoing a risk assessment in the Main Installation Remedial Investigation. These areas of concern include, but are not limited to, the following: base-wide dieldrin and PAH issues; defining appropriate exposure units within the Main Installation; and further evaluating groundwater issues such as Dunn Field, the southwest corner of the Main Installation and the anomaly in the northwest corner of the Main Installation.

SECTION SIX **TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

6.3.2 Rationale

Effective analysis of data gaps will facilitate the completion of RI efforts so that appropriate remedial (restoration) actions can be identified and evaluated. This information will also facilitate the identification of clean areas at the Depot.

6.3.3 Status/Strategy

Base-wide contaminants such as dieldrin and PAHs are being addressed in a baseline risk assessment as part of the Main Installation Remedial Investigation.

The BCT has implemented an approach for the baseline risk assessment on the Main Installation Remedial Investigation that groups the area into seven Functional Units. These seven Functional Units are a shift in the BCT's approach from the three Operable Units within the Main Installation as described in the Site Management Plan, an attachment to the Federal Facilities Agreement. Instead of partitioning the facility on a purely geographical basis (OU-4/north portion, OU-3/southeast portion, OU-2/southwest portion), the Functional Units are grouped by either similar types of contamination, similar types of past use or similar types of proposed reuse. This approach allowed the Main Installation baseline risk assessment to define the most appropriate exposure units for the risk assessment. These seven Functional Units are shown on Figure 1-2a.

Data gathered from the existing system of groundwater monitoring wells indicate that the presence of an anomaly in the aquifer system under the northwest corner of the Main Installation extends off the Depot onto neighboring property southwest of Dunn Field. This anomaly appears to greatly affect the local hydrogeology. Due to this data gap and anomaly, a monitoring well was installed on the neighboring property in July 1999. A 65-foot thick clay layer that began at 80 feet below ground surface was encountered during the drilling of this well. There was almost no water, or saturated thickness, on the top of this clay layer. Drilling was continued, and the well was finished into a lower aquifer. The water quality data from this lower aquifer is under evaluation. Additionally, a boring was drilled in another location on the neighboring property that encountered the clay layer at 70 feet below ground surface. No saturated zone was identified on the top of the clay layer, and the boring was properly closed. The information from this well and additional boring is under evaluation by the BCT.

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.

SECTION SIX **TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

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 has completed sampling for the Main Installation and Dunn Field Remedial Investigations to provide appropriate data for the BCT to address base-wide dieldrin and PAH issues as well as at Remedial Investigation and Screening sites as recommended by the Preliminary Risk Evaluation (April 1998). The BCT will begin evaluating the data upon receipt of the Remedial Investigation reports. Additionally, a Streamlined Risk Assessment for Parcel 3 (January 1999) was produced to evaluate dieldrin present on the golf course.

6.5.1 BCT Action Items

Subsequent to the 1996-1997 Remedial Investigation, Screening and BRAC sampling efforts, the BCT determined that Main Installation surface soils were impacted by polycyclic aromatic hydrocarbons (PAHs) at paved areas and rail tracks and dieldrin, a pesticide, at grassy areas. The BCT assumed that PAH impacts were due to the presence of these compounds in asphalt, railroad cross ties and vehicle exhaust unless it could be demonstrated that a particular release resulted in the contamination. The BCT assumed that the dieldrin impacts were due to routine spraying of this pesticide in housing, recreation and perishable storage areas prior to the end of dieldrin use on the facility in the late 1970s. PAH and dieldrin impacts are not considered to be discreet disposal sites but are ubiquitous for areas where the compounds were detected - dieldrin on the eastern two-thirds of the Main Installation and PAHs at rails or road surfaces. Due to these impacts, the BCT directed the U.S. Army Corps of Engineers to include these issues into the Remedial Investigation risk assessment.

PAHs will be addressed as a release if there is sufficient evidence that the presence of the PAHs resulted from a specific source that is not related to asphalt, railroad cross ties or vehicle exhaust. An example of this would be a spill of a PAH-containing material. The presence of PAHs from vehicle exhaust is not considered a release by CERCLA, and the Depot has no authority to address issues that are not releases as defined by CERCLA. Note that the presence of PAHs, whether from a CERCLA release or not, will be addressed if there are other contaminants at the same location from a release that requires a CERCLA response.

6.5.2 Rationale

Completion of risk assessments will enable the BCT to make restoration decisions based on the risk associated with the potential reuse. By using risk assessments in their decision making, the BCT will accelerate property restoration and reuse.

SECTION SIX **TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

6.5.3 Status/Strategy

A risk assessment specifically for dieldrin impacted soils at the recreational portion of the Main Installation has been developed. The BCT made a risk management decision that the golf course as well as the rest of Parcel 3 could be leased and reused as a recreational area. This enabled the Depot to finalize the Finding of Suitability to Lease #8, which included the golf course.

The risk management decisions made for the rest of the Main Installation will be based upon the results of the risk assessment in the Main Installation Remedial Investigation.

6.6 BASE-WIDE REMEDIAL ACTION STRATEGY

This section discusses issues pertaining to the base-wide remedial action strategy for the Depot. A base-wide remedial action strategy has been developed to guide the ongoing environmental restoration efforts at the Depot. For most areas identified as having a potential for contamination from historical practices (CERFA Category 7), the Depot collected samples to confirm the absence or presence of contamination. The BCT has reviewed this data. The BCT will continue to review data as additional samples are taken as required by BCT and the analyses become available. If contamination is found at a site, a strategy to address the extent of the contamination will be developed and implemented. This strategy will be titled the Proposed Plan and will result in a Record of Decision. At this time, there are no unresolved issues pertaining to the base-wide remedial action strategy.

6.7 GROUNDWATER INTERIM REMEDIAL ACTION AND LONG TERM GROUNDWATER MONITORING

At this time, the Depot has completed construction of phase one 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 nearly a year 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 has been detected to the south of Recovery Well 3. The BCT has approved the second phase of the interim system, which includes installation of four smaller capacity wells to the south of Recovery Well 3 in order to contain the additional contamination. In addition, the Main Installation Remedial Investigation will evaluate the extent of VOCs within the groundwater at the Main Installation.

The data collected from this system is being used for the Dunn Field risk assessment that will be included in the Dunn Field Remedial Investigation. The data will also be used in any additional groundwater modeling.

SECTION SIX **TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

Surface water samples will continue to be collected according to the requirements specified in the NPDES permit. The Depot will assess the need for the NPDES permit and determine if the permit may be terminated.

6.8 EXCAVATION OF CONTAMINATED MATERIALS

Environmental restoration activities are presently in the investigative and early removal phase. As of October 1999, there are plans to excavate impacted surface soil at the following specific areas of concern: Parcel 35 and 28 (paint shop and maintenance area) and the chemical warfare materiel sites on Dunn Field. The Parcel 35 and 28 removal action is scheduled to begin during the winter of 1999/2000 while the chemical warfare materiel removal is planned for the spring of 2000. Both of these actions are the recommended alternatives in Engineering Evaluations/Cost Analyses that were generated in 1999 for the respective actions. The public comment period for each removal was completed in 1999, and the Action Memorandum for the Parcel 35 and 28 removal is signed. The Action Memorandum for the chemical warfare materiel action is under development. At this time, there are no unresolved issues pertaining to the excavation of contaminated materials.

6.9 PROTOCOLS FOR REMEDIAL DESIGN REVIEWS

Environmental restoration activities are presently in the investigative phase. Protocols for the review of design documents will follow the requirements specified in the Federal Facility Agreement. In addition, CEHNC will review design documents according to their established internal review procedures for design reports prepared either internally or by contractors. The BCT will be included in the review process. The final design documents will be made available to the community in the information repositories. As of October 1999, there are no unresolved issues pertaining to the protocols for remedial design review.

6.10 CONCEPTUAL MODELS

To assist in focusing decision making, conceptual site models are theorized, calculated, written and drawn up. The conceptual model for the Depot can be viewed as a compilation of several data reports and survey. Appendix E presents working conceptual models for environmental restoration for the facility. This appendix includes a lead-based paint survey, asbestos identification survey, administrative record index (which includes all CERCLA restoration documents), radiological survey and permit closure approval from the Nuclear Regulatory Commission, hazardous waste container storage permit closure from TDEC, transformer survey, and radon survey. As of October 1999, there are no unresolved issues pertaining to conceptual models.

SECTION SIX **TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

6.11 CLEANUP STANDARDS

Risk-based cleanup goals will be developed and implemented, with BCT approval, during the remedial investigation/feasibility study process. The National Contingency Plan (40 Code of Federal Regulations 300) establishes a risk range of 1×10^{-6} to 1×10^{-4} , or from one in a million to one in ten thousand, excess chance of developing cancer as the range where risk management decisions are allowed. For a risk that exceeds 1×10^{-4} , remediation is required to reduce the cumulative risk to an acceptable level. A risk that does not exceed 1×10^{-6} 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. All risk values will be accumulated based upon all detected contamination present at a site. A review by the BCT of the risk posed at each Functional Unit will follow issuance of the Remedial Investigation report. This review will form the basis for a proposed plan and ensuing Record of Decision. As of October 1999, there are no unresolved issues pertaining to cleanup standards.

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 the Depot, EPA and TDEC.
- **Defined Document Review Periods.** Document review periods have been established on an accelerated basis that will assist in the overall investigation and scheduling process.
- **Functional Unit Groupings.** The installation restoration program sites and BRAC subparcels on the Main Installation were grouped into Functional Units to aid in the risk assessment process.
- **Concurrent Environmental Restoration/CERCLA Phases.** To expedite restoration, concurrent investigations, feasibility studies and designs are being conducted. The feasibility studies for the Main Installation and Dunn Field will begin prior to finalization of the Remedial Investigation reports. Also, the draft Record of Decision will be written before the end of the public comment period for the proposed plan. The selected cleanup alternatives will be addressed if the public comments warrant revising the alternative selection. Essentially, the BCT will

SECTION SIX TECHNICAL AND OTHER ISSUES TO BE RESOLVED

always initiate the next step in the process while finalizing the previous document or step.

- **Concurrent Reviews.** To minimize review delays, the BCT will review documents concurrently. For example, the BCT will begin the 60-day review of the draft Main Installation. Thirty days into the draft Main Installation Remedial Investigation review period, the BCT will receive the draft Dunn Field Remedial Investigation and begin its 60-day review.
- **Community Involvement.** The Depot formed the RAB to involve the community in the restoration program. The RAB meets on a monthly basis to discuss the status of the environmental restoration program at the Depot.
- **Risk-based Cleanup.** The BCT agreed to use the EPA Region III RBCs or background concentrations for screening goals. However, risk-based cleanup goals will be developed during the Feasibility Study as the risk assessment is evaluated at each Functional Unit. The regulators agreed that negotiations for revised cleanup goals according to future land use would be pursued at that time.
- **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 1998 and 1999. Several discretely impacted areas were identified on the Main Installation mainly in surface soils that were immobile in nature and were identified as a priority for reuse. The BCT/project team approved, designed and conducted two removal actions in 1998, dieldrin-impacted soil at the military family housing units and PCB-impacted soil at Building 274. The BCT also began the removal action process for certain soil areas and buildings in Parcels 35 and 28 and for chemical warfare materiel at Dunn Field. Both removal actions are scheduled to be complete by the summer of 2000.

As the Depot environmental restoration program moves from the investigation to the design phase, other initiatives will be implemented to potentially expedite the cleanup process. These initiatives could include the following:

- **Innovative Technologies.** Collaborative projects using innovative technologies being researched by the DOD, EPA or state or suggested by any of the contractors will be pursued.

SECTION SIX TECHNICAL AND OTHER ISSUES TO BE RESOLVED

- **Identify Applicable or Relevant and Appropriate Requirements.** The regulatory members of the BCT will provide their knowledge and experience in identifying all applicable or relevant and appropriate requirements for all proposed actions.

6.12.1 BCT Action Items

The BCT must continue the process of completing the Remedial Investigations and develop the Records of Decision through 1999 and 2000.

6.12.2 Rationale

By utilizing initiatives for accelerating cleanup, the BCT will accomplish restoration and property transfer in an effective and timely manner

6.12.3 Status/Strategy

Continue utilizing initiatives for accelerating cleanup in the Depot's environmental restoration program.

6.13 REMEDIAL ACTIONS

Most environmental restoration activities are presently in the investigative phase and, in particular, the risk assessment phase. As of October 1999, no final remedial actions have been initiated. The Interim Remedial Action for Groundwater at Dunn Field was constructed and began operating in late 1998. Additional groundwater contamination has been detected to the south of the southern most recovery well. Due to this, the BCT is installing four additional recovery wells to capture this southern edge of the plume. These additional wells are considered a second phase to the Interim Remedial Action.

Two removal actions are proposed for the winter and spring of 2000. These are for buildings and soil within Parcels 35 and 28 and the chemical warfare materiel sites on Dunn Field. Both actions have proceeded through the Engineering Evaluation/Cost Analysis and public comment phases. The Action Memorandum for the removal at Parcels 35 and 28 has been finalized and signed, and the Action Memorandum for the chemical warfare materiel removal is in process. Therefore, there are no unresolved issues pertaining to remedial actions. If unresolved issues are identified at a later date, a strategy will be developed and implemented.

6.14 REVIEW OF SELECTED TECHNOLOGIES FOR APPLICATION OF EXPEDITED SOLUTIONS

Environmental restoration activities are presently in the investigative phase. As of October 1999, no remedial technologies have been selected at the Depot. A bioremediation study for dieldrin

SECTION SIX **TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

impacted soil at the golf course, softball field and park area on the Main Installation has been completed. The results of this study indicate that bioremediation of dieldrin contaminated soils is a potentially feasible alternative. The implementation of this alternative would be likely accomplished through the routine landscaping/groundskeeping process since the technology is very similar to routine fertilization. The need for this cleanup technology will be determined by the BCT during the feasibility study scheduled for completion in 2000. Therefore, there are no unresolved issues pertaining to review of selected technologies for application of expedited solutions.

6.15 HOT-SPOT REMOVALS

Hot spots have been identified at the Depot and are being evaluated in the Remedial Investigation. Therefore, there are no unresolved issues related to hot-spot removals at this time. However, early removal candidates (as detailed in Section 3.4.6) have been identified. Of the candidate sites, subparcels 28.2, 35.1, 35.2, 35.3, 35.4, 35.5, 36.16 and 36.29 are being addressed as removal action sites. These are discussed in Section 6.13. The remaining subparcels from Section 3.4.6 (subparcels 25.2, 15.5 and 7.1) are being evaluated in the Remedial Investigation. Removal of dieldrin impacted soil at the military family housing area and removal of PCB impacted soil around Building 274 was completed in 1998. Therefore, there are no unresolved issues pertaining to hot-spot removals.

6.15.1 BCT Action Items

The BCT decided to proceed with the proposed removal actions in 1999 due to risk concerns, reuse concerns, and the chemical warfare materiel impeding additional environmental work at Dunn Field. The remaining hot spots did not demonstrate an imminent threat to human health, therefore the BCT deferred parcels 25.2, 15.5 and 7.1 until completion of the Remedial Investigation.

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. The Depot updated the environmental condition of property map in 1999 as areas of the Depot were determined to be clean after the BCT reviewed sampling data or reviewed documents and determined that no further action was required. This determination only applied to the buildings or the surface and shallow subsurface soils within the subparcels. In some cases, the groundwater that is from 60 to 90 feet below the ground surface is contaminated. The Depot will continue to update the environmental condition of

SECTION SIX **TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

property map as decisions are made by the BCT so that an accurate visual portrayal of property available for transfer is maintained.

The issue of groundwater contamination under an otherwise clean parcel must be addressed by the BCT. The EPA offered a memorandum explaining a "horizontal split" approach for addressing groundwater contamination present underneath otherwise clean properties. This issue remains unresolved. The BCT will resolve this issue prior to the Finding of Suitability to Transfer for any affected parcels.

Land use controls are also an unresolved issue. Department of Defense Draft Policy on Landuse Controls has recently been offered and has not yet been integrated into the BCT's approach. EPA Region 4 also has policy on establishing a facility specific plan, titled a Land Use Control Action Plan (LUCAP). The BCT is discussing how these policies will be implemented at the Depot. The BCT and their respective agencies must resolve this issue. A clearly defined approach is required at the Depot to ensure all parties that the steps necessary for landuse controls and protective covenants are in place. This will include the operations and maintenance of any necessary landuse controls that are passed along to future owners as deed restrictions. The BCT began discussing this issue in 1999, and it will continue until an approach is agreed upon by the BCT and supported by their respective agencies.

6.17 OVERLAPPING PHASES OF THE CLEANUP PROCESS

As of October 1999, 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 Feasibility Study prior to completion of the final Remedial Investigation. Some of the decision documentation may also be drafted as soon as the most appropriate remedial alternative becomes apparent. While these little steps seem insignificant, it is the opinion of the BCT that the cumulative affect could mean saving many months. These schedule savings will aid the Depot in meeting an aggressive schedule. 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 Depot 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 dollars. This contract should provide all cleanup actions at the

SECTION SIX TECHNICAL AND OTHER ISSUES TO BE RESOLVED

Depot through the completion of the CERCLA program. As of October 1999, 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, but was replaced by the formation of 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. To date, the DRC has maintained a separation from the BCT and the cleanup program at the Depot. They are not involved with the cleanup program.

6.20 BIAS FOR CLEANUP INSTEAD OF STUDIES

Whenever possible and supported by the requirements of the National Contingency Plan, the BCT 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. As of October 1999, excavation of impacted surface soil has been planned for Parcel 35 and 28 and chemical warfare materiel at Dunn Field. Excavation of dieldrin impacted soil around the military family housing area was completed in October 1998. Excavation of PCB impacted soils was completed around Building 274 ("J" Street Cafe) in December 1998. At this time, the BCT has not identified any unresolved issues related to bias for cleanup instead of studies.

6.21 EXPERT INPUT ON CONTAMINATION AND POTENTIAL REMEDIAL ACTIONS

The Depot 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

SECTION SIX TECHNICAL AND OTHER ISSUES TO BE RESOLVED

feasibility of a soil vapor extraction for this issue will be evaluated in the Feasibility Study. At this time, there are no unresolved issues with regard to presumptive remedies.

6.23 PARTNERING (USING INNOVATIVE MANAGEMENT, COORDINATION AND COMMUNICATION TECHNIQUES)

The Depot is fostering the partnership with regulatory agencies, the U.S. Army 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. Partnering or strategic planning meetings are scheduled for the BCT and supporting team members as well as for the Restoration Advisory Board this year. At this time, since partnering is established, there are no unresolved issues with regard to partnering.

6.24 UPDATING THE EBS AND NATURAL/CULTURAL RESOURCES DOCUMENTATION

The final EBS for the Depot was completed in November 1996. Now that the EBS is final, the Depot will update the installation status portions of the BCP on an annual basis, if needed.

The final EA for Master Interim Lease, which includes natural and cultural resources documentation for the Depot, was completed in September 1996. A final EA for Disposal and Reuse was completed in February 1998. A Finding of No Significant Impact regarding disposal and reuse of the Depot was signed by AMC 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.

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 is actively fostering partnerships with the regulatory agencies, the U.S. Army 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.

SECTION SEVEN**REFERENCES****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.

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———. 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.

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———. 1995i. Technical Memorandum. Summary of Information Inventory, Defense Distribution Depot Memphis, Tennessee, Early Removal Task.

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- . 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.
- Defense Distribution Depot, Memphis Tennessee (DDMT). 1992. Spill Response for DDMT 1990, 1991, 1992.
- . 1993. 1993 Spill Response Summary
- . 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.
- 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.

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Memphis and Shelby County Division of Planning and Development. 1993. Population, Housing, and Economic Analysis 1970-1990.

Office of Post Engineer DDMT. 1947. Depot Layout Plan

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.

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———. 1993c. Asbestos Identification Survey for Buildings 260-271.

———. 1993d. Storage Tank Survey.

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———. 1994c. Asbestos Identification Survey for Buildings 229-309.

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———. 1994f. Asbestos Identification Survey for Buildings 429-530.

———. 1994g. Asbestos Identification Survey of Buildings 549-650.

———. 1994h. Asbestos Identification Survey of Buildings 670-720.

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———. 1994j. Asbestos Identification Survey of Buildings 1084-25.

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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.

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APPENDIX A

TABLE A-1
FISCAL YEAR FUNDING REQUIREMENTS

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INSTALLATION BUDGET (\$000)									
ACTIVITY	FY88	FY89	FY00	FY01	FY02	FY03	FY04	FY05	FY06 COMPLETION
Restoration	0	4,516	3,120	4,267	7,347	700	700	700	2,100
Compliance	88	146	41	44	36	31	39	32	32
Planning	3	5	5	5	5	5	5	0	0
Management	714	1,324	881	884	762	566	520	480	1,186
TOTAL	1,597	5,991	4,047	5,200	8,150	1,302	1,261	1,212	3,318

APPENDIX B

TECHNICAL DOCUMENTS SUMMARY

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	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.

TECHNICAL DOCUMENTS SUMMARY

Document	Year	Author
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

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 Mariah 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

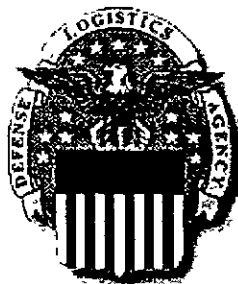
Document	Year	Author
Memphis, Tennessee		Inc.
Final Environmental Assessment of BRAC 95 Disposal and Reuse of Defense Depot Memphis Tennessee	1998	Tetra Tech, Inc., U.S. Army Corps of Engineers Mobile District and U.S. Army Materiel Command,
Final Streamlined Risk Assessment Parcel 3 Technical Memorandum	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.
Draft 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

APPENDIX C

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

CONTENTS

Section	Page
I. Purpose	1
II. Site Conditions and Background.....	1
A. Site Description.....	1
B. Other Actions	8
III. Threats to Public Health, Welfare, or the Environment.....	8
A. Threats to Public Health or Welfare.....	8
B. Threats to the Environment.....	8
IV. Endangerment Determination.....	8
V. Proposed Actions and Estimated Costs	9
A. Proposed Actions.....	9
B. Estimated Costs.....	14
VI. Expected Change in the Situation Should Action Be Delayed or Not Taken	14
VII Outstanding Policy Issues	15
VIII. Enforcement	15
IX. Recommendation.....	15

Appendix

A. Responsiveness Summary

CONTENTS (CONTINUED)

Figures	Page
1 Depot Location in Memphis Metropolitan Area	3
2 Area of Parcels 35 and 28 Included in Removal Action	4
3 Removal Actions Area Configuration	5
4 Area Configuration with Excavation Areas	10

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;

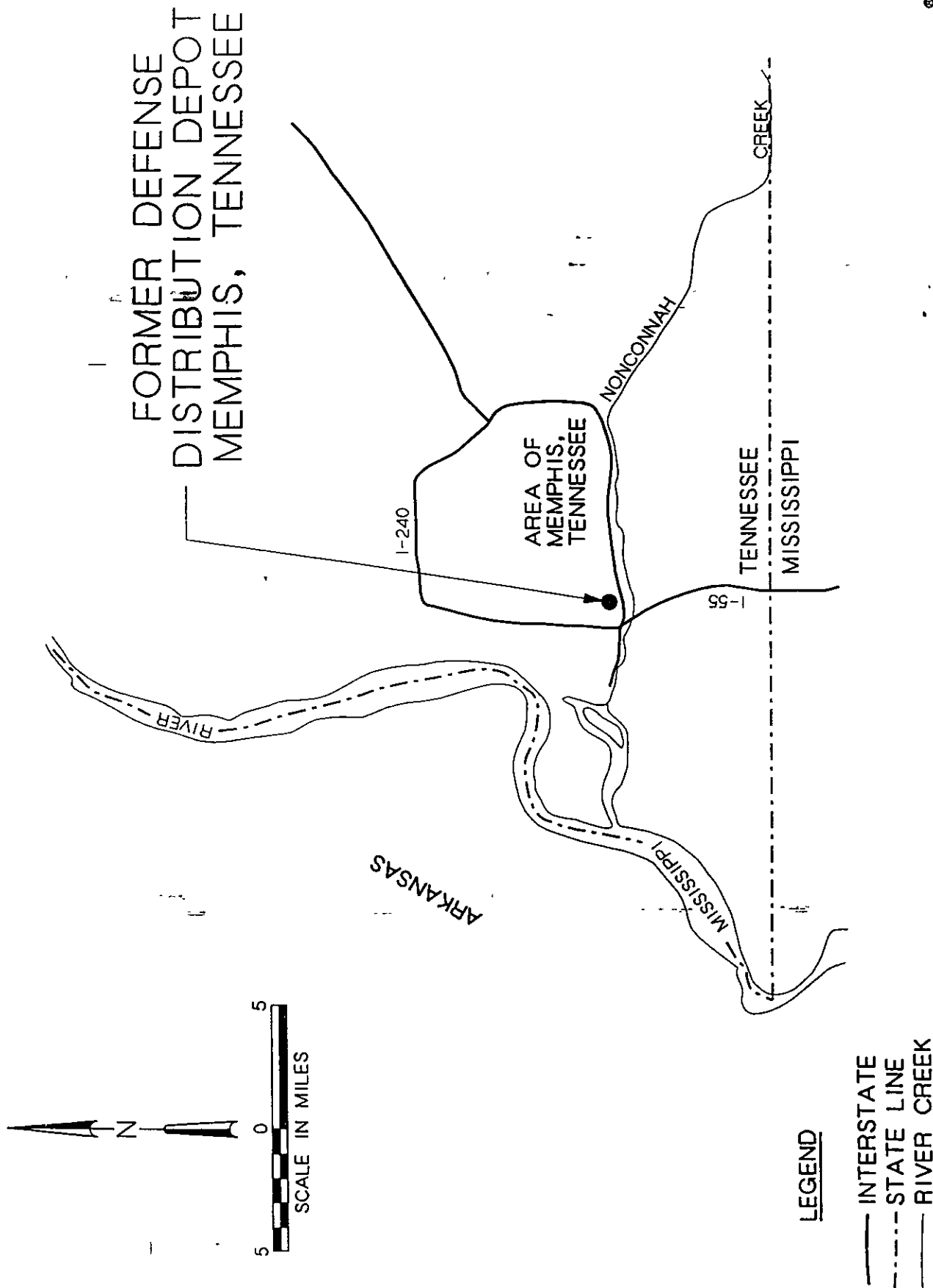
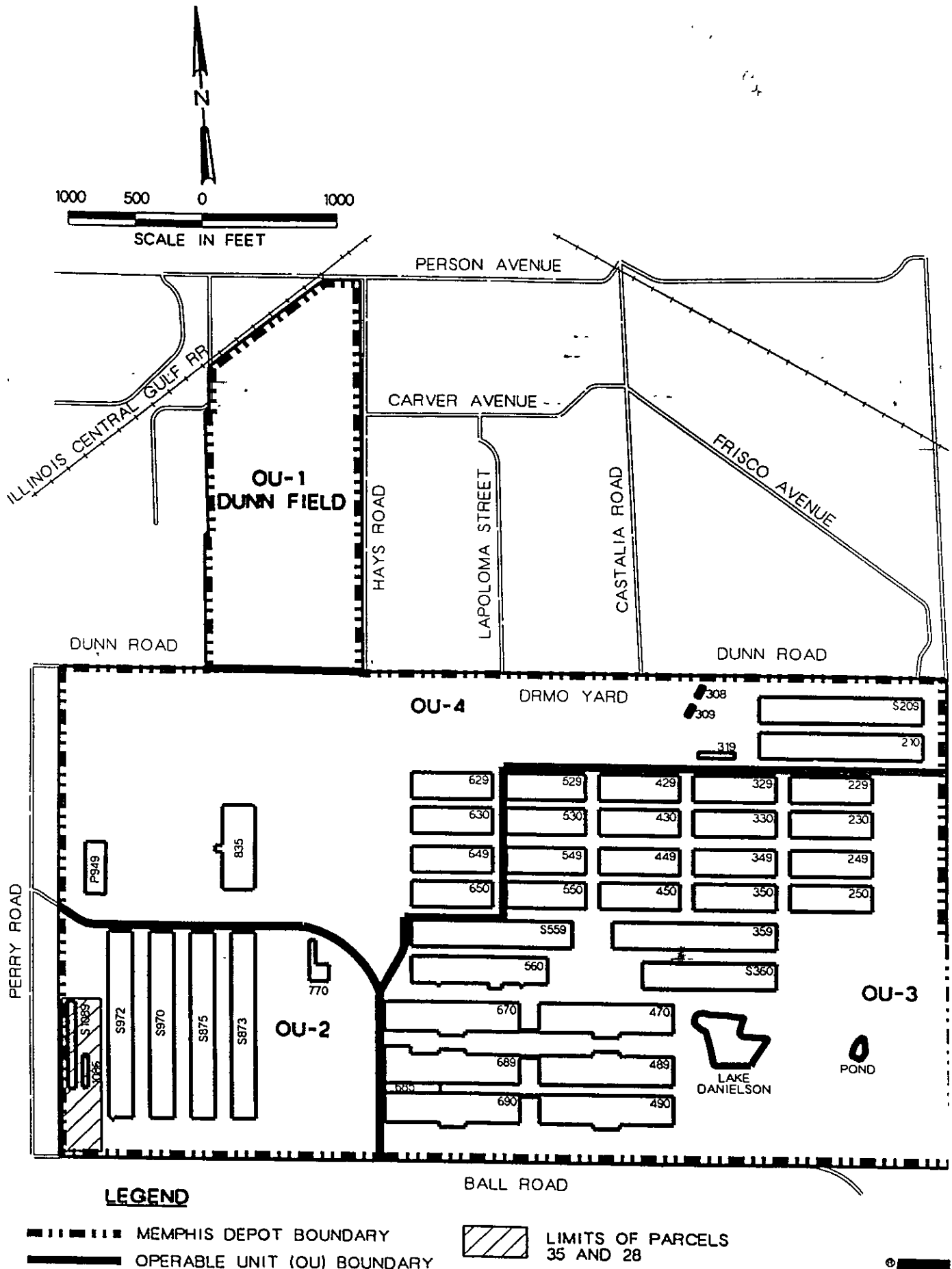


FIGURE 1

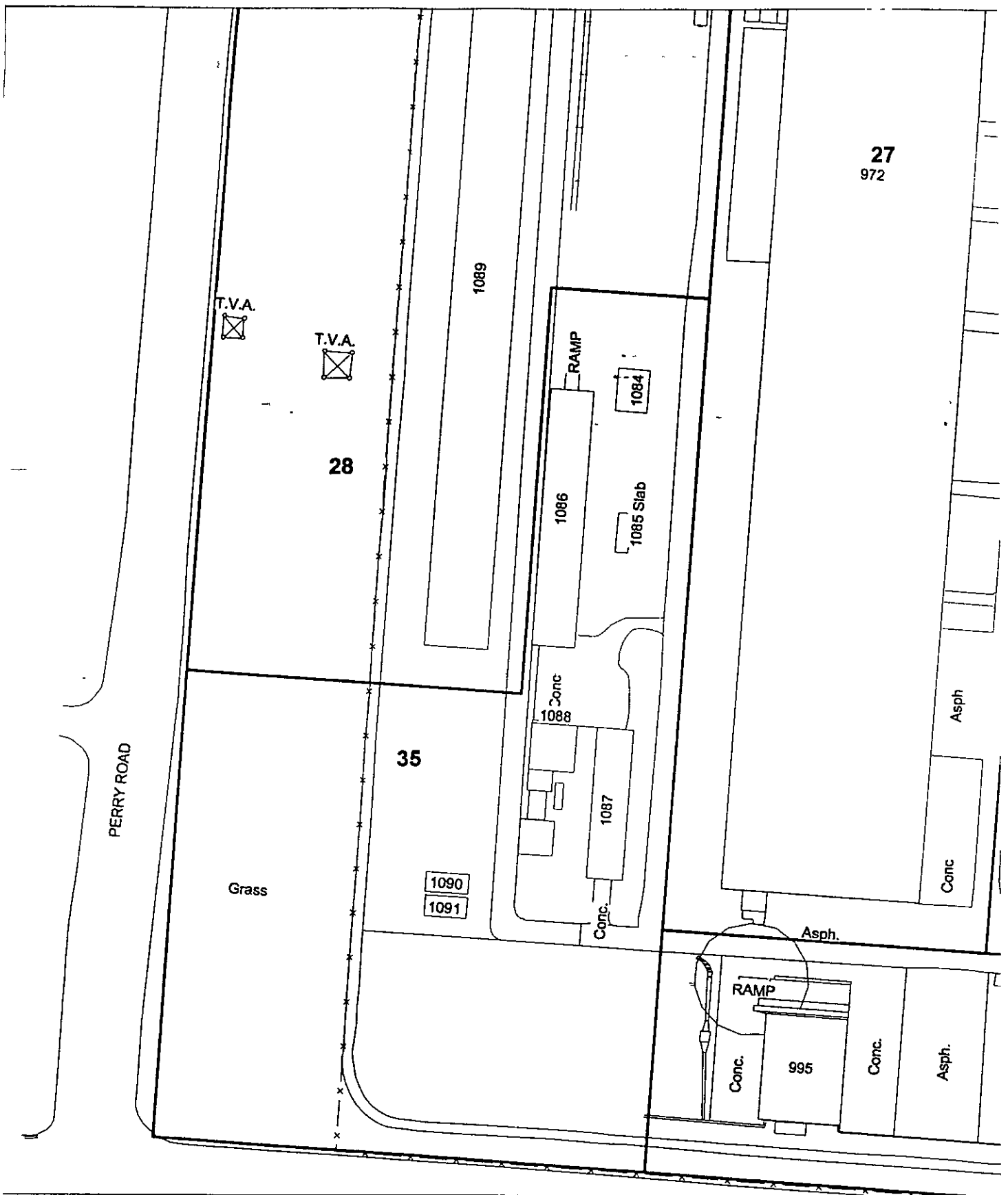




Source: Engineering-Science, 1993

FIGURE 2
LOCATION OF PARCELS 35 AND 28





MAP SCALE (1" = 128')



Figure
SITE CONFIGURATIC
BRAC PARCELS 35 &
CH2MH

- 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:

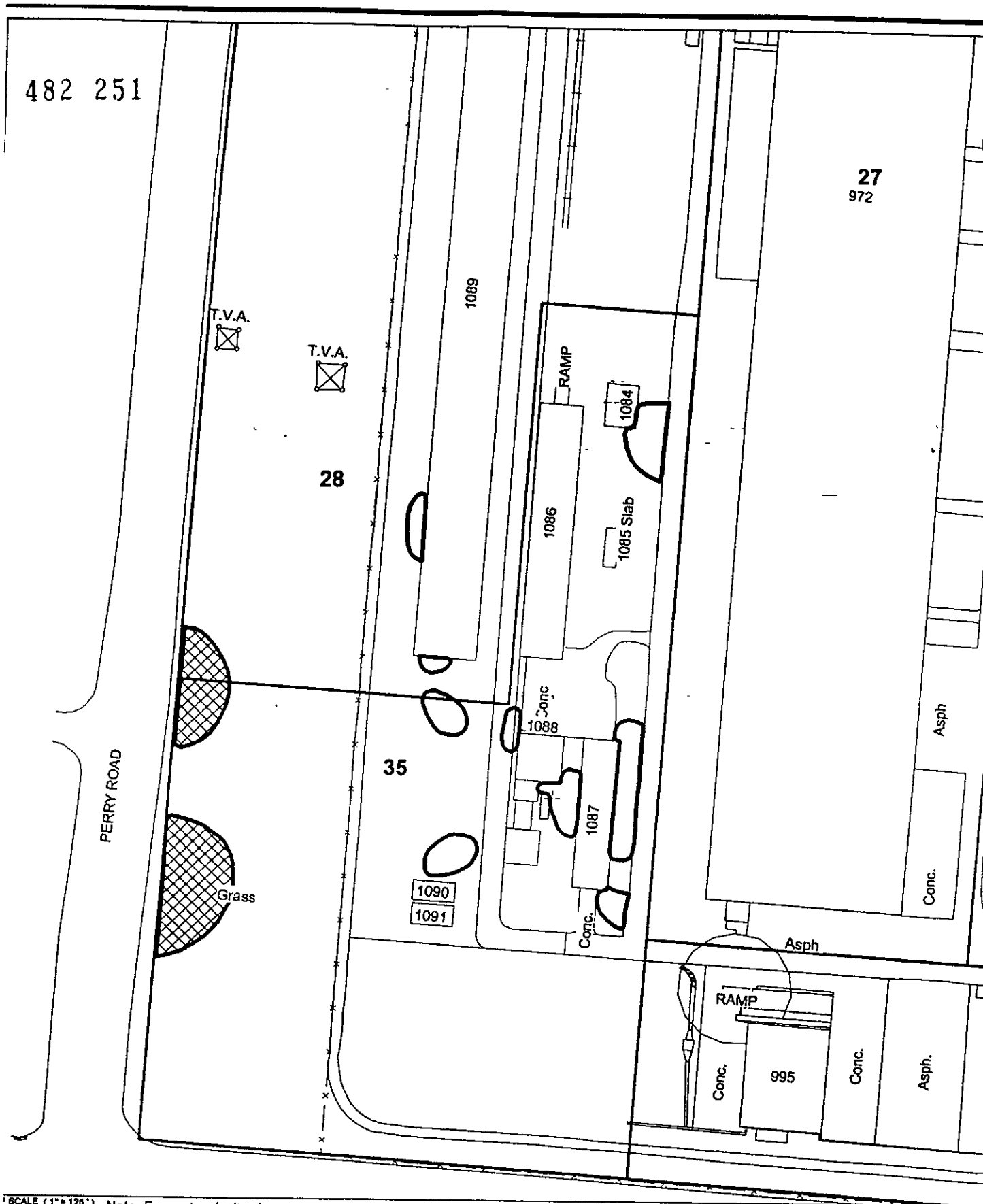
- **Alternative 1** – Decontaminate Existing Metal and Masonry Buildings and Associated Equipment for In-Place BRAC Transfer; Remove and Dispose of Wooden Structures, Contaminated Soil, and Debris;
- **Alternative 2** – Decontaminate Existing Metal and Masonry Buildings for In-Place BRAC Transfer; Decontaminate, 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" = 125')

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)

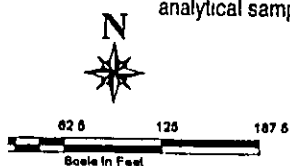


Figure 4
SITE CONFIGURATION WITH
EXCAVATION AREAS
BRAC PARCELS 35 & 28

CH2MHILL

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

Appendix A.

Responsiveness Summary

Comments Regarding
Engineering Evaluation/Cost Analysis
Old Paint Shop and Maintenance Area
Parcels 35 and 28

Public comments on the environmental removal action proposed at the area of the Depot referred to as Parcels 28 and 35 have been requested and received. The Defense Logistics Agency placed the Engineering Evaluation and Cost Analysis report that documents and recommends a cleanup alternative into the four Depot information repositories on May 17, 1999. This is also the date that the 30 day public comment period began. This comment period was eventually extended for 30 days until July 16, 1999. During that 60 day period, 29 comments were received by DLA from the public. Several comments were made by two citizens through two separate written letters while the remaining comments were provided during a public comment meeting. There were no comments received from the public through the use of the telephone answering service set up for that purpose during the 60 day period.

Of the 29 comments, twelve are directly applicable to the proposed action. Although the remaining 17 comments are not directly applicable to the proposed action, responses are provided in the following documentation. The comments and responses that are directly applicable are provided first, while the other general comments and responses are provided second.

DLA as the lead agency performing this removal requested and was provided assistance from the Environmental Protection Agency Region 4, the Tennessee Department of Environment and Conservation and CH2M Hill (project consultant) in the formulation of these responses.

The following twelve comments and responses are substantive and directly applicable to the proposed removal action:

Why does environmental cleanup have to happen in order to transfer this piece of property?

This removal would probably be required regardless of leasing or transfer of this area. The interest in reusing this area has merely raised the cleanup priority of this area.

On closing federal facilities at areas that the EPA has determine require some type of remedial action, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Section 120 (h)(3) {42 U.S.C. 9620 (h)(3)} requires the transferring federal agency to take all cleanup actions necessary to protect human health and the environment, or have all actions in place and functioning properly to the satisfaction of the EPA Administrator, before the property can be transferred.

The Depot Redevelopment Corporation (DRC) has identified this area as a priority for transfer. Under CERCLA and the National Contingency Plan, the Defense Logistics

Agency (DLA) has the authority to proceed and perform an early removal to aide the reuse of the property. Since the Remedial Investigation may find that a remedial action is required and this area has been identified as a priority for reuse, DLA has decided to propose and perform an early removal action.

In the case of this proposed removal action, there are levels of metals specifically lead, arsenic and antimony, that exceeded the EPA's Risk Based Concentrations (RBC). These RBC values are screening values that tell environmental professionals whether an area requires further evaluation or whether there is little or no environmental concern. At this area, sample results significantly exceeded the RBCs, which indicates that the outcome of the Remedial Investigation (RI) for this area would probably find that a remedial action would be required. We are currently conducting a RI, but the RI will not be complete until the end of calendar year 2000.

Why do you have to bring up the environmental standards for another company to come in even though people worked here for 50 years? Was it too dirty for them to work here?

The Defense Logistics Agency is not cleaning up this area just because another company is coming into this area to work. On closing federal facilities at areas that the EPA has determine require some type of cleanup action, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Section 120 (h)(3) {42 U.S.C. 9620 (h)(3)} requires the transferring federal agency to take all cleanup actions necessary to protect human health and the environment, or have all actions in place and functioning properly to the satisfaction of the EPA Administrator, before the property can be transferred.

The levels of metals found in surface soils at this area of the Depot exceeded what EPA considers to be acceptable levels of risk for residents or workers, primarily through incidental exposure to those surface soils. A higher risk does not mean that there were cases of illness or worker impact from these areas, it merely means that the chance of contracting an illness is higher than the normal chance of contracting an illness.

What substances were tested for during field work to determine this area needed to be cleaned up?

Within the Parcels 35 and 28 area, surface and subsurface soil samples were analyzed for the following classes of chemicals: metals, pesticides, polychlorinated biphenyls (PCBs), polynuclear aromatic hydrocarbons (PAHs), semivolatile organic compounds (SVOCs) and volatile organic compounds (VOCs). Each of these analyses includes numerous chemicals. Analyses were performed in accordance with EPA-prescribed analytical methods. Although analyses included these numerous chemicals, Table 1-5 of the EE/CA reports only the chemicals that exceeded the screening criteria.

I request a 30-day extension.

The request was granted and the public comment period extended from June 15 until July 15, 1999.

How will we know that it is clean? Who/what will decide what is clean, what is not and what is acceptable?

The regulatory agencies, EPA and TDEC, involved with the oversight of this project will determine cleanup levels for any contaminants determined to represent an unacceptable risk. Through risk assessment calculations, we can estimate the concentrations of contaminants that can safely remain in soil. On a site-specific basis, these concentrations would be the cleanup levels as verified through rigorous sampling as the cleanup progresses. EPA and TDEC must concur that the cleanup has achieved the cleanup levels.

Did you retest? Will you retest? And will you bring that information back to the RAB?

Sampling will occur during and after the removal action to define the limits of contamination and to confirm that the contamination has been removed to the specified limits. The contractor performing the removal action will prepare documentation of the confirmatory sampling, which will be made available to the public in the Information Repositories. Once the removal is complete, a presentation will be made to the RAB summarizing the final removal action and presenting the results of the confirmation sampling.

Will you conduct this removal in a safe manner or an expedited, sloppy manner in order to transfer the property and save money?

This action will be performed in a manner that fully complies with all applicable environmental and safety related regulations. The Memphis/Shelby County Health Department, TDEC and EPA will monitor the work to ensure it is being conducted in a safe manner.

How do you know there will be no "long-term operations and maintenance"?

Since this is a soil removal action that entails the complete removal of all contaminated surface soils within the area of concern means that there will be no operation nor maintenance of an on site "treatment" system. No aspect of this proposed removal has been identified as having a long term, on-site component. After the transfer of this area to a non-federal entity, real estate monitoring activities will be conducted to ensure that the use of the property remains consistent with the approved reuse plan. The Department of Defense does not view real estate monitoring as long-term operation and maintenance. Upon the lease or transfer of this area, operations and maintenance of the industrial facilities will be the responsibility of the tenant or owner and will be done in accordance with all applicable regulations and permits.

How will a fence keep industrial contaminant levels contained when dust can transport these contaminants past the fence to the nearby residential area?

The fence is an institutional control that must be in place to prevent people from entering the industrial site to protect them not only from chemicals but also from safety hazards. There are three scenarios where people possible from the soil contamination present at this area:

- Dermal contact,
- Ingestion, and
- Dust Inhalation.

Dermal contact, ingestion of soils and dust inhalation from this area were evaluated from a worker exposure perspective due to industrial reuse. During the actual removal of the soil, dust inhalation may be a predominant risk factor. Dust control measures during this removal action will be a priority. Since that is a temporary condition, dust inhalation should not be used to determine the ultimate cleanup so long as the dust can be controlled during the removal action.

Dust will be control during the cleanup action by wetting the areas of excavation with water during all construction periods and covering any open excavation with plastic lining. Work also may be suspended during periods of high wind. The air quality surrounding the site will be monitored with a device called a "mini-ram" air sampler during construction activities. Work will cease if any exceedences of action levels are detected. Work will continue once the cause of the dust exceedance has been determined and corrected. The Occupational Safety and Health Administration sets the action limits for dust.

Alternative 1 is ridiculous and should not be allowed in order to relieve residents from this type of industrial use.

All three alternatives proposed in this EE/CA are acceptable based on the proposed future reuse of the Memphis Depot property put forth in the Depot Redevelopment Corporation's (DRC) "Memphis Depot Redevelopment Plan," dated May 1997. The proposed future reuse for the parcels included in this EE/CA is light industrial. Future reuse of the Memphis Depot property is the responsibility of the DRC. The Army recognizes the DRC as the organization responsible for implementing property reuse as specified in the redevelopment plan.

To facilitate reuse, the DRC informs the BRAC Cleanup Team (BCT) when parcels become priorities for reuse. While the DRC's priorities and the proposed reuse drive the BCT's decision making to a certain extent, future reuse decisions are made by the DRC. The DRC has requested that the equipment and facilities in these parcels remain in place for future reuse. Therefore, Alternative 1 provides the appropriate level of cleanup necessary to transfer the parcels for light industrial reuse while fulfilling the DRC's requirement to leave the equipment and facilities in place.

If a future user should continue the operation of these facilities as paint booths and a sand blast booth, the future tenant/buyer will be required to comply with all applicable local, state and federal environmental regulations. Future tenants/buyers will also be required to obtain the necessary permits and be subject to periodic inspections by the Memphis/Shelby County Health Department, TDEC and EPA.

Alternative 1 achieves the cleanup requirements under CERCLA and the objectives of the Memphis Depot Redevelopment Plan. Any questions or concerns regarding the redevelopment plan or future reuse should be directed to the Depot Redevelopment Corporation at (901) 942-4939.

Alternative 3 is the most appropriate because the value of a clean environment for residents living in the area is priceless compared to the cost of the clean up.

All three alternatives proposed in this Engineering Evaluation/Cost Analysis (EE/CA) are acceptable based on the proposed future reuse of the Memphis Depot property put forth in the Depot Redevelopment Corporation's (DRC) "Memphis Depot

Redevelopment Plan," dated May 1997. The proposed future reuse for the parcels included in this EE/CA is light industrial. Future reuse of the Memphis Depot property is the responsibility of the DRC. The Army recognizes the DRC as the organization responsible for implementing property reuse as specified in the redevelopment plan.

To facilitate reuse, the DRC informs the BRAC Cleanup Team (BCT) when parcels become priorities for reuse. While the DRC's priorities and the proposed reuse drive the BCT's decision making to a certain extent, future reuse decisions are made by the DRC. The DRC has requested that the equipment and facilities in these parcels remain in place for future reuse. Therefore Alternative 1 provides the appropriate level of cleanup necessary to transfer the parcels for light industrial reuse while fulfilling the DRC's requirement to leave the equipment and facilities in place.

Alternative 1 achieves the cleanup requirements under CERCLA and the objectives of the Memphis Depot Redevelopment Plan. Any questions or concerns regarding the redevelopment plan or future reuse should be directed to the Depot Redevelopment Corporation at (901) 942-4939.

Samples should have been taken deeper than 12 inches below ground surface to see if they could get into the groundwater.

Subsurface samples were taken from 12 soil borings located within Parcels 35 and 28 and analyzed for the chemicals listed in the response to Comment 9. From these 12 soil borings, samples were collected from approximately the 5 to 8 foot interval, 20 foot interval and 40 foot interval. Groundwater wells in Parcels 35 and 28 have been sampled five times since 1995. The metals antimony, chromium and lead have been detected in groundwater but have neither been consistently detected nor detected at concentrations that would indicate leaching through the soil to groundwater.

The following comments were more general in nature or dealt with the process of the public involvement for this action and were not directly applicable to the proposed removal action:

**If the Depot had not closed, would you still be doing environmental cleanup?
And if so, what kind?**

Yes. The levels of metals found in surface soils at this area of the Depot exceeded what EPA considers to be acceptable levels of risk for residents or workers, primarily through incidental exposure to those surface soils. The Depot was placed on the National Priorities List (NPL) before it was included on the base closure list. Prior to closure, areas of the Depot were under investigation by the DLA, EPA and Tennessee Department of Environment and Conservation (TDEC) to determine the need for cleanup, as required under CERCLA Section 120(a)(1) and (2). Cleanup levels must be consistent with the National Contingency Plan (NCP), as also required under CERCLA 120 (a)(1) and (2). The environmental cleanup began prior to the Depot being closed under BRAC. Closure served to provide greater emphasis and additional funding to complete the cleanup sooner.

Does the Depot have an Internet web page?

Yes. The Memphis Depot's web page has been established, and work continues on the web page to provide the appropriate information and documents. The Memphis

Depot's web page address is www.ddc.dla.mil/memphis. The Memphis Depot Caretaker Division is under the command of the Defense Distribution Depot Susquehanna, Pennsylvania, which is under the command of the Defense Distribution Center. Information regarding all three organizations can be obtained from the DDC web page at www.ddc.dla.mil. The Defense Logistics Agency's web page at www.dla.mil contains a general overview of the agency's cleanup program.

Why isn't the information contained in documents and RAB meeting briefings not available on the Internet?

The web page for the Memphis Depot has been established, but work continues on the web page to provide the appropriate information and documents. The Information Repository that includes copies of documents, RAB meeting minutes and BRAC Cleanup Team meeting minutes will be made available on the web page as soon as possible.

What illnesses can be developed from chemicals found on certain parts of the Depot?

At the area being considered for removal under this Engineering Evaluation/Cost Analysis, metals and poly aromatic hydrocarbons are the contaminants of concern. Specific metals that exceed screening criteria include aluminum, antimony, arsenic and lead. Attached to this responsiveness summary are Agency for Toxic Substances and Disease Registry (ATSDR) "ToxFAQs" that provide information on how these substances may affect human health and that can also be found on ATSDR's Internet web page at atsdr1.atsdr.cdc.gov.

Are these illnesses the same as illnesses in the community?

The Agency for Toxic Substances and Disease Registry (ATSDR) is currently working on a Public Health Assessment that may address this question. ATSDR does publish informative, concise fact sheets called "ToxFAQs" that are chemical or contaminant specific.

DLA should look into the health of former employees, especially former employees who worked at sites being looked at to clean up.

The Defense Logistics Agency has received no claims and has no knowledge of any documentation linking former employees health issues to contamination at the Depot. The United States Department of Labor is responsible for health issues surrounding current and former employees. To begin the process for the Department of Labor to look into a health claim from a former employee, the employee must complete a CA-2 form with assistance from their physician. This form is available at any federal office that has a personnel/human resource office such as the Corps of Engineers at 167 Mid-America Mall North, (901) 544-0794. These forms can also be found on the internet at:

- www.dol.gov/dol/esa/public/regs/compliance/owcp/forms.htm.

The report was not made available to the public before the public comment meeting and the public did not have time to review it before being asked to comment.

The RAB was notified at the April 1999 meeting that the Engineering Evaluation/Cost Analysis (EE/CA) for Removal Action at the Old Paint Shop and Maintenance Area, Parcels 35 and 28, would be forthcoming. The RAB was also informed at

the April meeting that the May RAB meeting would include a briefing regarding the proposed removal action and a public comment period. The May/June 1999 EnviroNews that was delivered prior to the May RAB meeting included information regarding the EE/CA and public comment periods. The EE/CA was placed in the Depot's four Information Repositories on May 12. Advertisements announcing the availability of the EE/CA ran in the May 14 Tri-State Defender and Silver Star News and the May 13 Commercial Appeal. The 30-day public comment period began on May 17 and was scheduled to end on June 16. However, the public comment period was extended until July 19 due to a verbal request for a 30-day extension.

The National Contingency Plan {40 CFR 300.415(m)(4)(i)} requires the following for removal actions:

- Establish at least one Information Repository (the Depot has four and provides RAB members the opportunity to "check out" documents to review at home)
- Make the Administrative Record available in the Information Repository (IR) no later than the signing of the EE/CA approval memorandum (the Depot maintains the Administrative Record at the four IRs and provided the EE/CA prior to signing of the EE/CA approval memorandum)
- Publish a notice of availability and a brief description of the EE/CA in a major local newspaper of general circulation (the Depot published the notice of availability in three local newspapers)
- Upon completion of the EE/CA, provide a public comment period of at least 30 days that must be extended by at least 15 days upon timely request (the Depot provided a 30-day public comment period and extended it for an additional 30 days)

The public comment meeting was only one avenue open for the public to comment on this proposed removal action. The opportunity to comment was afforded throughout the 60-day comment period by providing comments in writing to the Memphis Depot or by leaving a message on the Memphis Depot's environmental information line telephone answering service. The address and telephone number were publicized at the May RAB meeting, as well as in the EnviroNews and the three newspaper notices.

The EPA acknowledged that the Depot followed all requirements of CERCLA and the NCP in conducting this public participation period.

Was this meeting and the public comment period publicized?

Yes. The May/June 1999 EnviroNews mailed to approximately 4,000 homes in the community surrounding the Memphis Depot contained detailed information about the 30-day public comment period, the May RAB meeting and the May public comment meeting. Advertisements regarding the May RAB meeting and the public comment period ran in the May 14 issues of the Tri-State Defender and the Silver Star News and in the May 13 issue of the Commercial Appeal. The notice of extension of the public comment period ran in the June 23 issue of the Commercial Appeal and the June 24 issues of the Tri-State Defender and the Silver Star News.

All RAB members should receive a copy of the document. We didn't know the document existed.

The public, as well as the RAB, has every opportunity to review the document as it is located in all four Depot Information Repositories. Additionally, the Memphis Depot notified the RAB at the May meeting that the document was available for RAB members to check out from the Memphis Depot Information Repository. No RAB member ever contacted the Memphis Depot to check out the document to review at home. Additionally, the executive summary of the document was distributed to the RAB during the comment period.

The RAB was notified at the April 1999 meeting that the Engineering Evaluation/Cost Analysis (EE/CA) for Removal Action at the Old Paint Shop and Maintenance Area, Parcels 35 and 28, would be forthcoming. The RAB was also informed at the April meeting that the May RAB meeting would include a briefing regarding the proposed removal action and a public comment period. The May/June 1999 EnviroNews that was delivered prior to the May RAB meeting included information regarding the EE/CA and public comment periods. The EE/CA was placed in the Depot's four Information Repositories on May 12. Advertisements announcing the availability of the EE/CA ran in the May 14 Tri-State Defender and Silver Star News and the May 13 Commercial Appeal. The 30-day public comment period began on May 17 and was scheduled to end on June 16. However, the public comment period was extended until July 19 due to a verbal request for a 30-day extension.

I want to see health studies done on the people who lived across Perry Road from this area.

The Agency for Toxic Substances and Disease Registry (ATSDR) is preparing a Public Health Assessment that addresses if contamination at the Depot could reach and effect the surrounding community. Questions concerning health issues should be directed to ATSDR or the Memphis/Shelby County Health Department.

DLA is using the RAB to say DLA has involved the community.

The EPA acknowledged that the Memphis Depot and the DLA have met and exceeded the requirements for public involvement associated with this proposed removal action. The Memphis Depot worked to involve the community in this proposed removal action process through the following:

- The bi-monthly newsletter EnviroNews mailed to approximately 4,000 households,
- Publishing public notices in the Tri-State Defender, the Silver Star News and the Commercial Appeal announcing availability of the EE/CA, the 30-day public comment period and the May 20 public comment meeting; and
- Providing a briefing describing the proposed removal action and a verbal public comment opportunity at the May 20 public comment meeting.

Also, the Depot sponsors a community outreach day at least yearly to educate the community on environmental issues at the Depot. Clearly, the RAB is not the only vehicle for public participation in environmental matters at the Site.

How do we know ATSDR will honestly answer our questions and comments if the public's comments are first discussed with Memphis Depot personnel?

The Agency for Toxic Substances and Disease Registry (ATSDR) discusses public comments with the Memphis Depot only when requesting information necessary to prepare an appropriate response. Defense Logistics Agency and Memphis Depot employees do not provide approval of ATSDR responses to public comments or outcomes of Public Health Assessments.

An independent agency should be the lead agency for cleanup at federal facilities.

Both EPA and TDEC are independent of the Department of Defense. Both serve to ensure that both state and federal environmental standards are met and that cleanup proceeds according to state and federal law. Responsibility for cleanup of federal facilities was delegated to the heads of the other Executive Branch departments and agencies (such as the Secretary of Defense) by the President in Executive Order 12088, and reaffirmed by Executive Order 12580 after CERCLA was amended in 1986. CERCLA Section 120 requires EPA to review all studies conducted under CERCLA at NPL sites, and requires the lead agency and EPA to enter into a federal facilities agreement that gives EPA the ultimate authority to select a remedial action in the event of an unresolved disagreement. Therefore, although the day-to-day responsibility for conducting investigations and cleanups rests with the Depot, EPA has a substantial statutory and regulatory role in ensuring the final cleanup is protective of human health and the environment.

If there are "long-term operations and maintenance," who will do it? Who will pay for it?

Long term operations and maintenance as a result of this proposed removal action will not occur. At other areas of the Memphis Depot where long-term operations and maintenance may be necessary, the Department of Defense will work through contractors or other government agencies to conduct the appropriate activities, and the Department of Defense will pay for it.

Why isn't the law passed by the State of Tennessee requiring signs be posted at Superfund sites stating the area is poison being enforced at the Depot?

No law has been passed requiring signs be posted at Superfund sites. House Joint Resolution 331, filed on May 20, 1997, was passed by the House of Representatives and required the Commissioner of the Department of Environment and Conservation to conduct a study and to report its findings and recommendations (including any proposed legislation) to the House on the feasibility of posting warning signs at and around National Priority List Superfund sites. This study was completed and a report issued back to the House on April 15, 1999. As with all applicable local, state and federal laws, the Memphis Depot will comply if this resolution becomes a law.

What are the current October 1998 HI values?

The EPA updated their Hazard Index (HI) values in October 1998. The HI are used to develop the EPA Region III risk based concentrations used in the EE/CA. EPA Region III risk based concentrations are attached and also can be found on the Internet at www.epa.gov/reg3hwmd/risk/riskmenu.htm.

The hazard index values are used to compare chemical concentrations to a unity value, or hazard quotient, of 1.0. EPA uses these values to evaluate the risk from chemicals that do not cause cancer (non-carcinogenic), but cause some other type of illness. These

values are provided in Table 1-4 of the EE/CA, so long as the contaminant is not a suspected carcinogen. See attached EPA Region III RBC Table to determine whether a chemical is a carcinogen or a non-carcinogen.

Make the figures referred to in the report available.

The figures are included in the document, which is available to the public in all four Memphis Depot Information Repositories. Additionally, the Memphis Depot notified the RAB at the May meeting that the document was available for RAB members to check out from the Memphis Depot Reading Room/Information Repository. No RAB member has contacted the Memphis Depot to check out the document to review at home.



ToxFAQs

482 266

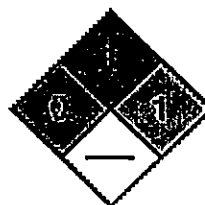
Aluminum

CAS# 7429-90-5

September 1995

Aluminum

Al

[GIF Image](#)[XYZ File](#)[NFPA Label Key](#)[Material Safety Data Sheet](#)
(University of Utah)

Agency for Toxic Substances and Disease Registry

This fact sheet answers the most frequently asked health questions about aluminum. For more information, you may call the ATSDR Information Center at 1-800-447-1544. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

SUMMARY: Everyone is exposed to low levels of aluminum from food, air, and water. Exposure to high levels of aluminum affects breathing, the nervous system, and bones. High levels can also cause birth defects. Aluminum has been found in at least 489 of 1,416 National Priorities List sites identified by the Environmental Protection Agency.

What is aluminum? (Pronounced a-loo'mi-num)

Aluminum occurs naturally and makes up about 8% of the surface of the earth. It is always found combined with other elements in the earth such as minerals and rocks.

Aluminum metal is silver-white and flexible. It is often used in cooking utensils, containers, appliances, and building materials.

482 267

It is used in several forms including aluminum nitrate, aluminum oxide, aluminum hydroxide (used in antacids), aluminum chlorohydrate (used in deodorants), and aluminum sulfate (used to treat drinking water). It is used in paints and fireworks, and to produce glass, rubber, and ceramics.

What happens to aluminum when it enters the environment?

- It binds to particles in the air.
- It can dissolve in lakes, streams, and rivers depending on the quality of the water.
- Acid rain may dissolve aluminum from soil and rocks.
- It can be taken up into some plants from soil.

How might I be exposed to aluminum?

- Eating small amounts of aluminum in food
- Breathing higher levels of aluminum dust in workplace air
- Drinking water with high levels of aluminum near waste sites, manufacturing plants, or areas naturally high in aluminum
- Eating substances containing high levels of aluminum (such as antacids)
- Very little enters your body from aluminum cooking utensils.

How can aluminum affect my health?

Low-level exposure to aluminum from food, air, water, or contact with skin is not thought to harm your health. Aluminum, however, is not a necessary substance for our bodies and too much may be harmful.

People who are exposed to high levels of aluminum in air may have respiratory problems including coughing and asthma from breathing dust.

Some studies with high levels in mice and rabbits show that aluminum may harm young animals more because it can cause delays in skeletal and neurologic development.

Aluminum has been linked to Alzheimer's disease because those patients have high levels of aluminum in their brains. We do not know whether aluminum causes the disease or whether the buildup of aluminum happens to people who already have the disease.

Infants and adults who received large doses of aluminum as a treatment for another problem developed bone diseases, which suggests that aluminum may cause skeletal problems.

Some sensitive people develop skin rashes from using aluminum chlorohydrate deodorants.

There is no evidence that aluminum affects reproduction in people or animals.

How likely is aluminum to cause cancer?

The Department of Health and Human Services has not classified aluminum for carcinogenicity.

The International Agency for Research on Cancer and the Environmental Protection Agency (EPA)

482 268

have not classified aluminum for carcinogenicity.

The available information has not shown that aluminum is a potential carcinogen.

Is there a medical test to show whether I've been exposed to aluminum?

There are tests to measure aluminum in blood, urine, and feces. The amount in your urine can tell you whether you have been exposed to higher than normal levels of aluminum.

Tests can also detect aluminum in your hair and fingernails. These tests are not routinely performed at your doctor's office, but your doctor can take blood, urine, or tissue samples and send them to a testing laboratory.

Has the federal government made recommendations to protect human health?

EPA requires that spills into the environment of 5,000 pounds or more of aluminum sulfate be reported. Special regulations are set for aluminum phosphide because it is a pesticide.

EPA recommends that the concentration of aluminum in drinking water not exceed 0.2 parts of aluminum per million parts of water (0.2 ppm) because of taste and odor problems.

The Food and Drug Administration (FDA) has determined that aluminum cooking utensils, aluminum foil, antiperspirants, antacids, and other aluminum products are generally safe.

The Occupational Safety and Health Administration (OSHA) set a maximum concentration limit for aluminum dust in workplace air of 15 milligrams of aluminum per cubic meter of air (15 mg/m³) for an 8-hour workday over a 40-hour week.

The National Institute for Occupational Safety and Health (NIOSH) has recommended a limit of 10 mg/m³ in workplace air for up to a 10-hour workday over a 40-hour workweek.

Glossary

Alzheimer's disease:

A disease of the nervous system that causes mental deterioration.

Carcinogenicity:

Ability to cause cancer.

Milligram (mg):

One thousandth of a gram.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1992. Toxicological profile for aluminum. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information?

ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any

more questions or concerns.

For more information, contact:

Agency for Toxic Substances and Disease Registry
Division of Toxicology
1600 Clifton Road NE, Mailstop E-29
Atlanta, GA 30333
Phone: 1-800-447-1544
FAX: 404-639-6315



**U.S. Department of Health and Human Services
Public Health Service
Agency for Toxic Substances and Disease Registry**

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Last Update: September 1, 1995



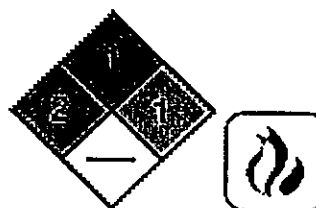
ToxFAQs

Antimony

CAS# 7440-36-0

September 1995

Antimony
Sb
GIF Image
XYZ File



NFPA Label Key

Material Safety Data Sheet
(University of Utah)

Agency for Toxic Substances and Disease Registry

This fact sheet answers the most frequently asked health questions about antimony. For more information, you may call the ATSDR Information Center at 1-800-447-1544. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

SUMMARY: Exposure to antimony occurs in the workplace or from skin contact with soil at hazardous waste sites. Breathing high levels of antimony for a long time can irritate the eyes and lungs, and can cause problems with the lungs, heart, and stomach. This chemical has been found in at least 403 of 1,416 National Priorities List sites identified by the Environmental Protection Agency.

What is antimony?
(Pronounced an'ti-mo-nee)

Antimony is a silvery-white metal that is found in the earth's crust. Antimony ores are mined and then mixed with other metals to form antimony alloys or combined with oxygen to form antimony oxide.

Little antimony is currently mined in the United States. It is brought into this country from other

482 271

countries for processing. However, there are companies in the United States that produce antimony as a by-product of smelting lead and other metals.

Antimony isn't used alone because it breaks easily, but when mixed into alloys, it is used in lead storage batteries, solder, sheet and pipe metal, bearings, castings, and pewter. Antimony oxide is added to textiles and plastics to prevent them from catching fire. It is also used in paints, ceramics, and fireworks, and as enamels for plastics, metal, and glass.

What happens to antimony when it enters the environment?

- Antimony is released to the environment from natural sources and from industry.
- In the air, antimony is attached to very small particles that may stay in the air for many days.
- Most antimony ends up in soil, where it attaches strongly to particles that contain iron, manganese, or aluminum.
- Antimony is found at low levels in some rivers, lakes, and streams.

How might I be exposed to antimony?

- Because antimony is found naturally in the environment, the general population is exposed to low levels of it every day, primarily in food, drinking water, and air.
- It may be found in air near industries that process or release it, such as smelters, coal-fired plants, and refuse incinerators.
- In polluted areas containing high levels of antimony, it may be found in the air, water, and soil.
- Workers in industries that process it or use antimony ore may be exposed to higher levels.

How can antimony affect my health?

Exposure to antimony at high levels can result in a variety of adverse health effects.

Breathing high levels for a long time can irritate your eyes and lungs and can cause heart and lung problems, stomach pain, diarrhea, vomiting, and stomach ulcers.

In short-term studies, animals that breathed very high levels of antimony died. Animals that breathed high levels had lung, heart, liver, and kidney damage. In long-term studies, animals that breathed very low levels of antimony had eye irritation, hair loss, lung damage, and heart problems. Problems with fertility were also noted. In animal studies, problems with fertility have been seen when rats breathed very high levels of antimony for a few months.

Ingesting large doses of antimony can cause vomiting. We don't know what other effects may be caused by ingesting it. Long-term animal studies have reported liver damage and blood changes when animals ingested antimony. Antimony can irritate the skin if it is left on it.

Antimony can have beneficial effects when used for medical reasons. It has been used as a medicine to treat people infected with parasites.

How likely is antimony to cause cancer?

The Department of Health and Human Services, the International Agency for Research on Cancer, and the Environmental Protection Agency (EPA) have not classified antimony as to its human

carcinogenicity.

482 272

Lung cancer has been observed in some studies of rats that breathed high levels of antimony. No human studies are available. We don't know whether antimony will cause cancer in people.

Is there a medical test to show whether I've been exposed to antimony?

Tests are available to measure antimony levels in the body. Antimony can be measured in the urine, feces, and blood for several days after exposure. However, these tests cannot tell you how much antimony you have been exposed to or whether you will experience any health effects. Some tests are not usually performed in most doctors' offices and may require special equipment to conduct them.

Has the federal government made recommendations to protect human health?

The EPA allows 0.006 parts of antimony per million parts of drinking water (0.006 ppm). The EPA requires that discharges or spills into the environment of 5,000 pounds or more of antimony be reported.

The Occupational Safety and Health Administration (OSHA) has set an occupational exposure limit of 0.5 milligrams of antimony per cubic meter of air (0.5 mg/m³) for an 8-hour workday, 40-hour workweek.

The American Conference of Governmental Industrial Hygienists (ACGIH) and the National Institute for Occupational Safety and Health (NIOSH) currently recommend the same guidelines for the workplace as OSHA.

Glossary

Carcinogenicity:

Ability to cause cancer.

Ingestion:

Taking food or drink into your body.

Long-term:

Lasting one year or more.

Milligram (mg):

One thousandth of a gram.

Parasite:

An organism living in or on another organism.

PPM:

Parts per million.

Short-term:

Lasting 14 days or less.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1992. Toxicological profile for antimony. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information?

482 273

ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

For more information, contact:

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482 274



ToxFAQs

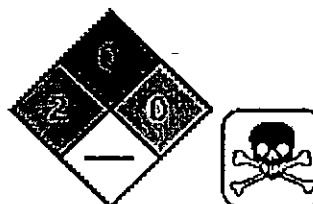
Arsenic

CAS# 7440-38-2

April 1993

Arsenic

As

[GIF Image](#)[XYZ File](#)[NFPA Label Key](#)[Vermont SIRI MSDS Archive](#)

Agency for Toxic Substances and Disease Registry

This fact sheet answers the most frequently asked health questions about arsenic. For more information, you may call the ATSDR Information Center at 1-800-447-1544. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

SUMMARY: Exposure to higher than average levels of arsenic happens mostly in the workplace, near hazardous waste sites, or in areas with high natural levels. Arsenic is a powerful poison. At high levels, it can cause death or illness. This chemical has been found in at least 781 of 1,300 National Priorities List sites identified by the Environmental Protection Agency.

What is arsenic?

(Pronounced ar' se-nik)

Arsenic is found in nature at low levels. It's mostly in compounds with oxygen, chlorine, and sulfur. These are called inorganic arsenic compounds. Arsenic in plants and animals combines with carbon and hydrogen. This is called organic arsenic. Organic arsenic is usually less harmful than inorganic arsenic.

Most arsenic compounds have no smell or special taste.

Inorganic arsenic compounds are mainly used to preserve wood. They are also used to make insecticides and weed killers. You can check the labels of treated wood and insecticides to see if they contain arsenic.

Copper and lead ores contain small amounts of arsenic.

What happens to arsenic when it enters the environment?

- It doesn't evaporate.
- Most arsenic compounds can dissolve in water.
- It gets into air when contaminated materials are burned.
- It settles from the air to the ground.
- It doesn't break down, but can change from one form to another.
- Fish and shellfish build up organic arsenic in their tissues, but most of the arsenic in fish isn't toxic.

How might I be exposed to arsenic?

- Breathing sawdust or burning smoke from wood containing arsenic
- Breathing workplace air
- Ingesting contaminated water, soil, or air at waste sites
- Ingesting contaminated water, soil, or air near areas naturally high in arsenic

How can arsenic affect my health?

Inorganic arsenic is a human poison. Organic arsenic is less harmful.

High levels of inorganic arsenic in food or water can be fatal. A high level is 60 parts of arsenic per million parts of food or water (60 ppm). Arsenic damages many tissues including nerves, stomach and intestines, and skin. Breathing high levels can give you a sore throat and irritated lungs.

Lower levels of exposure to inorganic arsenic may cause:

- Nausea, vomiting, and diarrhea
- Decreased production of red and white blood cells
- Abnormal heart rhythm
- Blood vessel damage
- A "pins and needles" sensation in hands and feet

Long term exposure to inorganic arsenic may lead to a darkening of the skin and the appearance of small "corns" or "warts" on the palms, soles, and torso.

Direct skin contact may cause redness and swelling.

How likely is arsenic to cause cancer?

482 276

The Department of Health and Human Services (DHHS) has determined that arsenic is a known carcinogen. Breathing inorganic arsenic increases the risk of lung cancer. Ingesting inorganic arsenic increases the risk of skin cancer and tumors of the bladder, kidney, liver, and lung.

Is there a medical test to show whether I've been exposed to arsenic?

Tests can measure your exposure to high levels of arsenic. These tests are not routinely performed in a doctor's office.

Arsenic can be measured in your urine. This is the most reliable test for arsenic exposure. Since arsenic stays in the body only short time, you must have the test soon after exposure.

Tests on hair or fingernails can measure your exposure to high levels of arsenic over the past 6-12 months. These tests are not very useful for low level exposures.

These tests do not predict whether you will have any harmful health effects.

Has the federal government made recommendations to protect human health?

The Environmental Protection Agency (EPA) sets limits on the amount of arsenic that industrial sources can release. It restricted or canceled many uses of arsenic in pesticides and may restrict more. EPA set a limit of 0.05 parts per million (ppm) for arsenic in drinking water. EPA may lower this further.

The Occupational Safety and Health Administration (OSHA) established a maximum permissible exposure limit for workplace airborne arsenic of 10 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).

Glossary

Carcinogen:

Substance that can cause cancer.

Ingesting:

Taking food or drink into your body.

PPM:

Parts per million.

Microgram (μg):

One millionth of a gram.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1993. Toxicological profile for arsenic. Atlanta: U.S. Department of Health and Human Services, Public Health Service.

Agency for Toxic Substances and Disease Registry (ATSDR). 1993. Case studies in environmental medicine: Arsenic toxicity. Atlanta: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information?

482 277

ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns. For more information, contact:

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ToxFAQs

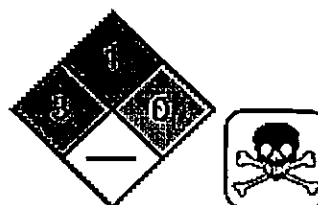
Lead

CAS# 7439-92-1

April 1993

Lead

Pb

[GIF Image](#)[XYZ File](#)

NFPA Label Key

[Vermont SIRI MSDS Archive](#)

Agency for Toxic Substances and Disease Registry

This fact sheet answers the most frequently asked health questions about lead. For more information, you may call the ATSDR Information Center at 1-800-447-1544. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

SUMMARY: Exposure to lead happens mostly from breathing workplace air or dust, and eating contaminated foods. Children can be exposed from eating lead-based paint chips, or playing in contaminated soil. Lead can damage the nervous system, kidneys, and the immune systems. Lead has been found in at least 922 of 1,300 National Priorities List sites identified by the Environmental Protection Agency.

What is lead? (Pronounced led)

Lead is a naturally occurring bluish-gray metal found in small amounts in the earth's crust. It has no special taste or smell. Lead can be found in all parts of our environment. Most of it came from human activities like mining, manufacturing, and the burning of fossil fuels.

Lead has many different uses, most importantly in the production of batteries. Lead is also in

ammunition, metal products (solder and pipes), roofing, and devices to shield x-rays.

Because of health concerns, lead from gasoline, paints and ceramic products, caulking, and pipe solder has been dramatically reduced in recent years.

What happens to lead when it enters the environment?

- Lead itself does not break down, but lead compounds are changed by sunlight, air, and water.
- When released to the air from industry or burning of fossil fuels or waste, it stays in air about 10 days.
- Most of the lead in soil comes from particles falling out of the air.
- City soils also contain lead from landfills and leaded paint.
- Lead sticks to soil particles.
- It does not move from soil to underground water or drinking water unless the water is acidic or "soft".
- It stays a long time in both soil and water.

How might I be exposed to lead?

- Breathing workplace air (lead smelting, refining, and manufacturing industries)
- Eating lead-based paint chips
- Drinking water that comes from lead pipes or lead soldered fittings
- Breathing or ingesting contaminated soil, dust, air, or water near waste sites
- Breathing tobacco smoke
- Eating contaminated food grown on soil containing lead or food covered with lead-containing dust
- Breathing fumes or ingesting lead from hobbies that use lead (leaded-glass, ceramics)

How can lead affect my health?

Lead can affect almost every organ and system in your body. The most sensitive is the central nervous system, particularly in children. Lead also damages kidneys and the immune system. The effects are the same whether it is breathed or swallowed.

Exposure to lead is more dangerous for young and unborn children. Unborn children can be exposed to lead through their mothers. Harmful effects include premature births, smaller babies, decreased mental ability in the infant, learning difficulties, and reduced growth in young children. These effects are more common after exposure to high levels of lead.

In adults, lead may decrease reaction time, cause weakness in fingers, wrists, or ankles, and possibly affect the memory. Lead may cause anemia, a disorder of the blood. It can cause abortion and damage the male reproductive system. The connection between these effects and exposure to low levels of lead is uncertain.

How likely is lead to cause cancer?

The Department of Health and Human Services (DHHS) has determined that lead acetate and lead phosphate may reasonably be anticipated to be carcinogens based on studies in animals. There is inadequate evidence to clearly determine lead's carcinogenicity in humans.

Is there a medical test to show whether I've been exposed to lead?

482 280

A blood test is available to measure the amount of lead in your blood and to estimate the amount of your exposure to lead. Blood tests are commonly used to screen children for potential chronic lead poisoning. The Centers for Disease Control and Prevention (CDC) considers children to have an elevated level of lead if the amount in the blood is at least 10 micrograms per deciliter (10 µg/dL). Lead in teeth and bones can be measured with X-rays, but this test is not as readily available.

Has the federal government made recommendations to protect human health?

The Centers for Disease Control and Prevention (CDC) recommends all children be screened for lead poisoning at least once a year. This is especially important for children between 6 months and 6 years old.

The Environmental Protection Agency (EPA) requires lead in air not to exceed 1.5 micrograms per cubic meter (1.5 µg/m³) averaged over 3 months. The sale of leaded gasoline will be illegal as of December 31, 1995. EPA limits lead in drinking water to 15 micrograms per liter (15 µg/L).

The Consumer Product Safety Commission (CPSC), EPA, and the states control the levels of lead in drinking water coolers. Water coolers that release lead must be recalled or repaired. New coolers must be lead-free. Drinking water in schools must be tested for lead.

The Department of Housing and Urban Development (HUD) requires that federally funded housing and renovations, public housing, and Indian housing be tested for lead-based paint hazards. Hazards must be fixed by covering the paint or removing it.

The Occupational Safety and Health Administration (OSHA) limits the concentration of lead in workroom air to 50 µg/cubic meter for an 8-hour workday. If a worker has a blood lead level of 40 µg/dL, OSHA requires that worker to be removed from the workroom.

Glossary

Carcinogenicity:

Ability to cause cancer.

Anemia:

Low numbers of red blood cells or hemoglobin.

Ingesting:

Taking food or drink into your body.

Microgram (µg):

One millionth of a gram.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1993. Toxicological profile for lead. Atlanta: U.S. Department of Health and Human Services, Public Health Service.

Agency for Toxic Substances and Disease Registry (ATSDR). 1993. Case studies in environmental medicine: Lead toxicity. Atlanta: U.S. Department of Health and Human Services, Public Health

482 281

Service.

Where can I get more information?

ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

For more information, contact:

Agency for Toxic Substances and Disease Registry
Division of Toxicology
1600 Clifton Road NE, Mailstop E-29
Atlanta, GA 30333
Phone: 1-800-447-1544
FAX: 404-639-6315



U.S. Department of Health and Human Services
Public Health Service
Agency for Toxic Substances and Disease Registry

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ToxFAQs

482 282

Polycyclic Aromatic Hydrocarbons (PAHs)

CAS# 130498-29-2

September 1996

Polycyclic Aromatic Hydrocarbons

There is no molecular representation since this substance is a mixture of many compounds.



Agency for Toxic Substances and Disease Registry

This fact sheet answers the most frequently asked health questions about polycyclic aromatic hydrocarbons. For more information, you may call the ATSDR Information Center at 1-800-447-1544. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because these substances may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

SUMMARY: Exposure to polycyclic aromatic hydrocarbons usually occurs by breathing air contaminated by wild fires or coal tar, or by eating foods that have been grilled. PAHs have been found in at least 600 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What are polycyclic aromatic hydrocarbons?

Polycyclic aromatic hydrocarbons (PAHs) are a group of over 100 different chemicals that are formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances like tobacco or charbroiled meat. PAHs are usually found as a mixture containing two or more of these compounds, such as soot.

Some PAHs are manufactured. These pure PAHs usually exist as colorless, white, or pale yellow-green solids. PAHs are found in coal tar, crude oil, creosote, and roofing tar, but a few are used in medicines or to make dyes, plastics, and pesticides.

482 283

What happens to PAHs when they enter the environment?

- PAHs enter the air mostly as releases from volcanoes, forest fires, burning coal, and automobile exhaust.
- PAHs can occur in air attached to dust particles.
- Some PAH particles can readily evaporate into the air from soil or surface waters.
- PAHs can break down by reacting with sunlight and other chemicals in the air, over a period of days to weeks.
- PAHs enter water through discharges from industrial and wastewater treatment plants.
- Most PAHs do not dissolve easily in water. They stick to solid particles and settle to the bottoms of lakes or rivers.
- Microorganisms can break down PAHs in soil or water after a period of weeks to months.
- In soils, PAHs are most likely to stick tightly to particles; certain PAHs move through soil to contaminate underground water.
- PAH contents of plants and animals may be much higher than PAH contents of soil or water in which they live.

How might I be exposed to PAHs?

- Breathing air containing PAHs in the workplace of coking, coal-tar, and asphalt production plants; smokehouses; and municipal trash incineration facilities.
- Breathing air containing PAHs from cigarette smoke, wood smoke, vehicle exhausts, asphalt roads, or agricultural burn smoke.
- Coming in contact with air, water, or soil near hazardous waste sites.
- Eating grilled or charred meats; contaminated cereals, flour, bread, vegetables, fruits, meats; and processed or pickled foods.
- Drinking contaminated water or cow's milk.
- Nursing infants of mothers living near hazardous waste sites may be exposed to PAHs through their mother's milk.

How can PAHs affect my health?

Mice that were fed high levels of one PAH during pregnancy had difficulty reproducing and so did their offspring. These offspring also had higher rates of birth defects and lower body weights. It is not known whether these effects occur in people.

Animal studies have also shown that PAHs can cause harmful effects on the skin, body fluids, and ability to fight disease after both short- and long-term exposure. But these effects have not been seen in people.

How likely are PAHs to cause cancer?

The Department of Health and Human Services (DHHS) has determined that some PAHs may reasonably be expected to be carcinogens.

Some people who have breathed or touched mixtures of PAHs and other chemicals for long periods of time have developed cancer. Some PAHs have caused cancer in laboratory animals when they breathed air containing them (lung cancer), ingested them in food (stomach cancer), or had them

applied to their skin (skin cancer).

482 284

Is there a medical test to show whether I've been exposed to PAHs?

In the body, PAHs are changed into chemicals that can attach to substances within the body. There are special tests that can detect PAHs attached to these substances in body tissues or blood. However, these tests cannot tell whether any health effects will occur or find out the extent or source of your exposure to the PAHs. The tests aren't usually available in your doctor's office because special equipment is needed to conduct them.

Has the federal government made recommendations to protect human health?

The Occupational Safety and Health Administration (OSHA) has set a limit of 0.2 milligrams of PAHs per cubic meter of air (0.2 mg/m^3). The OSHA Permissible Exposure Limit (PEL) for mineral oil mist that contains PAHs is 5 mg/m^3 averaged over an 8-hour exposure period.

The National Institute for Occupational Safety and Health (NIOSH) recommends that the average workplace air levels for coal tar products not exceed 0.1 mg/m^3 for a 10-hour workday, within a 40-hour workweek. There are other limits for workplace exposure for things that contain PAHs, such as coal, coal tar, and mineral oil.

Glossary

Carcinogen:

A substance that can cause cancer.

Ingest:

Take food or drink into your body.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1995. Toxicological profile for polycyclic aromatic hydrocarbons. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information?

ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

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U.S. Department of Health and Human Services
Public Health Service
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[Link to ToxFAQs Home Page](#)

[Link to ATSDR Science Corner](#)

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Source: I = RIS H = HEAST A = HEAST Alternate W = Withdrawn from RIS or HEAST E = EPA/NOEA provisional value O = other										Risk-based concentrations				
Chemical	CAS	RfDo	CSFo	RfDI	CSFI	VOC	Tap water	Ambient air	Fish	Soil Industrial	Residential			
ACETALDEHYDE	75070	2E-002	1.00E-001	2.57E-003	7.7E-003	I	1.6E+000 C	8.1E-001 C	2.7E+001 N	4.1E+004 N	1.8E+003 N			
ACETOCHLOR	34259821	1.00E-001					7.3E+002 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N			
ACETONE	67641						1.2E+002 N	6.2E+001 N	2.7E+001 N	4.1E+004 N	1.8E+003 N			
ACETONITRILE	79058	1.00E-001		1.7E-002			4.2E+002 N	2.1E-002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N			
ACETOPHENONE	98882	2.00E-002	H	5.70E-006	W		4.2E+002 N	2.1E-002 N	2.7E+001 N	4.1E+004 N	1.8E+003 N			
ACROLEIN	107028	2.00E-004	I	4.50E+000	I		1.5E-002 C	1.4E-003 C	7.0E-004 C	1.3E+000 C	1.4E-001 C			
ACRYLAMIDE	79081	1.00E-003	H	5.40E-001	I		3.7E-002 C	2.6E-002 C	5.8E-003 C	1.1E+001 C	1.2E+000 C			
ACRYLONITRILE	107131	1.00E-002	I	8.00E-002	H		8.4E-001 C	7.8E-002 C	3.9E-002 C	7.2E+001 C	8.0E+000 C			
ALACHLOR	15972508	1.50E-001	I				5.5E+003 N	5.5E+002 N	2.0E+002 N	3.1E+005 N	1.2E+004 N			
ALAR	1598846	1.00E-003	I				3.7E+001 N	3.7E+000 N	1.4E+000 N	2.0E+003 N	7.8E+001 N			
ALDICARB	116063	3.00E-005	I	1.70E+001	I		3.7E+001 N	3.7E+000 N	1.4E+000 N	2.0E+003 N	7.8E+001 N			
ALDRIN	309002	1.00E-000	E	1.00E-003	E		3.9E-003 C	3.7E-004 C	1.9E-004 C	3.4E-001 C	3.8E-002 C			
ALUMINUM	7429805	6.00E-005	E				2.2E+000 N	2.2E-001 N	8.1E-002 N	1.2E+002 N	4.7E+000 N			
AMINODINITROTOLUENES	504245	2.00E-005	H				7.3E-001 N	7.3E-002 N	2.7E-002 N	4.1E+001 N	1.6E+000 N			
AMINOPYRIDINE	7664417	7.00E-003	E	5.70E-003	I		1.2E+001 C	1.0E+000 N	5.5E-001 C	1.0E+003 C	1.1E+002 C			
AMMONIA	62533	4.00E-004	I				1.8E+000 N	1.5E+000 N	5.4E-001 N	8.2E+002 N	3.1E+001 N			
ANILINE	740360	5.00E-004	H				1.5E-001 N	1.5E+000 N	5.4E-001 N	8.2E+002 N	3.1E+001 N			
ANTIMONY	1314609	4.00E-004	H				1.5E-001 N	1.5E+000 N	5.4E-001 N	8.2E+002 N	3.1E+001 N			
ANTIMONY PENTOXIDE	1332816	4.00E-004	H				1.5E-001 N	1.5E+000 N	5.4E-001 N	8.2E+002 N	3.1E+001 N			
ANTIMONY TETROXIDE	1308644	4.00E-004	H				1.5E-001 N	1.5E+000 N	5.4E-001 N	8.2E+002 N	3.1E+001 N			
ANTIMONY TRIOXIDE	7440382	3.00E-004	I	1.50E+000	I		4.5E-002 C	4.1E-004 C	2.1E-003 C	3.8E+000 C	4.3E-001 C			
ARSENIC	7784421	9.00E-003	I	1.40E-005	I		1.0E-001 N	5.1E-002 N						
ARSINE	76578148	3.50E-002	I				3.3E+002 N	3.3E+001 N	1.2E+001 N	1.8E+004 N	7.0E+002 N			
ASSURE	1912249	1.10E-001	I				3.0E-001 C	2.8E-002 C	1.4E-002 C	2.9E+001 C	2.9E+000 C			
ATRAZINE	103333	7.00E-002	I	1.40E-004	A		6.1E-001 C	5.7E-002 C	2.9E-002 C	5.2E+001 C	5.8E+000 C			
AZOBENZENE	7440333	4.00E-003	I				2.6E+003 N	5.1E-001 N	9.5E+001 N	1.4E+005 N	5.5E+003 N			
BARIUM	114261	2.50E-002	I				1.5E-002 N	9.1E+001 N	3.4E+001 N	5.1E+004 N	2.0E+003 N			
BAYTHROID	68359375	3.00E-002	I				1.1E+003 N	1.1E+002 N	4.1E+001 N	6.1E+004 N	2.3E+003 N			
BENTAZON	25057890	1.00E-001	I				3.7E+003 N	3.7E+002 N	1.4E-002 N	2.0E+005 N	7.8E+003 N			
BENZALDEHYDE	100527	3.00E-003	E	2.80E-002	I		3.6E-001 C	2.2E-001 C	1.1E-001 C	2.0E+002 C	2.2E+001 C			
BENZENE	71432	1.00E-005	H				6.1E-002 N	3.7E-002 N	1.4E-002 N	2.0E+005 N	7.8E+003 N			
BENZENETHIOL	108965	3.00E-003	I	2.30E+002	I		2.9E-004 C	2.7E-005 C	1.4E-005 C	2.5E-002 C	2.8E-003 C			
BENZIDINE	92875	4.00E+000	I				1.5E+005 N	1.5E+004 N	5.4E+003 N	8.2E+006 N	3.1E+005 N			
BENZOIC ACID	65850	3.00E-001	H				1.1E+004 N	1.1E+003 N	4.1E+002 N	6.1E+005 N	2.3E+004 N			
BENZYL ALCOHOL	100516	2.00E-003	I	5.7E-006	I		6.2E-002 C	3.7E-002 C	1.9E-002 C	3.4E+001 C	3.8E+000 C			
BENZYL CHLORIDE	100447	2.00E-003	I				7.3E+001 N	7.3E-004 C	2.7E+000 N	4.1E+003 N	1.6E+002 N			
BERYLLIUM	7440417	5.00E-002	I				3.0E+002 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N			
BIPHENYL	82524	4.00E-002	I	1.10E+000	I		9.6E+003 C	5.7E-003 C	5.2E+000 C	5.8E+001 C	9.1E+000 C			
BIS(2-CHLOROETHYL)ETHER	111444	4.00E-002	I	7.00E-002	H		2.6E-001 C	1.8E-001 C	4.5E-002 C	8.2E+001 C	9.1E+000 C			
BIS(2-CHLOROISOPROPYL)ETHER	108601	2.00E-002	I	2.20E+002	I		4.8E-005 C	2.8E-005 C	1.4E-005 C	2.0E-002 C	2.9E-003 C			
BIS(CHLOROMETHYL)ETHER	542881	2.00E-002	I	1.40E-002	E		4.8E+000 C	4.5E-001 C	2.3E-001 C	4.1E+002 C	4.6E-001 C			
BIS(2-ETHYLHEXYL)PHTHALATE	117217	9.00E-002	I	5.70E-003	H		3.3E+003 N	2.1E+001 N	1.2E+002 N	1.8E+005 N	7.0E+003 N			
BORON	7440428													

Basic: C = Carcinogenic effects N = Noncarcinogenic effects I = RBC at H of 0.1 = RBC-C E = EPA-NCEA provisional value O = other											
Chemical	CAS	RfD ₀ mg/kg/d	CSF ₀ 1/mg/kg/d	RfD ₁ mg/kg/d	CSF ₁ 1/mg/kg/d	VOC	Tap water ug/l	Ambient air ug/m3	Fish mg/kg	Soil Industrial mg/kg	Residential mg/kg
BROMODICHLOROMETHANE	75274	2.00E-002	6.20E-002	8.6E-004	1.10E-001	H	1.7E-001	1.0E-001	5.1E-002	9.2E+001	1.0E+001
BROMOETHYLENE	599602	2.00E-002	7.90E-003	8.6E-004	3.90E-003	I	8.5E+000	1.6E+000	4.0E-001	7.2E+002	8.1E+001
BROMOFORM	75252	1.40E-003	1.40E-003	1.40E-003	1.40E-003	I	8.5E+000	5.1E+000	1.9E+000	2.9E+003	1.1E+002
BROMOMETHANE	74839	5.00E-003	5.00E-003	1.40E-003	1.80E+000	N	1.8E+002	1.8E+001	6.8E+000	1.0E+004	3.9E+002
BROMOPHOS	2104963	1.0E-001	1.0E-001	1.80E+000	1.80E+000	H	7.0E-003	3.5E-003	3.5E-003	3.5E-003	3.5E-003
1,3-BUTADIENE	106980	1.00E-001	1.00E-001	1.00E-001	1.00E-001	H	3.7E+003	3.7E+002	1.4E+002	2.0E+005	7.8E+003
1-BUTANOL	71363	2.00E-001	2.00E-001	2.00E-001	2.00E-001	I	7.3E+003	7.3E+002	2.7E+002	4.1E+005	1.6E+004
BUTYLBENZYLPHthalATE	85887	5.00E-002	5.00E-002	5.00E-002	5.00E-002	I	1.8E+003	1.8E+002	6.8E+001	1.0E+005	3.9E+003
BUTYLATE	2008415	1.00E-002	1.00E-002	1.00E-002	1.00E-002	I	6.1E+001	3.7E+001	1.4E+001	2.0E+004	7.8E+002
N-BUTYLBENZENE	104518	1.00E-002	1.00E-002	1.00E-002	1.00E-002	I	6.1E+001	3.7E+001	1.4E+001	2.0E+004	7.8E+002
SEC-BUTYLBENZENE	135988	1.00E-002	1.00E-002	1.00E-002	1.00E-002	I	6.1E+001	3.7E+001	1.4E+001	2.0E+004	7.8E+002
TERT-BUTYLBENZENE	98066	1.00E-002	1.00E-002	1.00E-002	1.00E-002	I	6.1E+001	3.7E+001	1.4E+001	2.0E+004	7.8E+002
CADMIUM-WATER	7440439	5.00E-004	5.00E-004	5.00E-004	5.00E-004	I	1.8E+001	9.9E-004	6.8E-001	1.0E+003	3.9E+001
CADMIUM-FOOD	7440439	1.00E-003	1.00E-003	1.00E-003	1.00E-003	I	3.7E+001	9.9E-004	1.4E+000	2.0E+003	7.8E+001
CAPROLACTAM	105602	5.00E-001	5.00E-001	5.00E-001	5.00E-001	I	1.8E+004	1.8E+003	6.8E+002	1.0E+006	3.9E+004
CARBARYL	63252	1.00E-001	1.00E-001	1.00E-001	1.00E-001	I	3.7E+003	3.7E+002	1.4E+002	2.0E+005	7.8E+003
CARBON DISULFIDE	75150	1.00E-001	1.00E-001	2.00E-001	2.00E-001	I	1.0E+003	7.3E+002	1.4E+002	2.0E+005	7.8E+003
CARBON TETRACHLORIDE	56235	7.00E-004	1.30E-001	5.71E-004	5.30E-002	I	1.6E-001	1.2E-001	2.4E-002	4.4E+001	4.9E+000
CARBOSULFAN	55285148	1.00E-002	1.00E-002	1.00E-002	1.00E-002	I	3.7E+002	3.7E+001	1.4E+001	2.0E+004	7.8E+002
CHLORAL	75876	2.00E-003	2.00E-003	2.00E-003	2.00E-003	I	1.7E-001	1.8E-002	7.9E-003	1.4E+001	1.6E+000
CHLORANIL	118752	5.00E-004	3.5E-001	2.00E-004	3.5E-001	I	1.9E-001	1.8E-002	9.0E-003	1.8E+001	1.8E+000
CHLORDANE	57749	1.00E-001	1.00E-001	1.00E-001	1.00E-001	I	6.1E+002	3.7E+002	1.4E+002	2.0E+005	7.8E+003
CHLORINE	7782505	2.00E-003	2.00E-003	2.00E-003	2.00E-003	I	4.2E-001	2.1E-001	2.1E-001	2.1E-001	2.1E-001
CHLORINE DIOXIDE	10049044	2.00E-003	2.00E-003	2.00E-003	2.00E-003	I	7.3E+001	7.3E+000	2.7E+000	4.1E+003	1.6E+002
CHLOROACETIC ACID	79118	4.00E-003	4.00E-003	4.00E-003	4.00E-003	I	1.5E+002	1.5E+001	5.4E+000	8.2E+003	3.1E+002
4-CHLOROANILINE	106478	2.00E-002	2.00E-002	1.7E-002	1.7E-002	E	1.1E+002	6.2E+001	2.7E+001	4.1E+004	1.6E+003
CHLOROBENZENE	106907	2.00E-002	2.00E-002	2.00E-002	2.00E-002	I	2.5E-001	2.3E-002	1.2E+002	2.1E+001	2.4E+000
CHLOROBENZILATE	510156	2.00E-002	2.00E-002	2.00E-002	2.00E-002	H	7.3E+003	7.3E+002	2.7E+002	4.1E+005	1.6E+004
P-CHLOROBENZOIC ACID	74113	2.00E-001	2.00E-001	2.00E-001	2.00E-001	I	1.4E+001	7.3E+000	2.7E+001	4.1E+004	1.6E+003
2-CHLORO-1,3-BUTADIENE	126998	2.00E-002	2.00E-002	2.00E-002	2.00E-002	H	2.4E+003	1.5E+003	5.4E+002	8.2E+005	3.1E+004
1-CHLOROBUTANE	109583	4.00E-001	4.00E-001	4.00E-001	4.00E-001	H	2.4E+003	1.5E+003	5.4E+002	8.2E+005	3.1E+004
1-CHLORO-1,1-DIFLUOROETHANE	75683	4.00E-001	4.00E-001	4.00E-001	4.00E-001	I	1.0E+005	5.1E+004	5.1E+004	5.1E+004	5.1E+004
CHLORODIFLUOROMETHANE	75456	4.00E-001	4.00E-001	4.00E-001	4.00E-001	I	1.0E+005	5.1E+004	5.1E+004	5.1E+004	5.1E+004
CHLOROETHANE	75003	4.00E-001	4.00E-001	4.00E-001	4.00E-001	I	3.6E+000	2.2E+000	1.1E+000	2.0E+003	2.2E+002
CHLOROFORM	67663	1.00E-002	1.00E-002	1.00E-002	1.00E-002	E	1.5E-001	7.7E-002	5.2E-001	9.4E+002	1.0E+002
CHLOROMETHANE	74873	5.00E-001	5.00E-001	5.00E-001	5.00E-001	H	2.1E+000	1.8E+000	2.4E-001	4.4E+002	4.9E+001
4-CHLORO-2-METHYLANILINE	95592	8.00E-002	8.00E-002	8.00E-002	8.00E-002	I	1.2E-001	1.1E-002	5.4E-003	9.9E+000	1.1E+000
BETA-CHLORONAPHTHALENE	81597	8.00E-002	8.00E-002	8.00E-002	8.00E-002	I	4.9E+002	2.9E+002	1.1E+002	1.6E+005	6.3E+003
O-CHLORONITROBENZENE	88733	1.00E-002	1.00E-002	1.00E-002	1.00E-002	I	4.2E-001	2.5E-001	1.3E-001	2.3E+002	2.6E+001
P-CHLORONITROBENZENE	100005	5.00E-003	5.00E-003	5.00E-003	5.00E-003	I	5.9E+001	3.5E-001	1.8E-001	3.2E+002	3.5E+001
2-CHLOROPHENOL	95578	5.00E-003	5.00E-003	5.00E-003	5.00E-003	I	3.0E+001	1.8E+001	6.8E+000	1.0E+004	3.9E+002
2-CHLOROPROPANE	75296	2.00E-002	2.00E-002	2.00E-002	2.00E-002	H	2.1E+002	1.1E+002	1.1E+002	1.1E+002	1.1E+002
O-CHLOROTOLUENE	95498	3.00E-003	3.00E-003	3.00E-003	3.00E-003	I	1.1E+002	1.1E+001	4.1E+000	6.1E+003	2.3E+002
CHLOROPYRIFOS	2921852	1.00E-002	1.00E-002	1.00E-002	1.00E-002	H	3.7E+002	3.7E+001	1.4E+001	2.0E+004	7.8E+002
CHLOROPYRIFOS-METHYL	5598190	1.00E-002	1.00E-002	1.00E-002	1.00E-002	H	3.7E+002	3.7E+001	1.4E+001	2.0E+004	7.8E+002

Source: I = IHS H = HEAST A = HEAST Asbestos W = Withdrawn from IHS or HEAST E = EPA-NCEA provisional value O = other											
Chemical	CAS	RfD mg/kg/d	CSFo 1/mg/kg/d	RfDi mg/kg/d	CSFi 1/mg/kg/d	VOC	Risk-based concentrations				
							Tap water ug/l	Ambient air ug/m ³	Fish mg/kg	Soil Industrial mg/kg	Residential mg/kg
CHROMIUM III	16085831	1.50E+000 I					5.5E+004 N	6.5E+003 N	2.0E+003 N	3.1E+008 N	1.2E+005 N
CHROMIUM VI	18540289	3.00E+003 I					1.1E+002 N	1.5E+004 C	4.1E+000 N	6.1E+003 N	2.3E+002 N
COBALT	7440484	6.00E+002 E					2.2E+003 N	2.2E+002 N	8.1E+001 N	1.2E+005 N	4.7E+003 N
COKE OVEN EMISSIONS (COAL TAR)	8007452				2.2 I						
COPPER	7440508	4.00E+002 H	1.90E+000 H				1.5E+003 N	1.5E+002 N	5.4E+001 N	8.2E+004 N	3.1E+003 N
CROTONALDEHYDE	123739						5.6E+003 C	3.3E+003 C	1.7E+003 C	3.0E+000 C	3.4E+001 C
CUMENE	98828	1.00E+001 I		1.10E+001 I		Y	6.6E+002 N	4.0E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N
CYANIDE (FREE)	57125	2.00E+002 I				Y	7.3E+002 N	7.3E+002 N	2.7E+001 N	4.1E+004 N	1.6E+003 N
CALCIUM CYANIDE	592018	4E+002 I					1.5E+003 N	1.5E+002 N	5.4E+001 N	8.2E+004 N	3.1E+003 N
COPPER CYANIDE	544923	5.00E+003 I					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N
CYANAZINE	21725482	2.00E+003 H	8.40E+001 H				8.0E+002 C	7.5E+003 C	3.8E+003 C	6.8E+000 C	7.6E+001 C
CYANOGEN	460185	4.00E+002 I				Y	2.4E+002 N	1.5E+002 N	5.4E+001 N	8.2E+004 N	3.1E+003 N
CYANOGEN BROMIDE	506863	9.00E+002 I					3.3E+003 N	3.3E+002 N	1.2E+002 N	1.8E+005 N	7.0E+003 N
CYANOGEN CHLORIDE	506774	5.00E+002 I					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N
HYDROGEN CYANIDE	74908	2.00E+002 I					6.2E+000 N	3.1E+000 N	2.7E+001 N	4.1E+004 N	1.6E+003 N
POTASSIUM CYANIDE	151508	5.00E+002 I					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N
POTASSIUM SILVER CYANIDE	506816	2.00E+001 I				Y	7.3E+003 N	7.3E+002 N	2.7E+002 N	4.1E+005 N	1.6E+004 N
SILVER CYANIDE	506849	1.00E+001 I					3.7E+003 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N
SODIUM CYANIDE	143339	4.00E+002 I					1.5E+003 N	1.5E+002 N	5.4E+001 N	8.2E+004 N	3.1E+003 N
THIOCYANATE	557211	1.00E+001 E					3.7E+003 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N
ZINC CYANIDE	108941	5.00E+002 I					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N
CYCLOHEXANONE	6005558	5.00E+000 I					1.8E+005 N	1.8E+004 N	6.8E+003 N	1.0E+007 N	3.9E+005 N
CYHALOTHRINKARATE	52315078	5.00E+003 I					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N
CYPERMETHRIN	1861321	1.00E+002 I					3.7E+002 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N
DACHTAL	75990	3.00E+002 I					1.1E+003 N	1.1E+002 N	4.1E+001 N	6.1E+004 N	2.3E+003 N
DALAPON	72548		2.40E+001 I				2.8E+001 C	2.6E+002 C	1.3E+002 C	2.4E+001 C	2.7E+000 C
DDE	72559		3.40E+001 I				2.0E+001 C	1.8E+002 C	9.3E+003 C	1.7E+001 C	1.9E+000 C
DDT	50293	5.00E+004 I	3.40E+001 I		3.40E+001 I		2.0E+001 C	1.8E+002 C	9.3E+003 C	1.7E+001 C	1.9E+000 C
DIAZINON	333415	9.00E+004 H					3.3E+001 N	3.3E+000 N	1.2E+000 N	1.8E+003 N	7.0E+001 N
DIBENZOFURAN	132649	4.00E+003 E				Y	2.4E+001 N	1.5E+001 N	5.4E+000 N	8.2E+003 N	3.1E+002 N
1,4-DIBROMOBENZENE	106376	1.00E+002 I					3.7E+002 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N
DIBROMOCHLOROMETHANE	124481	2.00E+002 I	8.40E+002 I			Y	1.3E+001 C	7.5E+002 C	3.8E+002 C	6.8E+001 C	7.6E+000 C
1,2-DIBROMO-3-CHLOROPROPANE	96128	1.40E+000 H	5.70E+005 I	2.40E+003 H	2.40E+003 H	Y	4.7E+002 C	2.1E+001 N	2.3E+003 C	4.1E+000 C	4.6E+001 C
1,2-DIBROMOETHANE	106834	8.50E+001 I	5.70E+005 H	7.60E+001 I	7.60E+001 I	Y	7.5E+004 C	8.2E+003 C	3.7E+005 C	6.7E+002 C	7.5E+003 C
DIBUTYLPHthalate	84742	1.00E+001 I					3.7E+003 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N
DICAMBA	191809	3.00E+002 I					1.1E+003 N	1.1E+002 N	4.1E+001 N	6.1E+004 N	2.3E+003 N
1,2-DICHLOROBENZENE	95501	8.00E+002 I				Y	6.4E+001 N	3.3E+001 N	1.2E+002 N	1.8E+005 N	7.0E+003 N
1,3-DICHLOROBENZENE	541731	9.00E+004 E				Y	5.5E+000 N	3.3E+000 N	1.2E+000 N	1.8E+003 N	7.0E+001 N
1,4-DICHLOROBENZENE	106376	3.00E+002 E	2.40E+002 H	2.29E+001 I	2.2E+002 E	Y	4.7E+001 C	2.8E+001 C	1.3E+001 C	2.4E+002 C	2.7E+001 C
3,3'-DICHLOROBENZIDINE	91541	4.50E+001 I					1.5E+001 C	1.4E+002 C	7.0E+003 C	1.3E+001 C	1.4E+000 C
1,4-DICHLORO-2-BUTENE	764410				9.30E+000 H	Y	1.3E+003 C	6.7E+004 C			
DICHLORODIFLUOROMETHANE	75718	2.00E+001 I		5.00E+002 A		Y	3.5E+002 N	1.8E+002 N	2.7E+002 N	4.1E+005 N	1.6E+004 N
1,1-DICHLOROETHANE	75343	1.00E+001 H				Y	8.0E+002 N	5.1E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N
1,2-DICHLOROETHANE	107062	3.00E+002 E	9.10E+002 I	1.40E+003 E	9.10E+002 I	Y	1.3E+001 C	5.9E+002 C	2.5E+002 C	5.2E+001 C	5.9E+000 C

Source: 1 = RfD; H = HEAST; A = HEAST Alternate; W = Withdrawn from RfD or HEAST
 E = EPA-AECA provisional value; O = other

Basic C = Carcinogenic effects; N = Noncarcinogenic effects; 1 = RfD at HI of 0.1 < RBC-c
 Risk-based concentrations

Basis: C = Carcinogenic effects; N = Noncarcinogenic effects; I = RBC at H of 0.1 < RBC < 1 Risk-based concentrations											
Chemical	CAS	RfDo mg/kg/d	CSFo 1/mg/kg/d	RfDi mg/kg/d	CSFi 1/mg/kg/d	VOC	Tap water ug/l	Ambient air ug/m3	Fish mg/kg	Soil Industrial mg/kg	Residential mg/kg
1,1-DICHLOROETHENE CIS-1,2-DICHLOROETHENE TRANS-1,2-DICHLOROETHENE TOTAL 1,2-DICHLOROETHENE 2,4-DICHLOROPHENOL 2,4-D	75354	9.00E-003	6.00E-001		1.75E-001	I	4.4E-002	3.6E-002	5.3E-003	9.5E+000	1.1E+000
	165592	1.00E-002	H			Y	6.1E+001	3.7E+001	1.4E+001	2.0E+004	7.8E+002
	156505	2.00E-002	I			Y	1.2E+002	7.3E+001	2.7E+001	4.1E+004	1.6E+003
	540580	9.00E-003	H			Y	5.5E+001	3.3E+001	1.2E+001	1.8E+004	7.0E+002
	120832	3.00E-003	I				6.1E+002	1.1E+001	4.1E+000	6.1E+003	2.3E+002
2,4-DICHLOROPHENOL 2,4-D 4-(2,4-DICHLOROPHENOXY)BUTYRIC ACID 1,2-DICHLOROPROPANE 2,3-DICHLOROPROPANOL 1,3-DICHLOROPROPENE DICHLOROVOS DICOFOL	94757	1.00E-002	I				3.7E+002	3.7E+001	1.4E+001	2.0E+004	7.8E+002
	94828	8E-003	I	6.80E-002	H	1.14E-003	I	2.9E+002	1.1E+001	1.6E+004	6.3E+002
	78875	3.00E-003	I			Y	1.6E+001	9.2E-002	4.8E-002	8.4E+001	9.4E+000
	618239	3.00E-004	I	1.80E-001	H	5.71E-003	I	1.1E+002	1.1E+001	6.1E+003	2.3E+002
	542758	5E-004	I	0.29	I	1.43E-004	I	7.7E-002	4.8E-002	3.2E+001	3.3E+000
DICHLOROVOS DICOFOL DICYCLOPENTADIENE DIELDRIN DIESEL EMISSIONS DIETHYLPHTHALATE DIETHYLENE GLYCOL MONOETHYL ETHER DIETHYLENE GLYCOL MONOETHYL ETHER DI(2-ETHYLHEXYL)ADIPATE DIETHYLSTILBESTROL DIFENZOQUAT (AVENTE)	62737	5E-004	I	4.4E-001	W		1.5E-001	1.4E-002	7.2E-003	1.3E+001	1.5E+000
	115322	3E-002	H	6.00E-005	A		4.4E+001	2.2E+001	4.1E+001	6.1E+004	2.3E+003
	77738	5.00E-005	I	1.60E+001	I		4.2E-003	3.9E-004	2.0E-004	3.6E+001	4.0E-002
	60571	8.00E-001	I	1.40E-003	I		2.9E+004	2.9E+003	1.1E+003	1.6E+006	6.3E+004
	84662	8.00E-001	I			5.70E-003	H	2.1E+001	2.7E+003	4.1E+006	1.6E+005
DIETHYLENE GLYCOL MONOETHYL ETHER DIETHYLENE GLYCOL MONOETHYL ETHER DI(2-ETHYLHEXYL)ADIPATE DIETHYLSTILBESTROL DIFENZOQUAT (AVENTE) 1,1-DIFLUOROETHANE DISOPROPYL METHYLPHOSPHONATE (DIMP) 3,3-DIMETHOXYBENZIDINE 3,3-DIMETHOXYBENZIDINE DIMETHYLAMINE 2,4-DIMETHYLANILINE HYDROCHLORIDE 2,4-DIMETHYLANILINE N,N-DIMETHYLANILINE 3,3-DIMETHYLBENZIDINE 1,1-DIMETHYLHYDRAZINE 1,2-DIMETHYLHYDRAZINE 2,4-DIMETHYLPHENOL 2,6-DIMETHYLPHENOL 3,4-DIMETHYLPHENOL DIMETHYLPHTHALATE 1,2-DINITROBENZENE 1,3-DINITROBENZENE 1,4-DINITROBENZENE 4,6-DINITRO-O-CYCLOHEXYL PHENOL 4,6-DINITRO-2-METHYLPHENOL 2,4-DINITROPHENOL DINITROTOLUENE MIX 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE	11900	2.00E-000	H				7.3E+004	7.3E+003	2.7E+003	4.1E+006	1.6E+005
	103231	6.00E-001	I	1.20E-003	I		5.6E+001	5.2E+000	2.6E+000	4.8E+003	5.3E+002
	58531	4.70E-003	H				1.4E+005	1.3E+006	6.7E+007	1.2E+003	1.4E+004
	43222488	8.00E-002	I				2.8E+003	2.9E+002	1.1E+002	1.6E+005	6.3E+003
	75376	8.00E-002	I	1.10E+001	I	Y	8.0E+004	4.0E+004	1.1E+002	1.6E+005	6.3E+003
3,3-DIMETHOXYBENZIDINE 3,3-DIMETHOXYBENZIDINE DIMETHYLAMINE 2,4-DIMETHYLANILINE HYDROCHLORIDE 2,4-DIMETHYLANILINE N,N-DIMETHYLANILINE 3,3-DIMETHYLBENZIDINE 1,1-DIMETHYLHYDRAZINE 1,2-DIMETHYLHYDRAZINE 2,4-DIMETHYLPHENOL 2,6-DIMETHYLPHENOL 3,4-DIMETHYLPHENOL DIMETHYLPHTHALATE 1,2-DINITROBENZENE 1,3-DINITROBENZENE 1,4-DINITROBENZENE 4,6-DINITRO-O-CYCLOHEXYL PHENOL 4,6-DINITRO-2-METHYLPHENOL 2,4-DINITROPHENOL DINITROTOLUENE MIX 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE	1445756	1.40E-002	H			Y	2.9E+003	2.9E+002	1.1E+002	1.6E+005	6.3E+003
	119804	5.80E-001	H	5.70E-006	W		4.8E+000	4.5E+001	2.3E-001	4.1E+002	4.6E+001
	124403	2.00E-003	I				4.2E-002	2.1E-002	5.4E-003	9.9E+000	1.1E+000
	21435864	5.80E-001	H				1.2E-001	1.1E-002	4.2E-003	7.6E+000	8.5E-001
	85581	7.50E-001	H				8.9E-002	8.3E-003	4.2E-003	7.6E+000	8.5E-001
N,N-DIMETHYLANILINE 3,3-DIMETHYLBENZIDINE 1,1-DIMETHYLHYDRAZINE 1,2-DIMETHYLHYDRAZINE 2,4-DIMETHYLPHENOL 2,6-DIMETHYLPHENOL 3,4-DIMETHYLPHENOL DIMETHYLPHTHALATE 1,2-DINITROBENZENE 1,3-DINITROBENZENE 1,4-DINITROBENZENE 4,6-DINITRO-O-CYCLOHEXYL PHENOL 4,6-DINITRO-2-METHYLPHENOL 2,4-DINITROPHENOL DINITROTOLUENE MIX 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE	121897	2.00E-003	I				7.3E+001	7.3E+000	2.7E+000	4.1E+003	1.6E+002
	119837	9.20E+000	H			3.50E+000	W	7.3E-003	6.8E-004	3.4E+004	6.2E-001
	57147	2.60E+000	W			3.70E+001	W	1.8E-003	1.2E-003	2.2E+000	2.5E-001
	540738	2.00E-002	I	3.70E+001	W		1.8E-003	1.7E-004	8.5E-005	1.5E-001	1.7E-002
	105579	6.00E-004	I				7.3E+002	7.3E+001	2.7E+001	4.1E+004	1.6E+003
2,6-DIMETHYLPHENOL 3,4-DIMETHYLPHENOL DIMETHYLPHTHALATE 1,2-DINITROBENZENE 1,3-DINITROBENZENE 1,4-DINITROBENZENE 4,6-DINITRO-O-CYCLOHEXYL PHENOL 4,6-DINITRO-2-METHYLPHENOL 2,4-DINITROPHENOL DINITROTOLUENE MIX 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE	578261	1.00E-003	I				2.2E+001	2.2E+000	8.1E-001	1.2E+003	4.7E+001
	95659	1.00E-003	I				3.7E+001	3.7E+000	1.4E+000	2.0E+003	7.8E+001
	131513	1.00E+001	W				3.7E+005	3.7E+004	1.4E+004	2.0E+007	7.8E+005
	528280	4.00E-004	H				1.5E+001	1.5E+000	5.4E-001	8.2E+002	3.1E+001
	99550	1.00E-004	I				3.7E+000	3.7E-001	1.4E-001	2.0E+002	7.8E+000
1,4-DINITROBENZENE 4,6-DINITRO-O-CYCLOHEXYL PHENOL 4,6-DINITRO-2-METHYLPHENOL 2,4-DINITROPHENOL DINITROTOLUENE MIX 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE	100254	4.00E-004	H				1.5E+001	1.5E+000	5.4E-001	8.2E+002	3.1E+001
	131895	2.00E-003	I				7.3E+001	7.3E+000	2.7E+000	4.1E+003	1.6E+002
	534521	1.00E-004	E				3.7E+000	3.7E-001	1.4E-001	2.0E+002	7.8E+000
	51285	2.00E-003	I	6.80E-001	I		9.8E-002	9.2E-003	4.6E-003	8.4E+000	9.4E-001
DINITROTOLUENE MIX 2,4-DINITROTOLUENE 2,6-DINITROTOLUENE	121142	2.00E-003	I				7.3E+001	7.3E+000	2.7E+000	4.1E+003	1.6E+002
	606202	1.00E-003	H				3.7E+001	3.7E+000	1.4E+000	2.0E+003	7.8E+001
	88857	1.00E-003	I				3.7E+001	3.7E+000	1.4E+000	2.0E+003	7.8E+001

Source: I = IRIS; H = HEAST; A = HEAST Alternate; W = Withdrawn from IRIS or HEAST

E = EPA-NCEA provisional; I, H, A, W, O = other

Source: I = IRIS; H = HEAST; A = RLAST; Alternate W = Withdrawn from IRIS or HEAST E = EPA-NCEA provisional value; O = other										Risk-based concentrations				
Basic: C = Carcinogenic effects; N = Noncarcinogenic effects; 1 = RBC at HI of 0.1 x RBC-e										Risk-based concentrations				
Chemical	CAS	I	RfDo	CSFo	RfDI	CSFI	VOC	Tap water ug/l	Ambient air ug/m3	Fish mg/kg	Soil Industrial mg/kg	Residential mg/kg		
DIOCTYLPHTHALATE	117840		2.00E-002 H					7.3E+002 N	7.3E+001 N	2.7E+001 N	4.1E+004 N	1.5E+003 N		
1,4-DIOXANE	123911			1.10E-002 I				6.1E+000 C	6.7E+001 C	2.9E+001 C	5.2E+002 C	5.8E+001 C		
DIPHENYLAMINE	122394		2.50E-002 I					9.1E+002 N	8.1E+001 N	3.4E+001 N	5.1E+004 N	2.0E+003 N		
1,2-DIPHENYLHYDRAZINE	122667		2.20E-003 I	8.00E-001 I				8.4E+002 C	7.8E+003 C	3.9E+003 C	7.2E+000 C	8.0E+001 C		
DIQUAT	85007		4.00E-005 I					8.0E+001 N	8.0E+000 N	3.0E+000 N	4.5E+003 N	1.7E+002 N		
"DISULFOTON	298044		1.00E-002 I					1.5E+000 N	1.5E+001 N	5.4E+002 N	8.2E+001 N	3.1E+000 N		
1,4-DITHIANE	505293		2.00E-003 I					3.7E+002 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N		
DIURON	330541		2.00E-003 I					7.3E+000 N	7.3E+000 N	2.7E+000 N	4.1E+003 N	1.6E+002 N		
ENDOSULFAN	115297		6.00E-003 I					2.2E+002 N	2.2E+001 N	8.1E+000 N	1.2E+004 N	4.7E+002 N		
ENDRIN	72208		3.00E-004 I					1.1E+001 N	1.1E+000 N	4.1E+001 N	6.1E+002 N	2.3E+001 N		
"EPCHCLOHODRIN	106898		2.00E-003 H	9.90E-003 I	2.86E-004 I	4.20E-003 I	Y	2.0E+000 N	1.0E+000 N	3.2E+001 C	5.8E+002 C	6.5E+001 C		
ETHION	563122		5.00E-004 I					1.8E+001 N	1.8E+000 N	6.8E+001 N	1.0E+003 N	3.9E+001 N		
2-ETHOXYETHANOL	110805		4.00E-001 H		5.70E-002 I			1.5E+004 N	2.1E+002 N	5.4E+002 N	8.2E+005 N	3.1E+004 N		
ETHYL ACETATE	141786		9.00E-001 I				Y	5.5E+003 N	3.3E+003 N	1.2E+003 N	1.8E+006 N	7.0E+004 N		
ETHYLBENZENE	100414		1.00E-001 I		2.90E-001 I		Y	1.3E+003 N	1.1E+003 N	1.4E+002 N	2.0E+005 N	7.8E+003 N		
ETHYLENE DIAMINE	107153		2.00E-002 H					7.3E+002 N	7.3E+001 N	2.7E+001 N	4.1E+004 N	1.6E+003 N		
ETHYLENE GLYCOL	107211		2.00E+000 I					7.3E+004 N	7.3E+003 N	2.7E+003 N	4.1E+006 N	1.6E+005 N		
ETHYLENE GLYCOL MONOBUTYL ETHER	111782				5.70E-003 H				2.1E+001 N					
"ETHYLENE OXIDE	75218		1.00E+000 H			3.50E-001 H	Y	2.3E+002 C	1.8E+002 C	3.2E+003 C	5.7E+000 C	6.4E+001 C		
ETHYLENE THIOUREA	96457		8.00E-005 I	1.1E-001 H				6.1E+001 C	5.7E+002 C	2.9E+002 C	5.2E+001 C	5.8E+000 C		
ETHYL ETHER	60297		2.00E-001 I				Y	1.2E+003 N	7.3E+002 N	2.7E+002 N	4.1E+005 N	1.6E+004 N		
ETHYL METHACRYLATE	97632		9.00E-002 H				Y	5.5E+002 N	3.3E+002 N	1.2E+002 N	1.8E+005 N	7.0E+003 N		
FENAMIPHOS	22224926		2.50E-004 I					9.1E+000 N	9.1E+001 N	3.4E+001 N	5.1E+002 N	2.0E+001 N		
FLUOMETURON	2164172		1.30E-002 I					4.7E+002 N	4.7E+001 N	1.8E+001 N	2.7E+004 N	1.0E+003 N		
FLUORINE	7782414		6.00E-002 I					2.2E+003 N	2.2E+002 N	8.1E+001 N	1.2E+005 N	4.7E+003 N		
FOMESAFEN	72178020		2.00E-003 I	1.90E-001 I				3.3E+001 C	3.3E+002 C	1.7E+002 C	3.0E+001 C	3.4E+002 N		
FONOFOS	944229		2.00E-003 I					7.3E+001 N	7.3E+000 N	2.7E+000 N	4.1E+003 N	1.6E+002 N		
FORMALDEHYDE	50009		2.00E-001 I			4.50E-002 I		7.3E+003 N	1.4E+001 C	2.7E+002 N	4.1E+005 N	1.6E+004 N		
FORMIC ACID	64195		2.00E+000 H				Y	7.3E+004 N	7.3E+003 N	2.7E+003 N	4.1E+006 N	1.6E+005 N		
FURAN	110009		1.00E-003 I					6.1E+000 N	3.7E+000 N	1.4E+000 N	2.0E+003 N	7.8E+001 N		
FURAZOLIDONE	67458		3.00E-003 I	3.80E+000 H				1.8E+002 C	1.6E+003 C	8.3E+004 C	1.5E+000 C	1.7E+001 C		
FURFURAL	98011		4.00E-004 I		1.00E-002 A			1.1E+002 N	3.7E+001 N	4.1E+000 N	6.1E+003 N	2.3E+002 N		
GLYCIDALDEHYDE	765344		1.00E-001 I		2.90E-004 H			1.5E+001 N	1.1E+000 N	5.4E+001 N	8.2E+002 N	3.1E+001 N		
GLYPHOSATE	1071836		5.00E-004 I					3.7E+003 N	3.7E+002 N	1.4E+002 N	2.0E+005 N	7.8E+003 N		
"HEPTACHLOR	76448		1.30E-005 I	4.50E+000 I		4.50E+000 I		1.5E+002 C	1.4E+003 C	7.0E+004 C	1.3E+000 C	1.4E+001 C		
"HEPTACHLOR EPOXIDE	1024579		1.30E-005 I	9.10E+000 I		9.10E+000 I		7.4E+003 C	6.9E+004 C	3.5E+004 C	6.3E+001 C	7.0E+002 C		
HEXABROMOBENZENE	87821		2.00E-003 I					7.3E+001 N	7.3E+000 N	2.7E+000 N	4.1E+003 N	1.6E+002 N		
"HEXACHLOROBENZENE	118741		8.00E-004 I	1.60E+000 I		1.60E+000 I		4.2E+002 C	3.8E+003 C	2.0E+003 C	3.6E+000 C	4.0E+001 C		
"HEXACHLOROBUTADIENE	87683		2.00E-004 H	7.80E-002 I		7.80E-002 I		8.8E+001 C	8.0E+002 C	4.0E+002 C	7.3E+001 C	8.2E+000 C		
ALPHA-HCH	319846			6.30E+000 I		6.30E+000 I		1.1E+002 C	8.8E+004 C	5.0E+004 C	9.1E+001 C	1.0E+001 C		
BETA-HCH	319857			1.80E+000 I		1.80E+000 I		3.7E+002 C	3.5E+003 C	1.9E+003 C	3.2E+000 C	3.5E+001 C		
GAMMA-HCH (LINDANE)	58899		3.00E-004 I	1.30E+000 H		1.30E+000 H		5.2E+002 C	4.8E+003 C	2.4E+003 C	4.4E+000 C	4.9E+001 C		
TECHNICAL HCH	608731			1.80E+000 I		1.80E+000 I		3.7E+002 C	3.5E+003 C	1.9E+003 C	3.2E+000 C	3.5E+001 C		
"HEXACHLOROCYCLOPENTADIENE	77474		7.00E-003 I		2.00E-005 H			2.6E+002 N	7.3E+002 N	9.5E+000 N	1.4E+004 N	5.5E+002 N		
HEXACHLORODIBENZODIOXIN MIX	19408743			6.20E+003 I		4.55E+003 I		1.1E+005 C	1.4E+006 C	5.1E+007 C	9.2E+004 C	1.0E+004 C		

Sources: 1 = RIS H = HEAST A = HEAST Alternate W = Withdrawn from RIS or HEAST E = EPA-NCEA provisional value O = other										
Chemical	CAS	RfDo	CSFo	RfDi	CSFI	VOC	Risk-based concentrations			
							Tap water ug/l	Ambient air ug/m3	Fish mg/kg	Soil Industrial mg/kg
1,1-DICHLOROETHANE	7721	1.00E-003	1.40E-002	1.40E-002	1.40E-002		4.8E+000	4.5E-001	2.3E-001	4.1E+002
1,1-DICHLOROETHANE	70304	3.00E-004	1.40E-002	1.40E-002	1.40E-002		1.1E+001	1.1E-002	4.1E-001	6.1E+002
1,1-DICHLOROETHANE	822060	6.00E-002	1.40E-002	1.40E-002	1.40E-002		3.3E+002	2.1E+002	8.1E+001	1.2E+005
1,1-DICHLOROETHANE	110543	4.00E-002	1.40E-002	1.40E-002	1.40E-002		1.5E+003	5.1E+000	5.4E+001	8.2E+004
1,1-DICHLOROETHANE	591786	3.00E-002	1.40E-002	1.40E-002	1.40E-002		1.2E+003	1.2E+002	4.5E+001	6.7E+004
1,1-DICHLOROETHANE	51235042	5.00E-002	1.40E-002	1.40E-002	1.40E-002		1.8E+003	1.8E+002	6.8E+001	1.0E+005
1,1-DICHLOROETHANE	2691410	3.00E-002	1.40E-002	1.40E-002	1.40E-002		2.2E+002	3.7E+004	1.1E-003	1.9E+000
1,1-DICHLOROETHANE	302012	3.00E-003	1.40E-002	1.40E-002	1.40E-002		1.1E+002	2.1E-001	4.1E+000	6.1E+003
1,1-DICHLOROETHANE	7783064	4.00E-002	1.40E-002	1.40E-002	1.40E-002		1.5E+003	1.5E+002	5.4E+001	8.2E+004
1,1-DICHLOROETHANE	123319	3.00E-001	1.40E-002	1.40E-002	1.40E-002		1.1E+004	1.1E+003	4.1E+002	6.1E+005
1,1-DICHLOROETHANE	7439898	3.00E-001	1.40E-002	1.40E-002	1.40E-002		1.8E+003	1.1E+003	4.1E+002	6.1E+005
1,1-DICHLOROETHANE	78831	2.00E-001	1.40E-002	1.40E-002	1.40E-002		7.0E+001	6.6E+000	3.3E+000	6.0E+003
1,1-DICHLOROETHANE	78591	1.50E-002	1.40E-002	1.40E-002	1.40E-002		5.5E+002	5.5E+001	2.0E+001	3.1E+004
1,1-DICHLOROETHANE	33820530	1.00E-001	1.40E-002	1.40E-002	1.40E-002		3.7E+003	3.7E+002	1.4E+002	2.0E+005
1,1-DICHLOROETHANE	1832548	1.00E-007	1.40E-002	1.40E-002	1.40E-002		3.7E+003	3.7E+002	1.4E+002	2.0E+005
1,1-DICHLOROETHANE	78022	2.00E-002	1.40E-002	1.40E-002	1.40E-002		7.3E+002	7.3E+001	2.7E+001	4.1E+004
1,1-DICHLOROETHANE	7439832	2.00E-002	1.40E-002	1.40E-002	1.40E-002		7.3E+002	7.3E+001	2.7E+001	4.1E+004
1,1-DICHLOROETHANE	121765	1.00E-001	1.40E-002	1.40E-002	1.40E-002		3.7E+003	3.7E+002	1.4E+002	2.0E+005
1,1-DICHLOROETHANE	108316	1.00E-001	1.40E-002	1.40E-002	1.40E-002		3.7E+003	3.7E+002	1.4E+002	2.0E+005
1,1-DICHLOROETHANE	7439955	2.00E-002	1.40E-002	1.40E-002	1.40E-002		5.2E+002	5.2E+001	1.9E+001	2.9E+005
1,1-DICHLOROETHANE	7439955	1.40E-001	1.40E-002	1.40E-002	1.40E-002		5.2E+002	5.2E+001	1.9E+001	2.9E+005
1,1-DICHLOROETHANE	950107	9.00E-005	1.40E-002	1.40E-002	1.40E-002		3.3E+001	3.3E+000	1.2E+001	1.8E+002
1,1-DICHLOROETHANE	24307264	3.00E-002	1.40E-002	1.40E-002	1.40E-002		1.1E+003	1.1E+002	4.1E+001	6.1E+004
1,1-DICHLOROETHANE	7487947	3.00E-004	1.40E-002	1.40E-002	1.40E-002		1.1E+001	1.1E+000	4.1E+001	6.1E+004
1,1-DICHLOROETHANE	7439978	1.00E-004	1.40E-002	1.40E-002	1.40E-002		3.1E+001	3.1E+000	1.4E+001	2.0E+002
1,1-DICHLOROETHANE	22967826	1.00E-004	1.40E-002	1.40E-002	1.40E-002		3.7E+000	3.7E+001	1.4E+001	2.0E+002
1,1-DICHLOROETHANE	125987	1.00E-004	1.40E-002	1.40E-002	1.40E-002		1.0E+000	7.3E+001	1.4E+001	2.0E+002
1,1-DICHLOROETHANE	67561	5.00E-001	1.40E-002	1.40E-002	1.40E-002		1.8E+004	1.8E+003	6.8E+002	1.0E+006
1,1-DICHLOROETHANE	950378	1.00E-003	1.40E-002	1.40E-002	1.40E-002		3.7E+001	3.7E+000	1.4E+001	2.0E+002
1,1-DICHLOROETHANE	72485	5.00E-003	1.40E-002	1.40E-002	1.40E-002		1.8E+002	1.8E+001	6.8E+000	1.0E+004
1,1-DICHLOROETHANE	79209	1.00E+000	1.40E-002	1.40E-002	1.40E-002		6.1E+003	3.7E+003	1.4E+003	2.0E+006
1,1-DICHLOROETHANE	96333	3.00E-002	1.40E-002	1.40E-002	1.40E-002		1.8E+002	1.1E+002	4.1E+001	6.1E+004
1,1-DICHLOROETHANE	95534	1.00E-002	1.40E-002	1.40E-002	1.40E-002		2.8E+001	2.6E+002	1.3E+002	2.4E+001
1,1-DICHLOROETHANE	94815	1.00E-002	1.40E-002	1.40E-002	1.40E-002		3.7E+002	3.7E+001	1.4E+001	2.0E+004
1,1-DICHLOROETHANE	94748	5.00E-004	1.40E-002	1.40E-002	1.40E-002		1.8E+001	1.8E+000	6.8E+001	1.0E+003
1,1-DICHLOROETHANE	93652	1.00E-003	1.40E-002	1.40E-002	1.40E-002		3.7E+001	3.7E+000	1.4E+001	2.0E+002
1,1-DICHLOROETHANE	108872	1.00E-002	1.40E-002	1.40E-002	1.40E-002		6.3E+003	3.1E+003	1.4E+003	2.0E+006
1,1-DICHLOROETHANE	74953	1.00E-002	1.40E-002	1.40E-002	1.40E-002		6.1E+001	3.7E+001	1.4E+001	2.0E+004
1,1-DICHLOROETHANE	75082	6.00E-002	1.40E-002	1.40E-002	1.40E-002		4.1E+000	3.8E+000	4.2E+001	7.6E+002
1,1-DICHLOROETHANE	101144	7.00E-004	1.40E-002	1.40E-002	1.40E-002		5.2E+001	4.8E+002	2.4E+002	4.4E+001
1,1-DICHLOROETHANE	101611	6.00E-001	1.40E-002	1.40E-002	1.40E-002		1.5E+000	1.4E+001	6.9E+002	1.2E+002
1,1-DICHLOROETHANE	101688	6.00E-001	1.40E-002	1.40E-002	1.40E-002		1.9E+003	1.0E+003	8.1E+002	1.2E+006
1,1-DICHLOROETHANE	78833	6.00E-001	1.40E-002	1.40E-002	1.40E-002		6.1E+002	5.7E+003	2.9E+003	5.2E+000
1,1-DICHLOROETHANE	50344	6.00E-001	1.40E-002	1.40E-002	1.40E-002		6.1E+002	5.7E+003	2.9E+003	5.2E+000

Source: I = IRIS H = HEAST A = HEAST Asmate W = Withdrawn from IRIS or HEAST E = EPA-NCEA provisional value O = other											
Chemical	CAS	RfDo mg/kg/d	CSF0 1/mg/kg/d	RfDi mg/kg/d	CSF1 1/mg/kg/d	VOC	Risk-based concentrations				
							Tap water ug/l	Ambient air ug/m3	Fish mg/kg	Soil Industrial mg/kg	Residential mg/kg
METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	108101	8 00E-002 H		2 00E-002 A		y	1 4E+002 N	7 3E+001 N	1 1E+002 N	1 6E+005 N	6 3E+003 N
METHYL METHACRYLATE	80626	1 40E+000 I		2 00E-001 I		y	1 4E+003 N	7 3E+002 N	1 9E+003 N	2 9E+006 N	1 1E+005 N
2-METHYL-5-NITROANILINE	99558		3 30E-002 H				2 0E+000 C	1 9E+001 C	9 6E+002 C	1 7E+002 C	1 9E+001 C
METHYL PARATHION	298000	2 50E-004 I					9 1E+000 N	8 1E+001 N	3 4E+001 N	5 1E+002 N	2 0E+001 N
2-METHYLPHENOL	95487	5 00E-002 I					1 8E+003 N	1 8E+002 N	6 8E+001 N	1 0E+005 N	3 9E+003 N
3-METHYLPHENOL	108394	5 00E-002 I					1 8E+003 N	1 8E+002 N	6 8E+001 N	1 0E+005 N	3 9E+003 N
4-METHYLPHENOL	108445	5 00E-003 H					1 8E+002 N	1 8E+001 N	6 8E+000 N	1 0E+004 N	3 9E+002 N
METHYLSTYRENE MIX	25013154	6 00E-003 A		1 00E-002 A		y	5 5E+001 N	3 7E+001 N	8 1E+000 N	1 2E+004 N	4 7E+002 N
ALPHA-METHYLSTYRENE	98039	7 00E-002 A				y	4 3E+002 N	2 6E+002 N	9 5E+001 N	1 4E+005 N	5 5E+003 N
METHYL TERT-BUTYL ETHER	1634044			8 57E-001 I		y	6 3E+003 N	3 1E+003 N	2 0E+002 N	3 1E+005 N	1 2E+004 N
METOLACHLOR (DUAL)	51218452	1 50E-001 I					5 5E+003 N	5 5E+002 N	2 0E+002 N	3 1E+005 N	1 2E+004 N
MIREX	2385855	2 00E-004 I					7 3E+000 N	7 3E+001 N	2 7E+001 N	4 1E+002 N	1 6E+001 N
MOLYBDENUM	7439987	5E-003 I					1 8E+002 N	1 8E+001 N	6 8E+000 N	1 0E+004 N	3 9E+002 N
MONOCHLORAMINE	10599803	1E-001 I		1 00E-001 H			3 7E+003 N	3 7E+002 N	1 4E+002 N	2 0E+005 N	7 8E+003 N
NALED	300765	2E-003 I					7 3E+001 N	7 3E+000 N	2 7E+000 N	4 1E+003 N	1 6E+002 N
NICKEL REFINERY DUST					8 4E-001 I			7 5E+003 C			
NICKEL	7440020	2 00E-002 I					7 3E+002 N	7 3E+001 N	2 7E+001 N	4 1E+004 N	1 6E+003 N
NITRATE	14797558	1 60E+000 I					5 8E+004 N	5 8E+003 N	2 2E+003 N	3 3E+006 N	1 3E+005 N
NITRIC OXIDE	10102439	1 00E-001 W				y	6 1E+002 N	3 7E+002 N	1 4E+002 N	2 0E+005 N	7 8E+003 N
NITRITE	14797650	1 00E-001 I					3 7E+003 N	3 7E+002 N	1 4E+002 N	2 0E+005 N	7 8E+003 N
2-NITROANILINE	88744			5 70E-005 H				2 1E+001 N			
NITROBENZENE	98959	5 00E-004 I		6 00E-004 A		y	3 5E+000 N	2 2E+000 N	6 8E+001 N	1 0E+003 N	3 9E+001 N
NITROFURANTOIN	67206	7 00E-002 H					2 6E+003 N	2 6E+002 N	9 5E+001 N	1 4E+005 N	5 5E+003 N
NITROFURAZONE	59870		1 50E+000 H				4 5E+002 C	4 2E+003 C	2 1E+003 C	3 8E+000 C	4 3E+001 C
NITROGEN DIOXIDE	10102440	1 00E+000 W				y	6 1E+003 N	3 7E+003 N	1 4E+003 N	2 0E+006 N	7 8E+004 N
NITROGLYCERIN	55630		1 4E-002 E				4 8E+000 C	4 5E+001 C	2 3E+001 C	4 1E+002 C	4 6E+001 C
4-NITROPHENOL	100027	8 00E-003 E					2 9E+002 N	2 9E+001 N	1 1E+001 N	1 5E+004 N	6 3E+002 N
2-NITROPROPANE	79469			5 70E-003 I	9 40E+000 H	y	1 3E+003 C	6 7E+004 C			
N-NITROSO-D,N-BUTYLAMINE	924163	5 40E+000 I			5 60E+000 I	y	1 9E+003 C	1 1E+003 C	5 8E+004 C	1 1E+000 C	1 2E+001 C
N-NITROSO-DIETHANOLAMINE	1116547	2 80E+000 I					2 4E+002 C	2 2E+003 C	1 1E+003 C	2 0E+000 C	2 3E+001 C
N-NITROSDIETHYLAMINE	55185	1 50E+002 I			1 50E+002 I		4 5E+004 C	4 2E+005 C	2 1E+006 C	3 8E+002 C	4 3E+003 C
N-NITROSDIMETHYLAMINE	62759	5 10E+001 I			5 10E+001 I		1 3E+003 C	1 2E+004 C	6 2E+005 C	1 1E+001 C	1 3E+002 C
N-NITROSDIPHENYLAMINE	85306	4 90E-003 I					1 4E+001 C	1 3E+000 C	6 4E+001 C	1 2E+003 C	1 3E+002 C
N-NITROSDIPROPYLAMINE	621647	7 00E+000 I					9 8E+003 C	8 9E+004 C	4 5E+004 C	8 2E+001 C	9 1E+002 C
N-NITROSO-N-ETHYLUREA	759739	1 40E+002 H					4 8E+004 C	4 5E+005 C	2 3E+006 C	4 1E+002 C	4 5E+003 C
N-NITROSO-N-METHYLETHYLAMINE	1059556	2 20E+001 I					3 0E+003 C	2 8E+004 C	1 4E+004 C	2 6E+001 C	2 9E+002 C
N-NITROSPYRROLIDINE	930552	2 10E+000 I			2 10E+000 I		3 2E+002 C	3 0E+003 C	1 5E+003 C	2 7E+000 C	3 0E+001 C
M-NITROTOLUENE	99081	2 00E-002 E				y	1 2E+002 N	7 3E+001 N	2 7E+001 N	4 1E+004 N	1 6E+003 N
O-NITROTOLUENE	88722	1 00E-002 H				y	6 1E+001 N	3 7E+001 N	1 4E+001 N	2 0E+004 N	7 8E+002 N
P-NITROTOLUENE	99990	1 00E-002 H				y	6 1E+001 N	3 7E+001 N	1 4E+001 N	2 0E+004 N	7 8E+002 N
NUSTAR	85509199	7 00E-004 I					2 6E+001 N	2 6E+000 N	9 5E+001 N	1 4E+003 N	5 5E+001 N
ORYZALIN	19044883	5 00E-002 I					1 8E+003 N	1 8E+002 N	6 8E+001 N	1 0E+005 N	3 9E+003 N
OXADIAZON	19666309	5 00E-003 I					1 8E+002 N	1 8E+001 N	6 8E+000 N	1 0E+004 N	3 9E+002 N
OXAMYL	23135220	2 50E-002 I					9 1E+002 N	9 1E+001 N	3 4E+001 N	5 1E+004 N	2 0E+003 N
OXYFLUORFEN	42874033	3 00E-003 I					1 1E+002 N	1 1E+001 N	4 1E+000 N	6 1E+003 N	2 3E+002 N

Sources: I = IRIS H = HEAST A = HEAST Alternate W = Withdrawn from IRIS or HEAST
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Chemical	CAS	RfDo mg/kg/d	CSFo 1/mg/kg/d	RfDi mg/kg/d	CSFi 1/mg/kg/d	VOC	Risk-based concentrations				
							Tap water ug/l	Ambient air ug/m3	Fish mg/kg	Soil Industrial mg/kg	Residential mg/kg
PARAQUAT DICHLORIDE	1910425	4 50E+003 I					1 6E+002 N	1 6E+001 N	6 1E+000 N	9 2E+003 N	3 5E+002 N
PARATHION	56382	6 00E+003 H					2 2E+002 N	2 2E+001 N	8 1E+000 N	1 2E+004 N	4 7E+002 N
PENTACHLOROBENZENE	608935	8 00E+004 I					2 9E+001 N	2 9E+000 N	1 1E+000 N	1 6E+003 N	6 3E+001 N
PENTACHLORONITROBENZENE	82688	3 00E+003 I	2 60E+001 H				2 6E+001 C	2 4E+002 C	1 2E+002 C	2 2E+003 C	2 5E+000 C
PENTACHLOROPHENOL	87865	3 00E+002 I	1 20E+001 I				5 9E+001 C	5 2E+002 C	2 6E+002 C	4 8E+001 C	5 3E+000 C
PERMETHRIN	52645531	5 00E+002 I					1 8E+003 N	1 8E+002 N	6 8E+001 N	1 0E+005 N	3 9E+003 N
PHENOL	109552	6 00E+001 I					2 2E+004 N	2 2E+003 N	8 1E+002 N	1 2E+008 N	4 7E+004 N
M-PHENYLENEDIAMINE	108452	6 00E+003 I	4 70E+002 H				2 2E+004 N	2 2E+003 N	8 1E+002 N	1 2E+004 N	4 7E+004 N
O-PHENYLENEDIAMINE	95545						1 4E+000 C	1 3E+001 C	6 7E+002 C	1 2E+002 C	1 4E+001 C
P-PHENYLENEDIAMINE	105503	1 90E+001 H					6 9E+003 N	6 9E+002 N	2 8E+002 N	3 9E+005 N	1 5E+004 N
2-PHENYLPHENOL	90437	1 00E+000 H	1 90E+003 H				3 5E+001 C	3 3E+000 C	1 7E+000 C	3 0E+003 C	3 4E+002 C
PHOSPHINE	7803512	3 00E+004 I		8 60E+005 I			1 1E+001 N	3 1E+001 N	4 1E+001 N	6 1E+002 N	2 3E+001 N
PHOSPHORIC ACID	7664382			2 90E+003 I				1 1E+001 N			
PHOSPHORUS (WHITE)	7723140	2 00E+005 I					7 3E+001 N	7 3E+002 N	2 7E+002 N	4 1E+001 N	1 6E+000 N
P-PHTHALIC ACID	100210	1 00E+000 H					3 7E+004 N	3 7E+003 N	1 4E+003 N	2 0E+006 N	7 8E+004 N
PHTHALIC ANHYDRIDE	85448	2 00E+000 I	8 90E+000 H	3 43E+002 H			7 3E+004 N	1 3E+002 N	2 7E+003 N	4 1E+006 N	1 6E+003 N
POLYBROMINATED BIPHENYLS		7 00E+008 H					7 5E+003 C	7 0E+004 C	3 5E+004 C	6 4E+001 C	7 2E+002 C
POLYCHLORINATED BIPHENYLS			2 00E+000 I		2 00E+000 I		3 9E+002 C	3 1E+003 C	1 8E+003 C	2 9E+000 C	3 2E+001 C
AROCLOR-1016	1336383						9 6E+001 C	8 9E+002 C	4 5E+002 C	8 2E+001 C	5 5E+000 N
AROCLOR-1221	12674112	7 00E+005 I	7 00E+002 I		7 00E+002 I		3 3E+002 C	3 1E+003 C	1 5E+003 C	2 9E+000 C	3 2E+001 C
AROCLOR-1232	11104282	2 00E+000 I	2 00E+000 I		2 00E+000 I		3 3E+002 C	3 1E+003 C	1 8E+003 C	2 9E+000 C	3 2E+001 C
AROCLOR-1242	11141185	2 00E+000 I	2 00E+000 I		2 00E+000 I		3 3E+002 C	3 1E+003 C	1 8E+003 C	2 9E+000 C	3 2E+001 C
AROCLOR-1248	53468219	2 00E+000 I	2 00E+000 I		2 00E+000 I		3 3E+002 C	3 1E+003 C	1 8E+003 C	2 9E+000 C	3 2E+001 C
AROCLOR-1254	12672296	2 00E+000 I	2 00E+000 I		2 00E+000 I		3 3E+002 C	3 1E+003 C	1 8E+003 C	2 9E+000 C	3 2E+001 C
AROCLOR-1260	11097691	2 00E+005 I	2 00E+000 I		2 00E+000 I		3 3E+002 C	3 1E+003 C	1 8E+003 C	2 9E+000 C	3 2E+001 C
POLYCHLORINATED TERPHENYLS	11098825	2 00E+000 I	2 00E+000 I		2 00E+000 I		3 3E+002 C	3 1E+003 C	1 8E+003 C	2 9E+000 C	3 2E+001 C
POLYNUCLEAR AROMATIC HYDROCARBONS.	61786338	4 50E+000 E					1 5E+002 C	1 4E+003 C	7 0E+004 C	1 3E+000 C	1 4E+001 C
ACENAPHTHENE	83329	6 00E+002 I				y	3 7E+002 N	2 2E+002 N	8 1E+001 N	1 2E+005 N	4 7E+003 N
ANTHRACENE	120127	3 00E+001 I				y	1 8E+003 N	1 1E+003 N	4 1E+002 N	6 1E+005 N	2 3E+004 N
BENZ(A)ANTHRACENE	56553		7 30E+001 E				9 2E+002 C	8 6E+003 C	4 3E+003 C	7 8E+000 C	8 7E+001 C
BENZ(B)FLUORANTHENE	205992		7 30E+001 E				9 2E+002 C	8 6E+003 C	4 3E+003 C	7 8E+000 C	8 7E+001 C
BENZ(K)FLUORANTHENE	207089		7 30E+002 E				9 2E+001 C	8 6E+002 C	4 3E+002 C	7 8E+001 C	8 7E+000 C
BENZOF(PYRENE	50328		7 30E+000 I		3 10E+000 E		9 2E+003 C	2 0E+003 C	4 3E+004 C	7 8E+001 C	8 7E+002 C
CARBAZOLE	86748		2 00E+002 H				3 3E+000 C	3 1E+001 C	1 6E+001 C	2 9E+002 C	3 2E+001 C
CHRYSENE	218019		7 30E+003 E				9 2E+000 C	8 6E+001 C	4 3E+001 C	7 8E+002 C	8 7E+001 C
DIBENZ(A,H)ANTHRACENE	53703		7 30E+000 E				9 2E+003 C	8 6E+004 C	4 3E+004 C	7 8E+001 C	8 7E+002 C
DIBENZOFURAN	132649	4 00E+003 E				y	2 4E+001 N	1 5E+001 N	5 4E+000 N	8 2E+003 N	3 1E+002 N
FLUORANTHENE	206440	4 00E+002 I					1 5E+003 N	1 5E+002 N	5 4E+001 N	8 2E+004 N	3 1E+003 N
FLUORENE	86737	4 00E+002 I				y	2 4E+002 N	1 5E+002 N	5 4E+001 N	8 2E+004 N	3 1E+003 N
INDENO(1,2,3-C)PYRENE	193395		7 30E+001 E				9 2E+002 C	8 6E+003 C	4 3E+003 C	7 8E+000 C	8 7E+001 C
2-METHYLNAPHTHALENE	91576	2 00E+002 E				y	1 2E+002 N	7 3E+001 N	2 7E+001 N	4 1E+004 N	1 6E+003 N
NAPHTHALENE	91203	2 00E+002 I		9 00E+004 I			6 5E+000 N	3 3E+000 N	2 7E+001 N	4 1E+004 N	1 6E+003 N
PYRENE	129000	3 00E+002 I				y	1 8E+002 N	1 1E+002 N	4 1E+001 N	6 1E+004 N	2 3E+003 N
PROMETON	1610180	1 50E+002 I					5 5E+002 N	5 5E+001 N	2 0E+001 N	3 1E+004 N	1 2E+003 N
PROMETRYN	7287196	4 00E+003 I					1 5E+002 N	1 5E+001 N	5 4E+000 N	8 2E+003 N	3 1E+002 N

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Basis: C = Carcinogenic effects N = Noncarcinogenic effects I = RBC at HI of 0.1 < RBC-c

Chemical	CAS	RIDo mg/kg/d	CSFo 1/mg/kg/d	RIDi mg/kg/d	CSFi 1/mg/kg/d	VOC	Risk-based concentrations				
							Tap water ug/l	Ambient air ug/m3	Fish mg/kg	Soil Industrial mg/kg	Residential mg/kg
PROPACHLOR	191817	1.30E-002 I					4.7E+002 N	4.7E+001 N	1.8E+001 N	2.7E+004 N	1.0E+003 N
PROPANIL	709888	5.00E-003 I					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N
PROPARGITE	2312358	2.00E-002 I					7.3E+002 N	7.3E+001 N	2.7E+001 N	4.1E+004 N	1.6E+003 N
N-PROPYLBENZENE		1.00E-002 E				Y	6.1E+001 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N
PROPYLENE GLYCOL	57556	2.00E+001 H					7.3E+005 N	7.3E+004 N	2.7E+004 N	4.1E+007 N	1.6E+006 N
PROPYLENE GLYCOL MONOETHYL ETHER	52125538	7.00E-001 H					2.6E+004 N	2.6E+003 N	9.5E+002 N	1.4E+006 N	5.5E+004 N
PROPYLENE GLYCOL MONOMETHYL ETHER	107982	7.00E-001 H					2.6E+004 N	2.1E+003 N	9.5E+002 N	1.4E+006 N	5.5E+004 N
PURSUIT	81335775	2.50E-001 I					9.1E+003 N	9.1E+002 N	3.4E+002 N	5.1E+005 N	2.0E+004 N
PYRIDINE	110861	1.00E-003 I					3.7E+001 N	3.7E+000 N	1.4E+000 N	2.0E+003 N	7.8E+001 N
QUINOLINE	81225		1.20E+001 H				5.6E+003 C	5.2E+004 C	2.8E+004 C	4.8E+001 C	5.3E+002 C
RDX	121824	3.00E-003 I	1.10E-001 I				6.1E+001 C	5.7E+002 C	2.9E+002 C	5.2E+001 C	5.8E+000 C
RESMETHRIN	10453868	3.00E-002 I					1.8E+003 N	1.1E+002 N	4.1E+001 N	6.1E+004 N	2.3E+003 N
"RONNEL	299843	5.00E-002 H					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N	3.9E+003 N
ROTENONE	83794	4.00E-003 I					1.5E+002 N	1.5E+001 N	5.4E+000 N	8.2E+003 N	3.1E+002 N
SELENIOS ACID	7783008	5.00E-003 I					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N
SILVER	7782492	5.00E-003 I					1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N
SIMAZINE	7440224	5.00E-003 I	1.20E-001 H				1.8E+002 N	1.8E+001 N	6.8E+000 N	1.0E+004 N	3.9E+002 N
SODIUM AZIDE	122349	5.00E-003 I					5.6E+001 C	5.2E+002 C	2.8E+002 C	4.8E+001 C	5.3E+000 C
SODIUM DIETHYLTHIOCARBAMATE	26628228	4.00E-003 I					1.5E+002 N	1.5E+001 N	5.4E+000 N	8.2E+003 N	3.1E+002 N
SODIUM DIETHYLTHIOCARBAMATE	148185	3.00E-002 I	2.70E-001 H				2.5E+001 C	2.3E+002 C	1.2E+002 C	2.1E+001 C	2.4E+000 C
STRONTIUM, STABLE	7440246	6.00E-001 I					2.2E+004 N	2.2E+003 N	8.1E+002 N	1.2E+006 N	4.7E+004 N
STRYCHNINE	57249	3.00E-004 I					1.1E+001 N	1.1E+000 N	4.1E+001 N	6.1E+002 N	2.3E+001 N
STYRENE	100425	2.00E-001 I				Y	1.6E+003 N	1.0E+003 N	2.7E+002 N	4.1E+005 N	1.6E+004 N
2,3,7,8-TETRACHLORODIBENZODIOXIN	1746016		1.50E+005 H	2.8E-001 I	1.50E+005 H		4.5E+007 C	4.2E+008 C	2.1E+008 C	3.8E+005 C	4.3E+006 C
"1,2,4,5-TETRACHLOROBENZENE	55943	3.00E-004 I					1.1E+001 N	1.1E+000 N	4.1E+001 N	6.1E+002 N	2.3E+001 N
1,1,1,2-TETRACHLOROETHANE	630206	3.00E-002 I	2.60E-002 I			Y	4.1E+001 C	2.4E+001 C	1.2E+001 C	2.2E+002 C	2.5E+001 C
1,1,2,2-TETRACHLOROETHANE	79345	6.00E-002 E	2.00E-001 I			Y	5.3E+002 C	3.1E+002 C	1.6E+002 C	2.9E+001 C	3.2E+000 C
TETRACHLOROETHENE	127184	1.00E-002 I	5.20E-002 E	1.4E-001 E	2.00E-003 E	Y	1.1E+000 C	3.1E+000 C	6.1E+002 C	1.1E+002 C	1.2E+001 C
2,3,4,6-TETRACHLOROPHENOL	56902	3.00E-002 I					1.1E+003 N	1.1E+002 N	4.1E+001 N	6.1E+004 N	2.3E+003 N
"P,AAA-TETRACHLOROTOLUENE	5216251		2.00E+001 H				3.3E+003 C	3.1E+004 C	1.6E+004 C	2.9E+001 C	3.2E+002 C
1,1,1,2-TETRAFLUOROETHANE	811972			2.29E+001 I		Y	1.7E+005 N	8.4E+004 N			
"TETRAHYDROFURAN	109999	2.00E-002 E	7.6E-003 E	8.6E-002 E	6.8E-003 E		8.8E+000 C	9.2E+001 C	4.2E+001 C	7.5E+002 C	8.4E+001 C
TETRYL	479459	1.00E-002 H					3.7E+002 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N
THALLIC OXIDE	1314325	7.00E-005 W					2.6E+000 N	2.6E+001 N	9.5E+002 N	1.4E+002 N	5.5E+000 N
THALLIUM	7440280	7.00E-005 O					3.3E+000 N	3.3E+001 N	1.2E+001 N	1.8E+002 N	7.0E+000 N
THALLIUM ACETATE	563688	9.00E-005 I					2.9E+000 N	2.9E+001 N	1.1E+001 N	1.8E+002 N	6.3E+000 N
THALLIUM CARBONATE	6533739	8.00E-005 I					2.9E+000 N	2.9E+001 N	1.1E+001 N	1.8E+002 N	6.3E+000 N
THALLIUM CHLORIDE	7791120	8.00E-005 I					2.9E+000 N	2.9E+001 N	1.1E+001 N	1.8E+002 N	6.3E+000 N
THALLIUM NITRATE	10102451	9.00E-005 I					3.3E+000 N	3.3E+001 N	1.2E+001 N	1.8E+002 N	7.0E+000 N
THALLIUM SULFATE (2:1)	7446188	8.00E-005 I					2.9E+000 N	2.9E+001 N	1.1E+001 N	1.8E+002 N	6.3E+000 N
THIOBENCARB	28249778	1.00E-002 I					3.7E+002 N	3.7E+001 N	1.4E+001 N	2.0E+004 N	7.8E+002 N
TIN	7440315	6.00E-001 H					2.2E+004 N	2.2E+003 N	8.1E+002 N	1.2E+006 N	4.7E+004 N

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Chemical	CAS	RfDo	CSFo	RfDi	CSFi	VOC	Risk-based concentrations			
							Tap water	Ambient air	Fish	Soil
		mg/kg/d	1/mg/kg/d	mg/kg/d	1/mg/kg/d		ug/l	ug/m3	mg/kg	mg/kg
Sources: 1 = IRIS H = HEAST A = HEAST Alternates W = Withdrawn from IRIS or HEAST E = EPA-NCEA provisional value O = other										
TITANIUM	7440326	4.00E+000 E		8.60E-003 E			1.5E+005 N	3.1E+001 N	5.4E+003 N	8.2E+006 N
TITANIUM DIOXIDE	13463677	4.00E+000 E		8.60E-003 E			1.5E+005 N	3.1E+001 N	5.4E+003 N	8.2E+006 N
TOLUENE	108983	2.00E-001 I		1.14E-001 I		Y	7.5E+002 N	4.2E+002 N	2.7E+002 N	1.6E+004 N
TOLUENE-2,4-DIAMINE	95807	6.00E-001 H					2.1E+002 C	2.0E+003 C	9.9E+004 C	1.8E+000 C
TOLUENE-2,5-DIAMINE	823405	2.00E-001 H					7.2E+004 N	2.2E+003 N	8.1E+002 N	1.2E+006 N
P-TOLUIDINE	106490	1.90E-001 H					3.5E+001 C	3.3E+002 C	1.7E+002 C	3.0E+001 C
TOXAPHENE	8001352	1.10E+000 I					6.1E+002 C	5.7E+003 C	2.9E+003 C	5.2E+000 C
1,2,4-TRIBROMOBENZENE	615543	5.00E-003 I					1.8E+002 N	1.8E+001 N	6.8E+001 N	1.0E+004 N
TRIBUTYL TIN OXIDE	56359	3.00E-004 I					1.1E+001 N	1.1E+000 N	4.1E+001 N	6.1E+002 N
2,4,6-TRICHLOROANILINE	634935	1.00E-002 I		5.70E-002 H		Y	2.0E+000 C	1.8E+001 C	9.3E+002 C	1.7E+002 C
1,2,4-TRICHLOROBENZENE	120821	2.00E-002 E		2.86E-001 E		Y	1.9E+002 N	2.1E+002 N	1.4E+001 N	2.0E+004 N
1,1,1-TRICHLOROETHANE	71556	4.00E-003 I		5.70E-002 I		Y	5.4E+002 N	1.0E+003 N	2.7E+001 N	4.1E+004 N
1,1,2-TRICHLOROETHANE	79005	6.00E-003 E		1.10E-002 E		Y	1.9E+001 C	1.1E+001 C	5.5E+002 C	1.0E+002 C
TRICHLOROETHENE	79016	3.00E-001 I		2.00E-001 A		Y	1.6E+000 C	1.0E+000 C	2.9E+001 C	5.2E+002 C
TRICHLOROFLUOROMETHANE	75884	1.00E-001 I					1.3E+003 N	7.3E+002 N	4.1E+002 N	6.1E+005 N
2,4,5-TRICHLOROPHENOL	95954	1.00E-001 I					3.7E+003 N	3.7E+002 N	1.4E+002 N	2.0E+005 N
2,4,6-TRICHLOROPHENOL	88062	1.00E-002 I					6.1E+000 C	6.3E+001 C	2.9E+001 C	5.2E+002 C
2,4,5-T	93765	8.00E-003 I					3.7E+002 N	3.7E+001 N	1.4E+001 N	2.0E+004 N
2-(2,4,5-TRICHLOROPHENOXY)PROPIONIC ACID	93721	5.00E-003 I					2.9E+002 N	2.9E+001 N	1.1E+001 N	1.6E+004 N
1,1,2-TRICHLOROPROPANE	598776	6.00E-003 I		7.00E+000 H		Y	3.0E+001 N	1.8E+001 N	6.8E+000 N	1.0E+004 N
1,2,3-TRICHLOROPROPANE	96184	5.00E-003 H				Y	1.5E+003 C	8.9E+004 C	4.5E+004 C	8.2E+001 C
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	96185	3.00E+001 I		8.60E+000 H		Y	3.0E+001 N	1.8E+001 N	6.8E+000 N	1.0E+004 N
1,2,4-TRIMETHYLBENZENE	95636	5.00E-002 E		1.70E-003 E		Y	5.9E+004 N	3.1E+004 N	4.1E+004 N	6.1E+007 N
1,3,5-TRIMETHYLBENZENE	108678	5.00E-002 E		1.70E-003 E		Y	1.2E+001 N	6.2E+000 N	6.8E+001 N	1.0E+005 N
TRIMETHYL PHOSPHATE	512581	3.00E-002 I		3.70E-002 H		Y	1.2E+001 N	6.2E+000 N	6.8E+001 N	1.0E+005 N
1,3,5-TRINITROBENZENE	99354	3.00E-002 I					1.8E+000 C	1.7E+001 C	8.5E+002 C	1.5E+002 C
2,4,6-TRINITROTOLUENE	118967	5.00E-004 I		3.00E-002 I		Y	1.1E+003 N	1.1E+002 N	4.1E+001 N	6.1E+004 N
URANIUM (SOLUBLE SALTS)		3.00E-003 I					2.2E+000 C	2.1E+001 C	1.1E+001 C	1.9E+002 C
VANADIUM	7440622	7.00E-003 H					1.1E+002 N	1.1E+001 N	4.1E+000 N	6.1E+003 N
VANADIUM PENTOXIDE	1314621	9.00E-003 I					2.6E+002 N	2.6E+001 N	9.5E+000 N	1.4E+004 N
VANADIUM SULFATE	16765812	2.00E-002 H					3.3E+002 N	3.3E+001 N	1.2E+001 N	1.8E+004 N
VINYL CHLORIDE	50471448	2.50E-002 I					7.3E+002 N	7.3E+001 N	2.7E+001 N	4.1E+004 N
VINYL ACETATE	108054	1.00E+000 H		5.71E-002 I		Y	9.1E+002 N	9.1E+001 N	3.4E+001 N	5.1E+004 N
VINYL CHLORIDE	75014	1.90E+000 H					4.1E+002 N	2.1E+002 C	1.7E+003 C	3.0E+000 C
WARFARIN	81812	3.00E-004 I					1.9E+002 C	2.1E+002 C	1.7E+003 C	3.0E+000 C
M-XYLENE	108363	2.00E+000 H				Y	1.1E+001 N	1.1E+000 N	4.1E+001 N	6.1E+002 N
O-XYLENE	95476	2.00E+000 H				Y	1.2E+004 N	7.3E+003 N	2.7E+003 N	4.1E+006 N
P-XYLENE	106423	2.00E+000 I				Y	1.2E+004 N	7.3E+003 N	2.7E+003 N	4.1E+006 N
XYLENES	1330207	2.00E+000 I				Y	1.2E+004 N	7.3E+003 N	2.7E+003 N	4.1E+006 N
ZINC	7440668	3.00E-001 I				Y	1.1E+004 N	1.1E+003 N	4.1E+002 N	6.1E+005 N
ZINC PHOSPHIDE	1314847	3E-004 I					1.1E+001 N	1.1E+000 N	4.1E+001 N	6.1E+002 N
ZINIB	12122677	5E-002 I					1.8E+003 N	1.8E+002 N	6.8E+001 N	1.0E+005 N

APPENDIX D



DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY MATERIEL COMMAND
5001 EISENHOWER AVENUE, ALEXANDRIA, VA 22333 - 0001

REPLY TO
ATTENTION OF

AMCEN-R

19 NOV 1998

MEMORANDUM THRU Commander, U.S. Army Engineers Division, South
Atlantic, ATTN: CESAD-RE, Room #313, 77 Forsyth
Street, SW., Atlanta, GA 30335-6801

FOR: Commander, U.S. Army Corps of Engineer, Mobile District, ATTN:
CESAM-RE-MM, P.O. Box 2288, Mobile, AL 36628-0001

SUBJECT: Finding of Suitability to Lease - Number 7 (FOSL-7) for
Defense Distribution Depot Memphis, Tennessee (DDMT)

1. Reference memorandum, AMCEN-R, 3 Apr 97, subject: Report of Availability for a Master Lease with the Memphis Depot Redevelopment Agency.
2. Enclosed for your action is the approved FOSL-7 (Encl 1) with supporting documentation (Encl 2 through 7) for adding 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 DDMT to the Master Lease with Memphis Depot Redevelopment Agency.
3. The approved Report of Availability (ROA) for the entire installation, including the property addressed in this FOSL-7, was forwarded with reference.
4. The Final Environmental Assessment for Master Lease, DDMT, dated Sep 96, is the National Environmental Policy Act Document for this action.
5. Request a modification to the Master Lease adding those parcels referenced in paragraph 2 above and to be executed in accordance with the ROA and this FOSL-7.

AMCEN-R


SUBJECT: Finding of Suitability to Lease - Number 7 (FOSL-7) for
Defense Distribution Depot Memphis, Tennessee (DDMT)

6. Points of contact for this action are Mr. John Farrar,
AMCEN-R, commercial (703) 617-0726, DSN 767-0726, Mr. Joe Goetz,
AMCEN-R, commercial (703) 617-8904, DSN 767-8904.

7. AMC -- America's Arsenal for the Brave.

FOR THE COMMANDER:

7 Encls
as

for 
P. S. MORRIS

Deputy Chief of Staff
for Engineering, Housing,
Environment, and Installation
Logistics

CF: (wo/encls)

Assistant Chief of Staff for Installation Management, ATTN:
DAIM-BO, 600 Army Pentagon, Washington, D.C. 20310-0600
Headquarters, U.S. Army Corps of Engineers, ATTN: CERE-C,
Pulaski Bldg #4133, 20 Massachusetts Avenue, Washington, D.C.
20314-1000

Commander, Defense Distribution Depot Memphis, ATTN: DDMT-D,
2163 Airways Boulevard, Memphis, TN 38114-5210

Director, Defense Logistics Agency, ATTN: DLSC-BBB, 8725 John J.
Kingman Road, Suite 2533, Fort Belvoir, VA 22060-6221

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

1. 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:	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
Building 250:	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
Building 349	Domestic Water Pipe Joint Insulation 12 x 12 Floor Tile and Mastic Cement Asbestos Panels on Raised Roof Raised Roof Putty and Roof Flashing
Building 350:	Domestic Water Pipe Insulation (Including Joints) Cement Asbestos Panels on Raised Roof Raised Roof Putty and Roof Flashing
Building 429:	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

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.

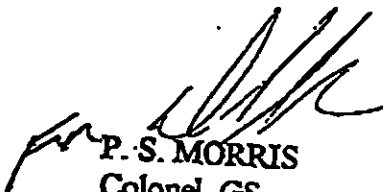
7. ENVIRONMENTAL PROTECTION PROVISIONS

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.

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

- 1 Site Maps of Property
- 2 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

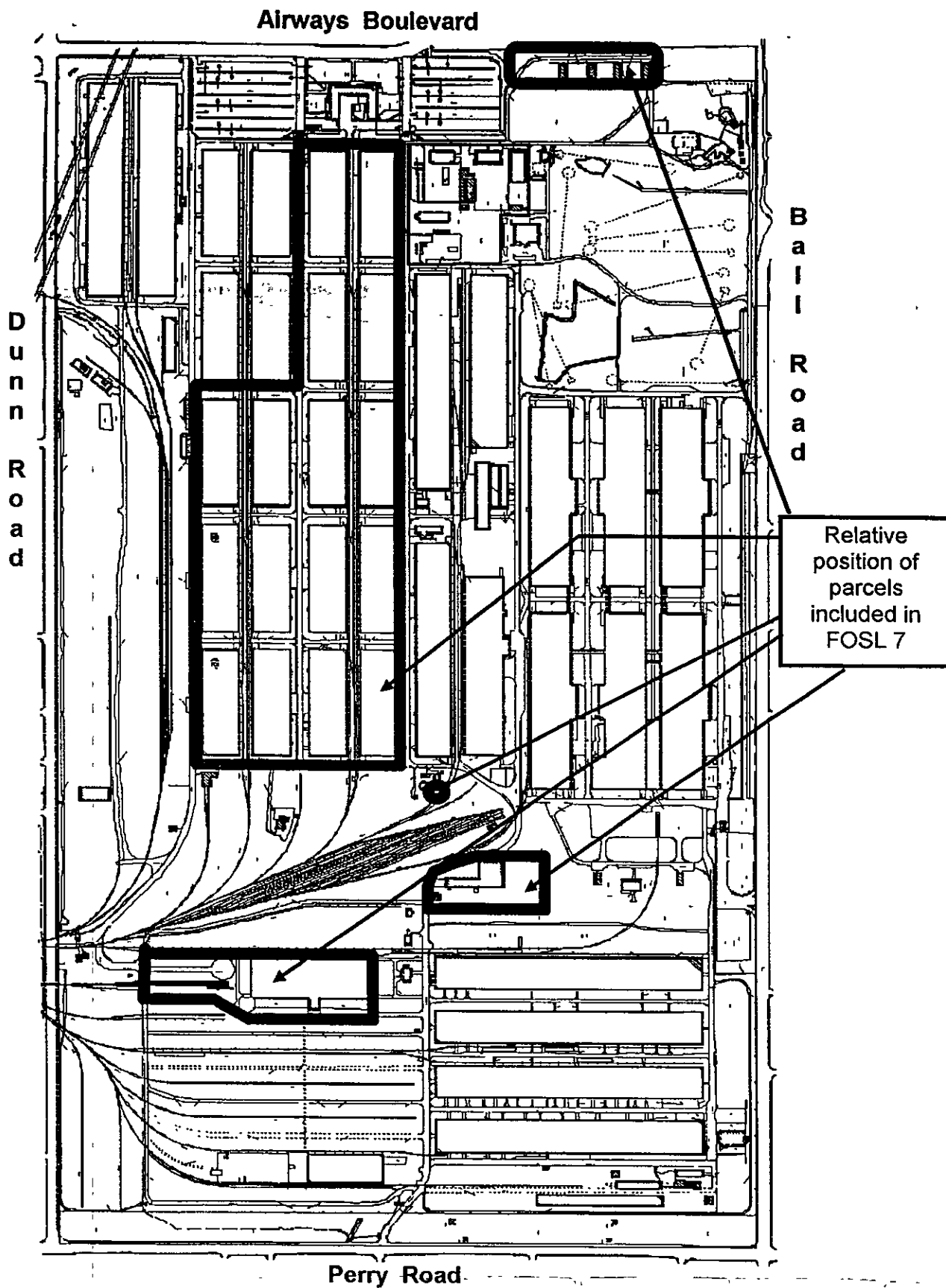
As required under the DOD FOSL Guidance, notification of hazardous substance activities and petroleum product activities shall be provided in the lease documents. Refer to Table 2 – Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3) and Table 3 – Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4).

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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

**Enclosure 1
Site Maps of FOSL 7 Property**



Enclosure 1 Site Maps of FOSL 7 Property

Airways Boulevard

Parcel 7.1 is the open land area surrounding Building 249.
Parcel 7.2 is Building 249.

Parcel 2.7 is the open area surrounding the Family Housing Units (Buildings 176, S178, 179, 181, S183 and 184, which were included on FOSL 1).

Parcel 9.2 is Building 429.
Parcel 9.3 is Building 430.
Parcel 9.4 is Building 449.
Parcel 9.5 is Building 450.
(The open land area surrounding these buildings, Parcel 9.1, was included on FOSL 6.)

Parcel 6.2 is Building 250.
Parcel 6.3 is Building 349.
Parcel 6.4 is Building 350.
(The open land area surrounding these buildings, Parcel 6.1, was included on FOSL 6.)

Parcel 12.1 is the open land area surrounding Building 629.
Parcel 12.2 is Building 629.

Parcel 10.1 is Building 649.
Parcel 10.4 is Building 549.
Parcel 10.5 is Building 550.
Parcel 10.6 is Building 650.
(The open land area surrounding these buildings, Parcel 10.2, and a spill area between Buildings 550 and 650, Parcel 10.3, were included on FOSL 6.)

Parcel 33.11 is the open land area containing the 1,000-gallon diesel above ground storage tank located outside Building 756.

Parcel 11.1 is the open land area surrounding Buildings 529, 530 and 630.
Parcel 11.2 is Building 529.
Parcel 11.3 is Building 530.
Parcel 11.4 is Building 630.

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Parcel 32.1 is the open land area north and west of Building 835.

Parcel 32.2 is Building 835.

Parcel 24.3 is Buildings 770 and 771 as well as the open land area surrounding these buildings.

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Perry Road

Enclosure 2
Table 1 - Description of Property

Building Number and Property Description	Parcel Designation	Condition Category	Remedial Actions
Parcel 6.3 is Building 349, a 120,000 square foot building erected in 1942 that was used as a general purpose warehouse.	6.3(1)	1	Building 349 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ¹ Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 9.2 is Building 429, a 120,000 square foot building erected in 1942 that was used as a general purpose warehouse.	9.2(1)	1	Building 429 may have been fumigated in the past. This building was sampled in the winter of 1997 to evaluate the impacts of fumigation. The BCT evaluated this fumigation issue and determined no further action was required. ¹ Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 9.4 is Building 449, a 120,000 square foot building erected in 1942 that was used as a general purpose warehouse.	9.4(1)	1	Building 449 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ¹ Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 9.5 is Building 450, a 120,000 square foot building erected in 1942 that was used as a general purpose warehouse.	9.5(1)	1	Building 450 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ¹ Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 10.4 is Building 549, a 120,000 square foot building erected in 1942 that was used as a general purpose warehouse.	10.4(1)	1	Building 549 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ¹ Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.

Enclosure 2
Table 1 - Description of Property

Building Number and Property Description	Parcel Designation	Condition Category	Remedial Actions
Parcel 10.6 is Building 650, a 120,000 square foot building erected in 1942 that was used as a general purpose warehouse.	10.6(1)	1	Building 650 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ¹ Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 11.3 is Building 530, a 120,000 square foot building erected in 1942 that was used as a general purpose warehouse.	11.3(1)	1	Building 530 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ¹ Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 11.4 is Building 630, a 120,000 square foot building erected in 1942 that was used as a general purpose warehouse.	11.4(1)	1	Building 630 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ¹ Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 33.11 is the open land area containing the 1,000-gallon diesel above ground storage tank adjacent to Building 756.	33.11(2)	2	This parcel contain a former underground storage tank (UST) location. A 1,000-gallon diesel above-ground storage tank (AST) is currently located at this parcel. The underground storage tank was removed in July 1994. There have been no documented releases reported for either tank, nor was there any evidence of disposal or migration of petroleum products from adjacent property. When the UST was removed, the soil was sampled in accordance with Tennessee State Underground Storage Tank regulations. Results indicated less than 20 ppm of total petroleum hydrocarbons; no further remediation was required. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.

Enclosure 2
Table 1 - Description of Property

Building Number and Property Description	Parcel Designation	Condition Category	Remedial Actions
Parcel 6.2 is Building 250, a 120,000 square foot building erected in 1942 that was used as a general purpose warehouse.	6.2(3)	3	Building 250 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ¹ Also, floor staining associated with acid leaks in the forklift battery charging area were noted in EBS visual inspections. At the June 1998 meeting, the BCT agreed this parcel should change from an ECP Category 7 to a Category 3. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 6.4 is Building 350, a 120,000 square foot building erected in 1942 that was used as a general purpose warehouse.	6.4(3)	3	Building 350 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ¹ Also, floor staining associated with acid leaks in the forklift battery charging area were noted in EBS visual inspections. At the June 1998 meeting, the BCT agreed this parcel should change from an ECP Category 7 to a Category 3. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 9.3 is Building 430, a 120,000 square foot building erected in 1942 that was used as a general purpose warehouse.	9.3(3)	3	Building 430 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ¹ Also, floor staining associated with acid leaks in the forklift battery charging area were noted in EBS visual inspections. At the June 1998 meeting, the BCT agreed this parcel should change from an ECP Category 7 to a Category 3. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.

Enclosure 2
Table 1 - Description of Property

Building Number and Property Description	Parcel Designation	Condition Category	Remedial Actions
Parcel 10.1 is Building 649, a 120,000 square foot building erected in 1942 that was used as a general purpose warehouse.	10.1(3)	3	Building 649 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ¹ Also, floor staining associated with acid leaks in the forklift battery charging area were noted in EBS visual inspections. A 1-gallon hydraulic fluid spill was reported on August 11, 1995 in Bay 5. The Spill Team responded and cleaned up the spill area, and no further action was required. At the June 1998 meeting, the BCT agreed this parcel should change from an ECP Category 7 to a Category 3. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 10.5 is Building 550, a 120,000 square foot building erected in 1942 that was used as a general purpose warehouse.	10.5(3)	3	Building 550 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ¹ Also, floor staining associated with acid leaks in the forklift battery charging area were noted in EBS visual inspections. At the June 1998 meeting, the BCT agreed this parcel should change from an ECP Category 7 to a Category 3. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 11.2 is Building 529, a 120,000 square foot building erected in 1942 that was used as a general purpose warehouse.	11.2(3)	3	Storage of antifreeze, firefighting foam, and photographic chemicals was observed during the EBS visual inspection. The EBS documented no releases from these products. Also, Building 529 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ¹ Also, floor staining associated with acid leaks in the forklift battery charging area were noted in EBS visual inspections. At the June 1998 meeting, the BCT agreed this parcel should change from an ECP Category 7 to a Category 3. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.

Enclosure 2
Table 1 - Description of Property

Building Number and Property Description	Parcel Designation	Condition Category	Remedial Actions
Parcel 32.1 is the open land area north and west of Building 835, formerly open storage areas X02, X13 and X15.	32.1(3)	3	Parcel 32.1 was used for material storage including hazardous substances, predominately flammable materials, in 55-gallon drums. This parcel also contains railroad tracks associated with SS70/71 (facility-wide railroad tracks) that were sprayed with pesticides, herbicides, and waste oil containing pentachlorophenol (PCP) in the past. Two surface soil samples and two soil borings were taken as part of the BRAC sampling effort. Sample results indicated no levels exceeding BCT screening criteria. At the October 1997 meeting, the BCT agreed this parcel should change from an ECP Category 7 to a Category 3. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 7.2 is Building 249, a 120,000 square foot building erected in 1942 that was used during World War II as a storage warehouse for the Chemical Warfare Service until March 31, 1961. In subsequent years, it was used as a general purpose warehouse (food/textile storage).	7.2(4)	4	Building 249 was used by the U.S. Army Chemical Warfare Service for storage of a clothing treated with XXCC-3 impregnate (provided protection from chemical warfare materials). The U.S. Army Corps of Engineer - St. Louis District found no evidence of release or disposal at this building of chemical warfare material during research for preparation of the "Ordnance and Explosive Waste/Chemical Warfare Materials Archive Search Report for Memphis Defense Depot." The building may also have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ¹ Also, a battery acid spill was reported on April 15, 1993 on the north loading dock. The Spill Team responded and cleaned up the spill area, and no further action was required. At the June 1998 meeting, the BCT agreed this parcel should change from an ECP Category 7 to a Category 4. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.

Enclosure 2
Table 1 - Description of Property

Building Number and Property Description	Parcel Designation	Condition Category	Remedial Actions
Parcel 12.2 is Building 629, a 120,000 square foot building erected in 1942 that was used as a general purpose and hazardous materials warehouse.	12.2(4)	4	Building 629 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ¹ Building 629 was also the former 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 cleaned up the spill area, and no further remediation was required. Past releases include an unknown amount of hydrofluoric acid (fumes weakened pallets which collapsed and damaged the plastic 1-gallon containers, small amount released; Recoup personnel applied sodium bicarbonate, cleaned up spill area, repackaged materials, and no further action was required). At the June 1998 meeting, the BCT agreed this parcel should change from an ECP Category 7 to a Category 4. The soil surrounding Building 629 is associated with Remedial Investigation Site 57 and requires additional evaluation as part of the installation restoration program. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 32.2 - Building 835, a 156,800 square foot building erected in 1988 that was used as the hazardous material warehouse	32.2(4)	4	Building 835 warehoused many different types of hazardous substances in separated bays. Several spills, all less than the Reportable Quantity, were reported inside Building 835 and consisted of battery acid, hydrochloric acid, ammonium hydroxide, muriatic acid, sulfuric acid, orthodontic resin, phosphoric acid, cleaning compound solvent, microbicide, calcium hypochlorite, hydrofluoric acid, transmission fluid, benefin granular herbicide, sterilizer solution, ethanol and xylene. The Spill Team responded and cleaned up the spill areas, and no further action was required. To determine the impact of hazardous substance storage and releases inside the building, air sampling was performed in Building 835 in the winter of 1997. At the December 1997 meeting, the BCT reviewed the air sample results and determined that no health-based criteria were exceeded, so no further action was required. At the June 1998 meeting, the BCT agreed this parcel should change from an ECP Category 7 to a Category 4. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.

Enclosure 2
Table 1 - Description of Property

Building Number and Property Description	Parcel Designation	Condition Category	Remedial Actions
Parcel 2.7 is the open land area surrounding the Family Housing Units (Buildings 176, S178, 179, 181, S183 and 184).	2.7(5)	5	This parcel contains grassy areas that were treated with pesticides. This parcel was sampled and found to contain dieldrin at levels that exceeded BCT screening criteria ³ . A time-critical removal action that included removing dieldrin-impacted soil has been completed. Initial post-removal samples indicated dieldrin levels were below residential risk based criteria. The BCT must still review the removal action closure documentation and concur that the removal action is complete. Therefore, residential land use at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ²
Parcel 7.1 is the open land area surrounding Building 249.	7.1(6)	6	This parcel is associated with Screening Site (SS) 65 (XXCC-3, Building 249). This parcel also contains railroad tracks associated with SS70/71 (facility-wide railroad tracks) that were sprayed with pesticides, herbicides, and waste oil containing pentachlorophenol (PCP) in the past. Five surface soil samples and three soil borings were collected. Sample results indicated Poly Aromatic Hydrocarbons (PAHs) exceeded BCT screening criteria ³ . The grassy area in this parcel was also treated with pesticides. This parcel was sampled and found to contain cadmium, DDE and DDT. Due to the presence of PAHs and pesticides in soil samples, this parcel requires additional evaluation as part of the installation restoration program. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ²

Enclosure 2
Table 1 - Description of Property

Building Number and Property Description	Parcel Designation	Condition Category	Remedial Actions
Parcel 11.1 is the open land area surrounding Buildings 529, 530 and 630.	11.1(7)	7	This parcel contains railroad tracks associated with SS70/71 (facility-wide railroad tracks) that were sprayed with pesticides, herbicides, and waste oil containing pentachlorophenol (PCP) in the past. This parcel also contains grassy areas that were treated with pesticides and herbicides in the past. This parcel was sampled. Results indicated dieldrin slightly above BCT screening criteria ³ . Due to the presence of dieldrin in soil samples, this parcel requires additional evaluation as part of the installation restoration program. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ²
Parcel 12.1 is the open land area surrounding Building 629.	12.1(7)	7	This parcel is associated with Screening Site 57 (Building 629 - Former Hazardous Materials Storage). This parcel contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassy areas that were historically sprayed with herbicides and pesticides. Nine soil boring samples were taken at this parcel. Results indicated Poly Aromatic Hydrocarbons (PAHs), DDE and DDT at levels that exceeded BCT screening criteria ³ . Due to the presence of PAHs and pesticides, this parcel is currently under evaluation by the BCT as part of the installation restoration program. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ²

Enclosure 2
Table 1 - Description of Property

Building Number and Property Description	Parcel Designation	Condition Category	Remedial Actions
Parcel 24.3 is Building 770, a vehicle maintenance shop built in 1952, and T771, a public toilet built in 1945, as well as the open land area surrounding Buildings 770 and 771	24.3(7)	7	<p>This parcel is associated with Remedial Investigation (RI) site 34 (Underground Waste Oil Storage Tanks) and proposed No Further Action sites 30 (Paint Spray Booths), 40 (Safety Kleen Units) and 41 (Satellite Drum Accumulation Area). Several spills have been reported for the area surrounding Building 770, which included oil, PCB-containing liquid and a petroleum product. The Spill Team responded, applied absorbent and removed contaminated materials associated with these spills. Several underground storage tanks were removed from the area surrounding Building 770. During RI sampling conducted in the winter of 1997, four soil borings and four surface soil samples were collected. Results indicated chromium and Poly Aromatic Hydrocarbons (PAHs) at levels that exceeded BCT screening criteria³. Residue was removed from the paint spray booth and consisted of the air filters, therefore, no further action is required at the paint spray booth. The Safety-Kleen units were maintained by Safety-Kleen and removed upon closure. There is no evidence of release or disposal from these units; therefore, no further action is required at the Safety Kleen units. The satellite drum accumulation areas were also removed upon closure. There is no evidence of release or disposal at the satellite drum accumulation area, therefore, no further action is required. Due to the presence of metals and PAHs in soil samples, this parcel requires additional evaluation as part of the installation restoration program. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.²</p>

¹ Records indicate that many buildings that stored perishables or textiles during the Depot's history may have been fumigated to control pests. Also, buildings that stored hazardous materials may have residual impacts from releases. The BCT determined that a representative number of buildings should be sampled for hazardous substances in the air. The BCT reviewed these air sampling results at the December 1997 BCT meeting and determined that no further action was warranted or required.

² Provided the lessee strictly adheres to the Environmental Protection Provisions (Enclosure 5), including but not limited to Provision 14 - No subsurface disturbance, excavation, drilling or digging without prior written approval from the Government

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 response.

Enclosure 2
Table 1 - Description of Property

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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.

Category 5: Areas where release, disposal, and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, 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.

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

Building Number	Name of Hazardous Substance	Date of Storage, Release or Disposal	Remedial Actions
Parcel 2.7 - Open land area surrounding the Family Housing Units (Buildings 176, S178, 179, 181, S183 and 184)	Pesticides Herbicides	Exact start date unknown assumed facility activation in 1942 - September 1997	This parcel contains grassy areas that were treated with pesticides. This parcel was sampled and found to contain dieldrin at levels that exceeded BCT screening criteria ³ . A time-critical removal action that included removing dieldrin-impacted soil has been completed. Initial post-removal samples indicated dieldrin levels were below residential risk based criteria. The BCT must still review the removal action closure documentation and concur that the removal action is complete. Therefore, residential land use at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ²
Parcel 6.2 - Building 250	Pesticides (fumigants)	Exact start date unknown assumed facility activation in 1942 - September 1997	Building 250 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ² Also, floor staining associated with acid leaks in the forklift battery charging area were noted in EBS visual inspections. At the June 1998 meeting, the BCT agreed no further action was required at this parcel. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 6.4 - Building 350	Pesticides (fumigants) Battery acid	Exact start date unknown assumed facility activation in 1942 - September 1997	Building 350 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ² Also, floor staining associated with acid leaks in the forklift battery charging area were noted in EBS visual inspections. At the June 1998 meeting, the BCT agreed no further action was required at this parcel. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

Building Number	Name of Hazardous Substance	Date of Storage, Release or Disposal	Remedial Actions
Parcel 7.1 - Open land area surrounding Building 249	Pesticides	Exact start date unknown assumed facility activation in 1942 - September 1997	This parcel is associated with Screening Site (SS) 65 (XXCC-3 [clothing treatment for protection from chemical warfare materials], Building 249). This parcel also contains railroad tracks associated with SS70/71 (facility-wide railroad tracks) that were sprayed with pesticides, herbicides, and waste oil containing pentachlorophenol (PCP) in the past. Five surface soil samples and three soil borings were collected. Sample results indicated Poly Aromatic Hydrocarbons (PAHs) exceeded BCT screening criteria. The grassy area in this parcel was also treated with pesticides. This parcel was sampled and found to contain cadmium, DDE and DDT. Due to the presence of PAHs and pesticides in soil samples, this parcel requires additional evaluation as part of the installation restoration program. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 7.2 - Building 249	Pesticides (fumigants) Battery acid XXCC-3 impregnate	Exact start date unknown assumed facility activation in 1942 - September 1997	Building 249 was used by the U.S. Army Chemical Warfare Service for storage of a clothing treated with XXCC-3 impregnate (clothing treatment for protection from chemical warfare materials). The U.S. Army Corps of Engineer - St. Louis District found no evidence of release or disposal at this building of chemical warfare material during research for preparation of the "Ordnance and Explosive Waste/Chemical Warfare Materials Archive Search Report for Memphis Defense Depot." The building may also have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ² Also, a battery acid spill was reported on April 15, 1993 on the north loading dock. The Spill Team responded and cleaned up the spill area, and no further action was required. At the June 1998 meeting, the BCT agreed no further action was required at this parcel. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

Building Number	Name of Hazardous Substance	Date of Storage, Release or Disposal	Remedial Actions
Parcel 9.3 - Building 430	Pesticides (fumigation) Battery acid	Exact start date unknown assumed facility activation in 1942 - September 1997	Building 430 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ² Also, floor staining associated with acid leaks in the forklift battery charging area were noted in EBS visual inspections. At the June 1998 meeting, the BCT agreed no further action was required at this parcel. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 10.1 - Building 649	Pesticides (fumigation) Battery acid	Exact start date unknown assumed facility activation in 1942 - September 1997	Building 649 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ² Also, floor staining associated with acid leaks in the forklift battery charging area were noted in EBS visual inspections. A 1-gallon hydraulic fluid spill was reported on August 11, 1995 in Bay 5. The Spill Team responded and cleaned up the spill area, and no further action was required. The BCT reviewed this information and agreed that no further action was required at this parcel. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 10.5 - Building 550	Pesticides (fumigants) Battery acid	Exact start date unknown assumed facility activation in 1942 - September 1997	Building 550 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ² Also, floor staining associated with acid leaks in the forklift battery charging area were noted in EBS visual inspections. At the June 1998 meeting, the BCT agreed no further action was required at this parcel. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

Building Number	Name of Hazardous Substance	Date of Storage, Release or Disposal	Remedial Actions
Parcel 11.1 - Open land area surrounding Buildings 529, 530 and 630	Pesticides Herbicides	Exact start date unknown assumed facility activation in 1942 - September 1997	This parcel contains railroad tracks associated with SS70/71 (facility-wide railroad tracks) that were sprayed with pesticides, herbicides, and waste oil containing pentachlorophenol (PCP) in the past. This parcel also contains grassy areas that were treated with pesticides and herbicides in the past. This parcel was sampled. Results indicated dieldrin slightly above BCT screening criteria. Due to the presence of dieldrin in soil samples, this parcel requires additional evaluation as part of the installation restoration program. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 11.2 - Building 529	Pesticides (fumigants) Battery Acid Antifreeze Firefighting Foam Photographic Chemicals	Exact start date unknown assumed facility activation in 1942 - September 1997	Storage of antifreeze, firefighting foam, and photographic chemicals was observed during the EBS visual inspection. The EBS documented no releases from these products. Also, Building 529 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ² Also, floor staining associated with acid leaks in the forklift battery charging area were noted in EBS visual inspections. At the June 1998 meeting, the BCT agreed no further action was required at this parcel. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

Building Number	Name of Hazardous Substance	Date of Storage, Release or Disposal	Remedial Actions
Parcel 12.1 - Open land area surrounding Building 629	Pesticides	Exact start date unknown assumed facility activation in 1942 - September 1997	This parcel is associated with Screening Site 57 (Building 629 - Former Hazardous Materials Storage). This parcel contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassy areas that were historically sprayed with herbicides and pesticides. Nine soil boring samples were taken at this parcel. Results indicated Poly Aromatic Hydrocarbons (PAHs), DDE and DDT at levels that exceeded BCT screening criteria. Due to the presence of PAHs and pesticides, this parcel is currently under evaluation by the BCT as part of the installation restoration program. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment ¹
Parcel 12.2 - Building 629	Pesticides (fumigation) Herbicides, Oxidizers, Acids, Solvents	Exact start date unknown assumed facility activation in 1942 - September 1997	Building 629 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required ² Building 629 was also the former 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 cleaned up the spill area, and no further remediation was required. Past releases include an unknown amount of hydrofluoric acid (fumes weakened pallets which collapsed and damaged the plastic 1-gallon containers, small amount released, Recoup personnel applied sodium bicarbonate, cleaned up spill area, repackaged materials, and no further action was required). The soil surrounding Building 629 is associated with Remedial Investigation Site 57 and requires additional evaluation as part of the installation restoration program. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

Building Number	Name of Hazardous Substance	Date of Storage, Release or Disposal	Remedial Actions
Parcel 24.3 - Buildings 770 and 771 as well as the open land area in surrounding Buildings 770 and 771	Pesticides Antifreeze Parts cleaning solvents Petroleum, Oil and Lubricants	Exact start date unknown assumed facility activation in 1942 - September 1997	This parcel is associated with Remedial Investigation (RI) site 34 (Underground Waste Oil Storage Tanks) and proposed No Further Action sites 30 (Paint Spray Booths), 40 (Safety Kleen Units) and 41 (Satellite Drum Accumulation Area). Several spills have been reported for the area surrounding Building 770, which included non-PCB containing mineral oil (50 gal.), PCB-containing liquid (50 gal.) and a petroleum product (55 gal.). The Spill Team responded, applied absorbent and removed contaminated materials associated with these spills. Confirmatory samples were taken from the PCB-containing liquid spill and results indicated all contaminated soil had been removed. Several underground storage tanks were removed from the area surrounding Building 770. During RI sampling conducted in the winter of 1997, four soil borings and four surface soil samples were collected. Results indicated chromium and Poly Aromatic Hydrocarbons (PAHs) at levels that exceeded BCT screening criteria. Residue was removed from the paint spray booth and consisted of the air filters; therefore, no further action is required at the paint spray booth. The Safety-Kleen units were maintained by Safety-Kleen and removed upon closure. There is no evidence of release or disposal from these units; therefore, no further action is required at the Safety Kleen units. The satellite drum accumulation areas were also removed upon closure. There is no evidence of release or disposal at the satellite drum accumulation area; therefore, no further action is required. Due to the presence of metals and PAHs in soil samples, this parcel requires additional evaluation as part of the installation restoration program. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

Building Number	Name of Hazardous Substance	Date of Storage, Release or Disposal	Remedial Actions
Parcel 32.1 - Open land area north and west of Building 835	Pesticide Herbicide	Exact start date unknown assumed facility activation in 1942 until construction of Building 925 completed in 1992.	Parcel 32.1 was used for material storage including hazardous substances, predominately flammable materials, in 55-gallon drums. This parcel also contains railroad tracks associated with SS70/71 (facility-wide railroad tracks) that were sprayed with pesticides, herbicides, and waste oil containing pentachlorophenol (PCP) in the past. Two surface soil samples and two soil borings were taken as part of the BRAC sampling effort. Sample results indicated no hazardous substance levels exceeding BCT screening criteria, so no further action is required. At the October 1997 meeting, the BCT agreed this parcel should change to ECP Category 3. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 32.2 - Building 835	Battery acid, Hydrochloric acid, Ammonium hydroxide, Muriatic acid, Sulfuric acid, Orthodontic resin, Phosphoric acid, Cleaning compound solvent, Microbicide, Calcium hypochlorite, Hydrofluoric acid, Transmission fluid, Benefin granular herbicide, Sterilizer solution, Ethanol, Xylene	Storage: 1995 - September 1997 Spills reflected in this table occurred between 1990 and 1997.	Building 835 warehoused many different types of hazardous substances in separated bays. Several spills, all less than the Reportable Quantity, were reported inside Building 835 and consisted of battery acid (9 gal , 6 gal), hydrochloric acid (5 gal.), ammonium hydroxide (6 gal), muriatic acid (1.5 gal.), sulfuric acid (15 gal , 5 gal.), orthodontic resin (1 pt), phosphoric acid (2 qt.), cleaning compound solvent (2 5 gal.), microbicide (1 qt.), calcium hypochlorite (5 lb), hydrofluoric acid (1 gal), transmission fluid (10 gal.), benefin granular herbicide (containerized 25 damaged 40-LB bags), sterilizer solution (.5 gal.), ethanol (5 gal) and xylene (1 gal.). The Spill Team responded and cleaned up the spill areas, and no further action was required for these spill areas. To determine the impact of hazardous substance storage and releases inside the building, air sampling was performed in the winter of 1997. At the October 1997 meeting, the BCT reviewed the air sample results and determined that no health-based criteria were exceeded, so no further action was required. At the June 1998 meeting, the BCT agreed this parcel should change to an ECP Category 4. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.

¹ Provided the lessee strictly adheres to the Environmental Protection Provisions (Enclosure 5), including but not limited to Provision 14 - No subsurface disturbance, excavation, drilling or digging without prior written approval from the Government

Enclosure 3**Table 2 - Notification of Hazardous Substance Storage, Release or Disposal**

² Records indicate that many buildings that stored perishables or textiles during the Depot's history may have been fumigated to control pests. Also, buildings that stored hazardous materials may have residual impacts from releases. The BCT determined that a representative number of buildings should be sampled for hazardous substances in the air. The BCT reviewed these air sampling results at the December 1997 BCT meeting and determined that no further action was warranted or required.

Enclosure 4

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

Building Number	Name of Petroleum Product(s)	Date of Storage, Release, or Disposal	Remedial Actions
Parcel 24.3 - Open land area surrounding buildings 770 and 771; tanks associated with Building 770	Fuel (heating) oil Diesel fuel Used motor oil	<ul style="list-style-type: none"> •10,000-gallon heating oil UST operated between 1951 and 1994. •440-gallon gasoline UST operated between 1951 (assumed) and 1989. •1,000-gallon used motor oil UST operated between 1951 and 1989. •1,000-gallon used motor oil UST operated between 1951 and 1989. •11,155-gallon diesel fuel AST operated between 1951 and 1994. •11,155-gallon diesel fuel AST operated between 1951 and 1994. •Unknown quantity spill of oil at Building 770 northwest corner reported on August 23, 1993 •50-gallon spill of PCB-containing liquid reported on July 9, 1990 •55-gallon spill of petroleum at Building 770 west side reported on November 7, 1991 	<p>10,000-gallon tank removed in July 1994.</p> <p>440-gallon tank removed in December 1989.</p> <p>1,000-gallon tank removed in December 1989.</p> <p>1,000-gallon tank removed in December 1989.</p> <p>11,155-gallon tank removed in July 1994.</p> <p>11,155-gallon tank removed in July 1994.</p> <p>Spill Team responded. Applied absorbent, excavated stained soil, and removed soil and absorbent to appropriate disposal facility.</p> <p>Spill Team responded. Applied absorbent, excavated stained soil, and removed soil and absorbent to appropriate disposal facility.</p> <p>Spill Team responded. Applied absorbent, excavated stained soil, and removed soil and absorbent to appropriate disposal facility.</p>
Parcel 33.11 - open land area containing the 1,000-gallon diesel above ground storage tank adjacent to Building 756	Diesel fuel	<p>Exact start date unknown, assume building activation in 1956 until 1994</p> <ul style="list-style-type: none"> •AST operated from 1994 until present. 	<p>UST removed in July 1994. Soil samples revealed no total petroleum hydrocarbons above 20 ppm. No further action required.</p> <p>1,000-gallon diesel fuel AST currently in place.</p>

Enclosure 5

Environmental Protection Provisions

The following conditions will be placed in the lease to ensure there will be no unacceptable risk to human health or the environment and no interference to the ongoing Memphis Depot Caretaker installation restoration program (IRP) and to ensure regulatory requirements for the IRP and other compliance programs administered by the Army are met.

1. The sole purpose(s) for which the leased premises and any improvements thereon may be used, in the absence of prior written approval of the Government for any other use, is for uses similar or comparable to past or current activities of the Depot. These include light industry, storage, sorting operations, receiving, packaging and shipping, support activities, mechanical shop to support material handling equipment, training, education, and general office.
2. The Lessee shall neither transfer nor assign this Lease or any interest therein or any property on the leased premises, nor sublet the leased premises or any part thereof or any property thereon, nor grant any interest, privilege, or license whatsoever in connection with this Lease without the prior written consent of the Government. Such consent shall not be unreasonably withheld or delayed. Every sublease shall contain the Environmental Protection Provisions herein.
3. The Lessee and any sublessee shall comply with the applicable Federal, state, and local laws, regulations, and standards that are or may become applicable to Lessee's or sublessee's activities on the Leased Premises.
4. The Lessee and any sublessee shall be solely responsible for obtaining at its cost and expense any environmental permits required for its operations under the Lease, independent of any existing permits.
5. The Government's rights under this Lease specifically include the right for Government officials to inspect upon reasonable notice the Leased Premises for compliance with environmental, safety, and occupational health laws and regulations, whether or not the Government is responsible for enforcing them. Such inspections are without prejudice to the right of duly constituted enforcement officials to make such inspections. The Government normally will give the Lessee or sublessee twenty-four (24) hours prior notice of its intention to enter the Leased Premises unless it determines the entry is required for safety, environmental, operations, or security purposes. The Lessee shall have no claim on account of any entries against the United States or any officer, agent, employee, or contractor thereof.
6. The Government acknowledges that Defense Distribution Depot Memphis, Tennessee has been identified as a National Priorities List (NPL) Site under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended. The Lessee acknowledges that the Government has provided it with a copy of the Defense Distribution Depot Memphis, Tennessee Federal Facilities Agreement (FFA) entered into by the United States Environmental Protection Agency (EPA) Region 4, the State of Tennessee, and the Defense Logistics Agency effective March 1995, and will provide the Lessee with a copy of any amendments thereto. The Lessee agrees that should any conflict arise between the terms of such agreement as it presently exists or may be amended and the provisions of this Lease, the terms of the FFA will take precedence. The Lessee further agrees that notwithstanding any other

Enclosure 5

Environmental Protection Provisions

provisions of the Lease, the Government assumes no liability to the Lessee or its sublessees or licenses should implementation of the FFA interfere with the Lessee's or any sublessee's or licensee's use of the Leased Premises. The Lessee shall have no claim on account of any such interference against the United States or any officer, agent, employee or contractor thereof, other than for abatement of rent.

7. The Government, EPA, and TDEC and their officers, agents, employees, contractors, and subcontractors, have the right, upon reasonable notice to the Lessee and any sublessee, to enter upon the Leased Premises for the purposes enumerated in these subparagraphs, and for such other purposes consistent with any provision of the FFA:

(a) to conduct investigations and surveys, including, where necessary, drilling, soil and water sampling, test-pitting, testing soil borings and other activities related to the Defense Distribution Depot Memphis, Tennessee installation restoration program (IRP) or FFA;

(b) to inspect field activities of the Government and its contractors and subcontractors in implementing the Defense Distribution Depot Memphis, Tennessee IRP or FFA;

(c) to conduct any test or survey required by the EPA or TDEC relating to the implementation of the FFA or environmental conditions at the Leased Premises or to verify any data submitted to the EPA or TDEC by the Government relating to such conditions;

(d) to construct, operate, maintain, or undertake any other response or remedial action, as required or necessary under the Defense Distribution Depot Memphis, Tennessee IRP or FFA, including, but not limited to, monitoring wells, pumping wells, and treatment facilities;

(e) to conduct Environmental Compliance Assessment System Surveys (ECAS).

8. The Lessee and any sublessee shall comply with the provisions of any health and safety plan in effect under the IRP or the FFA during the course of any of the above described response or remedial actions. Any inspection, survey, investigation, or other response or remedial action will, to the extent practicable, be coordinated with a representative designated by the Lessee and any sublessee. The Lessee and any sublessee shall have no claim on account of such entries against the United States or any office, agent, employee, contractor, or subcontractor thereof. In addition, the Lessee and any sublessee shall comply with all applicable Federal, state, and local occupational safety and health regulations.

9. The Lessee further agrees that in the event of any assignment or sublease of the Leased Premises, it shall provide to the EPA and TDEC by certified mail a copy of the agreement or sublease of the Leased Premises (as the case may be) within fourteen (14) days after the effective date of such transaction. The Lessee may delete the financial terms and any other proprietary information from the copy of any agreement of assignment or sublease furnished pursuant to this condition.

Enclosure 5
Environmental Protection Provisions

10. The Lessee shall strictly comply with the hazardous waste requirements under the Resource Conservation and Recovery Act (RCRA) or its Tennessee equivalent. Except as specifically authorized by the Government in writing, the Lessee must provide at its own expense hazardous waste management facilities, complying with all laws and regulations. Government hazardous waste management facilities will not be available to the Lessee. Any violation of the requirements of this condition shall be deemed a material breach of this Lease.

11. Defense Distribution Depot Memphis, Tennessee accumulation points for hazardous and other wastes will not be used by the Lessee or any sublessee. Neither will the Lessee or sublessee permit its hazardous wastes to be commingled with hazardous waste of the Department of the Army.

12. The Lessee shall prepare and maintain a Government-approved plan for responding to hazardous waste, fuel, and other chemical spills prior to commencement of operations on the leased premises. Such a plan shall be independent of the Memphis Depot Caretaker plan and, except for initial fire response and/or spill containment, shall not rely on installation personnel or equipment. Should the Government provide any personnel or equipment, whether for initial fire response and/or spill containment, or otherwise on request of any Government officer conducting timely cleanup actions, the Lessee agrees to reimburse the Government for its costs.

13. The Lessee shall not construct or make or permit its sublessees or assigns to construct or make any alterations, additions, or improvements to, or installations upon or otherwise modify or alter the leased premises in any way which may adversely affect the Memphis Depot Caretaker environmental program, environmental cleanup, human health, or the environment, without the prior written consent of the Government. Such consent may include a requirement to provide the Government with a performance and payment bond satisfactory to it in all respects and other requirements deemed necessary to protect the interests of the Government. For construction or alterations, additions, modifications, improvements, or installations (collectively "work") in the proximity of operable units that are a part of a National Priorities List (NPL) site, such consent may include a requirement for written approval by the Government's Remedial Project Manager. Except as such written approval shall expressly provide otherwise, all such approved alterations, additions, modifications, improvements, and installations shall become Government property when annexed to the Leased Premises.

14. The Lessee shall not conduct or permit its sublessees to conduct any subsurface excavation, digging, drilling, or other disturbance of the surface without the prior written approval of the Government.

15. The Lessee shall strictly comply with the hazardous waste permit requirements under the Resource Conservation and Recovery Act (RCRA), or its state equivalent, and any other applicable laws, rules or regulations. The Lessee must provide at its own expense such hazardous waste storage facilities that comply with all laws and regulations as it may need for such storage. Any violation of the requirements of this provision shall be deemed a material breach of this Lease.

Enclosure 5

Environmental Protection Provisions

16. LEAD-BASED PAINT WARNING AND COVENANT:

(a) The Lessee is hereby informed and does acknowledge that all buildings on the Leased Premises, which were constructed or rehabilitated prior to 1978, are presumed to contain lead-based paint. Lead from paint, paint chips, and dust can pose health hazards if not managed properly. Before renting pre-1978 residential housing, lessors must disclose to lessees and sublessees the presence of lead-based paint and/or lead-based paint hazards therein. "Residential housing" means any housing constructed prior to 1978, except housing for the elderly (households reserved for and composed of one or more persons 62 years of age or more at the time of initial occupancy) or persons with disabilities (unless any child who is less than 6 years of age resides or is expected to reside in such housing) or any 0-bedroom dwelling. A risk assessment or inspection for possible lead-based paint hazards by the Lessee is recommended prior to lease.

(b) Available information concerning known lead-based paint and/or lead-based paint hazards, the location of lead-based paint and/or lead-based paint hazards, and the condition of painted surfaces is contained in the Environmental Baseline Survey that has been provided to the Lessee. Additionally, the following report pertaining to lead-based paint and/or lead-based paint hazards has been provided to the Lessee: Lead Based Paint Risk Assessment for DDMT (Barge, Waggoner, Sumner, and Cannon, December 1995, revised April 1996). Additionally, the Lessee has been provided with a copy of the federally-approved pamphlet on lead poisoning prevention. The Lessee hereby acknowledges receipt of all of the information described in this subparagraph

(c) The Lessee acknowledges that it has received the opportunity to conduct a risk assessment or inspection for the presence of lead-based paint and/or lead-based paint hazards prior to execution of this Lease.

(d) The Lessee shall not permit use of any buildings or structures on the Leased Premises for residential habitation without complying with this section and all applicable federal, state and local laws and regulations pertaining to lead-based paint and/or lead-based paint hazards. Prior to permitting the occupancy of residential housing, if required by law or regulation, the Lessee, at its sole expense, will abate and eliminate lead-based paint hazards in accordance with all applicable laws and regulations. The Lessee agrees to be responsible for any future remediation of lead-based paint found to be necessary on the Leased Premises.

(e) The Government assumes no liability for remediation or damages for personal injury, illness, disability, or death, to the Lessee, its successors or assigns, sublessees or to any other person, including members of the general public, arising from or incident to possession and/or use of any portion of the Leased Premises containing lead-based paint as residential housing. The Lessee further agrees to indemnify and hold harmless the Government, its officers, agents and employees, from and against all suits, claims, demands or actions, liabilities, judgments, costs and attorneys' fees arising out of, or in any manner predicated upon, personal injury, death or property damage resulting from, related to, caused by or arising out of the possession and/or use of any portion of the Leased Premises containing lead-based paint as residential housing. This section and the obligations of the Lessee hereunder shall survive the expiration or termination of this

Enclosure 5
Environmental Protection Provisions

482 335

Lease and any conveyance of the Leased Premises to the Lessee. The Lessee's obligation hereunder shall apply whenever the United States of America incurs costs or liabilities for actions giving rise to liability under this section.

17. NOTICE OF THE PRESENCE OF ASBESTOS AND COVENANT:

(a) The Lessee is hereby informed and does acknowledge that friable and non-friable asbestos or asbestos-containing materials (ACM) has been found on the Leased Premises, as described in the final base-wide EBS. The ACM on the Leased Premises does not currently pose a threat to human health or the environment. All friable asbestos that posed a risk to human health was either removed or encapsulated.

(b) The Lessee covenants and agrees that its use and occupancy of the Leased Premises will be in compliance with all applicable laws relating to asbestos; and that the Government assumes no liability for future remediation of asbestos or damages for personal injury, illness, disability, or death, to the Lessee, its successors or assigns, sublessees, or to any other person, including members of the general public, arising from or incident to the purchase, transportation, removal, handling, use, disposition, or other activity causing or leading to contact of any kind whatsoever with asbestos on the Leased Premises described in this Lease, whether the Lessee, its successors or assigns have properly warned or failed to properly warn the individual(s) injured. The Lessee agrees to be responsible for any future remediation of asbestos found to be necessary on the Leased Premises

18. NOTICE OF POLYCHLORINATED BIPHENYLS (PCBs) EQUIPMENT AND COVENANT:

(a) The Lessee is hereby informed and does acknowledge that equipment containing polychlorinated biphenyls (PCBs) might exist (overhead fluorescent light ballasts) on the Leased Premises, as described in the final base-wide EBS. All PCB-containing equipment has been properly labeled in accordance with applicable law and regulation. Any PCB contamination or spills related to such equipment has been properly remediated prior to execution of the Lease. The PCB equipment does not currently pose a threat to human health or the environment.

(b) Upon request, the Army agrees to furnish to the Lessee any and all records in its possession related to such PCB equipment necessary for the continued compliance by the Lessee with applicable laws and regulations related to the use and storage of PCBs or PCB-containing equipment.

(c) The Lessee covenants and agrees that its continued possession, use and management of any PCB-containing equipment will be in compliance with all applicable laws relating to PCBs and PCB-containing equipment, and that the Army assumes no liability for the remediation of PCB contamination or damages for personal injury, illness, disability or death to the Lessee, its successors or assigns, sublessees or to any other person, including members of the general public arising from or incident to sue, handling, management, disposition, or other activity causing or leading to contact of any kind whatsoever with PCBs or PCB-containing equipment, whether the

Enclosure 5

Environmental Protection Provisions

Lessee, its successors or assigns have been properly warned or failed to properly warn that individual(s) insured. The Lessee agrees to be responsible for any remediation of PCBs or PCB-containing equipment found to be necessary from its use and possession during the term of the Lease. This section and the obligations of the Lessee hereunder shall survive the expiration and termination of this Lease and any conveyance of the Leased Premises to Lessee.

19. The Lessee shall not use the Leased Premises for the storage or disposal of non-Department of Defense owned hazardous or toxic materials, as defined in 10 U.S.C. 2692, unless authorized under 10 U.S.C. 2692 and properly approved by the Government.

20. The Army may impose any additional environmental protection conditions and restrictions during the terms of this lease that it deems necessary by providing written notice of such conditions or restrictions to the Lessee.

21. The leased premises contain buildings (Buildings 249, 250, 349, 350, 429, 430, 449, 450, 529, 530, 549, 550, 629, 630, 649 and 650) that are eligible for listing in the National Register of Historic Places. Such properties will be maintained by the Lessee in accordance with the recommended approaches in the *Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings* (U.S. Department of the Interior, National Park Service 1992)(Secretary's Standards). The Lessee will notify the Department of the Army and the State Historic Preservation Officer (SHPO) of any proposed rehabilitation and structural or landscape alterations to these buildings or properties prior to undertaking said rehabilitation or alteration. Any approved rehabilitation or structural or landscape alteration to these buildings or properties must adhere to the Secretary's Standards. Within 30 days of receipt of such notification and adequate supporting documentation, the Army will notify the Lessee in writing that the undertaking conforms to the Secretary's Standards and that the Lessee may proceed or that the undertaking does not conform to the Secretary's Standards and that the Lessee may not proceed. If the Army determines that the undertaking does not meet the Secretary's Standards, the Army will, with the assistance of the Lessee, fulfill the requirements of Section 106 of the National Historic Preservation Act and its implementing regulations, *Protection of Historic Properties* (36 C.F.R. Part 800), in consultation with the Tennessee SHPO. The Lessee will not undertake the proposed action until the Army or the Tennessee SHPO notifies the Lessee that the requirements of Section 106 have been fulfilled and the Lessee may proceed. If the Army of the Tennessee SHPO objects to the Lessee's proposed undertaking, the Army will notify the Lessee that the proposed action may not proceed.

Enclosure 6

Regulatory/Public Comments and Responses for FOSL 7

Please find comments from the Environmental Protection Agency (EPA), Defense Logistics Agency (DLA) and Department of Army comments and Memphis Depot Caretaker responses for FOSL 7.

EPA Comments

1. Lease terms are required to be provided together with attendant lease restrictions. In the instant case, lease restrictions have been attached to the FOSL as Enclosure 5, but the remaining lease terms have not been provided. This information is decidedly pertinent to EPA's comments, required under CERCLA as amended by CERFA, as well as, DoD guidance. I am confident, based on the standard language contained herein, that the Army will comply with this provision via notification of the EPA upon the anticipation to execute a lease. We should make the Army aware that we expect a copy of the lease(s) inclusive of all lease terms and lease restrictions both prior to and after the lease's execution.

COMMENT NOTED - Provided is a copy of the Master Interim Lease that the United States has entered into with the Depot Redevelopment Corporation. The lessee to the United States, the Depot Redevelopment Corporation, is required per FOSL Environmental Protection Provision Number 9, to provide EPA and TDEC copies of any subsequent sublease.

2. Section 1 - Purpose: This section indicates that all proposed uses for this property are light industrial, storage or general office use. EPA should request that the Army also state that part of the property (Parcel 2.7) is intended for residential use.

COMMENT INCORPORATED.

3. Section 3.4 should be amended to add at the end of the paragraph: "The lease will include the PCB notification provision contained in the Environmental Protection Provisions (Enclosure 5).

COMMENT INCORPORATED.

4. Section 4 - Remediation: The choice of words in Section 4, Remediation, which reads: "Environmental contamination on the property described in this document does not present a hazard to leasing it" is confusing. I assume that the Army intended to state something like, "Environmental contamination on the property described in this document does not present a hazard to persons leasing it" or "Leasing will not interfere with any activities required in the remediation of the release or disposal of hazardous substances and/or petroleum products and their derivatives on these parcels." The Army should clarify or reword this.

COMMENT INCORPORATED (will use first suggestion).

5. The statement, "Regulators have concurred with DDMT that Buildings . . ." proceeds to list all the property in the FOSL.

Enclosure 6

Regulatory/Public Comments and Responses for FOSL 7

COMMENT INCORPORATED

6. Section 8, Finding of Suitability to Lease, states that requirements for light industrial use have been met. The Army should also state in this conclusion section that all requirements for residential use have been met for Parcel 2.7.

COMMENT INCORPORATED.

7. Though it is included within the Environmental Protection Provisions, we request that the Army state, in Section 8, that the leasing activities will not disrupt environmental (installation) restoration schedules and activities.

COMMENT NOTED. This type of statement should be made by the Army to regulators, not to a future lessee.

8. The Army should provide assurances that the leasing activities will not substantially delay any necessary response action at the property. Further, restrictions should be placed on the use necessary to ensure that required remedial investigations, response action, and oversight activities will not be disrupted. The facility should also commit itself to provide prospective tenants, as well as the EPA, notice of the results of ongoing investigations, if any.

COMMENT NOTED We believe that the proactive nature of the BRAC Cleanup Team and the environmental protection provisions provide this assurance

9. The 'Environmental Restoration, Defense, provision in the Department of Defense Appropriations Act of 1993 (H R. 5504, 102d Cong.) provides that if DoD transfers or leases real property to a state or the political subdivision of a state, the U.S. shall hold harmless, defend and indemnify the State or political subdivision from all claims, demands, losses, damages, liens, liabilities, injuries deaths, penalties, fines, lawsuits and other proceedings, judgments awards and costs and expenses arising out of, or in any manner predicated upon, the presence, release or threatened release of any hazardous substance, pollutant or contaminant resulting from DoD activities, including the activities of any lessee, licensee or other person on the property during any time that the property was under DoD control. The FOSL does not indicate the existence of such a provision, but it is a statutory imperative, that the lease agreement include such a provision

COMMENT NOTED. The suggested language is provided in the Master Interim Lease (sub-paragraph 15d). The proper reference is the DoD Authorization Act of 1993, not Appropriations Act

10. Enclosure 2, Category 1 Areas, Parcels 6.3, 9.2, 9.4, 9.5, 10 4, 10 6, 11.3 and 11.4: These parcels have been categorized as Category 1 areas. The description contained in Column 4- Remedial Actions of Enclosure 2 (Table 1 - Description of Property) did not indicate which of these eight parcels/buildings did, in fact, undergo sampling for fumigants. The last sentence in each parcel description stating that "Therefore, the performance of industrial and/or commercial

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 7

operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment" is, thus, a conclusion unsupported in the language of the document. The language in the property descriptions (and the language to the extent it is duplicated in Enclosure 3 (Table 2 - Notification of Hazardous Substance Storage, Release or Disposal)) should be revised and/or augmented to support the conclusion.

COMMENT NOTED. If the recurring statement is causing confusion, it may be deleted. Disclosure of fumigation is not required as is Lead Based Paint or Asbestos. The BCT, including the EPA, elected to sample a representative number of buildings that were either potentially fumigated with pesticides or had stored hazardous materials. Upon examination of these representative samples, the BCT concluded that there were no impacts that would pose unacceptable risks to future occupants. A footnote to Tables 1 and 2 will be made to explain the BCT's approach.

11. Please note that the protection language should be stated in the affirmative, i.e., "will not pose an unacceptable risk to human health or the environment" should be revised to read "will be protective of human health and the environment."

COMMENT NOTED. The Army does not agree with the proposed change because the term "protective" indicates steps being actively taken to protect human health. This is typically not the case. The BCT's review of parcel information merely indicates that there are no unacceptable sources of "environmental" risk.

12. Enclosure 2, Category 2 Areas, Parcel 33.11: There is an apparent discrepancy in the description of the release at this parcel. Section 3.3.1 states that "There is evidence that petroleum or petroleum products were released at . . . Parcel 33.11 outside of Building 756. It is assumed, unless otherwise noted, that the 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 remediation program." In contrast, Section 3.3.2 states, "There is evidence of petroleum product releases at parcel 33.11, but at levels that do not require cleanup." Further, Column 4-Remedial Actions, Enclosure 2 (Table 1 - Description of Property) reads: "There have been no documented releases for either tank, nor was there any evidence of disposal or migration of petroleum products from adjacent property. . . Results indicated less than 20 ppm of total petroleum hydrocarbons; no further remediation was required." The Army should clarify which statement accurately depicts the situation at Parcel 33.11. Furthermore, the Army should strike any references to "releases in excess of 55 gallons." CERFA makes no such reference to minimum reportable quantities of hazardous materials or petroleum products.

COMMENT INCORPORATED/NOTED. Text in Sections 3.31 and 3.32 will be changed accordingly. The reference to 55 gallons will be retained.

13. Also the protection language in column 4-Remedial Actions of Enclosure 2 (Table 1 - Description of Property) and the language as it is duplicated in Column 4-Remedial Actions of Enclosure 3 (Table 2 - Notification of Hazardous Substance Storage, Release or Disposal) should

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 7

be revised from "will not pose an unacceptable risk to human health or the environment" to read "will be protective of human health and the environment."

COMMENT NOTED. REFER TO COMMENT RESPONSE # 11.

14. Enclosure 2, Category 3 Areas, Parcels 6.2, 6.4, 9.3, 10.1, 10.5, 11.2 and 32.1: These parcels have been categorized as Category 3 areas. The description contained in Column 4-Remedial Actions of Enclosure 2 (Table 1 - Description of Property) did not indicate which of these seven parcels/buildings did, in fact, undergo sampling for fumigants. Thus, the last sentence in each parcel description stating that "Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment" is, thus, a conclusion unsupported in the language of the document. The language in the property descriptions (and the language to the extent it is duplicated in Enclosure 3 (Table 2 - Notification of Hazardous Substance Storage, Release or Disposal)) should be revised and/or augmented to support the conclusion.

COMMENT NOTED. REFER TO COMMENT RESPONSE # 10.

15. The protection language in column 4-Remedial Actions of Enclosure 2 (Table 1 - Description of Property) and the language as it is duplicated in Column 4-Remedial Actions of Enclosure 3 (Table 2 - Notification of Hazardous Substance Storage, Release or Disposal) should be revised from "will not pose an unacceptable risk to human health or the environment" to read "will be protective of human health and the environment "

COMMENT NOTED. REFER TO COMMENT RESPONSE #11

16 Enclosure 2, Parcel 7.2: The description contained in Column 4-Remedial Actions of Enclosure 2 (Table 1 - Description of Property) did not indicate whether the parcel/building did, in fact, undergo sampling for fumigants. The last sentence in each parcel description stating that "Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment" is, thus, a conclusion unsupported in the language of the document. The language in the property descriptions (and the language to the extent it is duplicated in Enclosure 3 (Table 2 - Notification of Hazardous Substance Storage, Release or Disposal)) should be revised and/or augmented to support the conclusion.

COMMENT NOTED. REFER TO COMMENT RESPONSE # 10.

17. The protection language in column 4-Remedial Actions of Enclosure 2 (Table 1 - Description of Property) and the language as it is duplicated in Column 4-Remedial Actions of Enclosure 3 (Table 2 - Notification of Hazardous Substance Storage, Release or Disposal) should be revised from "will not pose an unacceptable risk to human health or the environment" to read "will be protective of human health and the environment."

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 7

COMMENT NOTED. REFER TO COMMENT RESPONSE # 11.

18. Enclosure 2, Parcel 12.2: The description contained in Column 4-Remedial Actions of Enclosure 2 (Table 1 - Description of Property) did not indicate whether the parcel/building did, in fact, undergo sampling for fumigants. The last sentence in each parcel description stating that "Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment" is, thus, a conclusion unsupported in the language of the document. The language in the property descriptions (and the language to the extent it is duplicated in Enclosure 3 (Table 2 - Notification of Hazardous Substance Storage, Release or Disposal)) should be revised and/or augmented to support the conclusion.

COMMENT NOTED. REFER TO COMMENT RESPONSE # 10.

19. The protection language in column 4-Remedial Actions of Enclosure 2 (Table 1 - Description of Property) and the language as it is duplicated in Column 4-Remedial Actions of Enclosure 3 (Table 2 - Notification of Hazardous Substance Storage, Release or Disposal) should be revised from "will not pose an unacceptable risk to human health or the environment" to read "will be protective of human health and the environment."

COMMENT NOTED. REFER TO COMMENT RESPONSE # 11.

20. Enclosure 2, Parcel 32.2: The protection language in column 4-Remedial Actions of Enclosure 2 (Table 1 - Description of Property) and the language as it is duplicated in Column 4-Remedial Actions of Enclosure 3 (Table 2 - Notification of Hazardous Substance Storage, Release or Disposal) should be revised from "will not pose an unacceptable risk to human health or the environment" to read "will be protective of human health and the environment."

COMMENT NOTED. REFER TO COMMENT RESPONSE #11.

21. Parcels 2.7 and 7.1: Parcel 2.7 and 7.1 have been categorized as Category 6 areas, indicating "[a]reas where release, disposal and/or migration of hazardous substances has occurred, but required actions have not yet been implemented." The statement made in the FOSL that "[a]ppropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment," is consistent with the Army's requirements. The Army should, however, back up this statement with the specific measures that will effect this protection, both in the Lease and in the final FOSL. EPA does not concur with a finding of suitability to lease these parcels until the removal or remediation close-out documents have been furnished, reviewed and approved by EPA.

COMMENT NOTED. The Army believes the lease restriction in the Master Interim Lease and any subsequent FOSLs is adequate. The EPA participates actively through the BRAC Cleanup Team to make and oversee the cleanup decisions.

Enclosure 6

Regulatory/Public Comments and Responses for FOSL 7

22. Enclosure 2, Parcel 2.7: Parcel 2.7 is comprised of the open land surrounding buildings 176, S178, 179, 181, S183 and 184, which were discussed in the FOSL #1. The use proposed for the buildings is residential. The language in Column 4-Remedial Actions of Enclosure 2, Table 1 (Description of Property), which is duplicated in Column 4-Remedial Actions of Enclosure 3, Table 2 (Notification of Hazardous Substance Storage, Release or Disposal), stating "Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment" should be revised to express its intended use as residential.

COMMENT INCORPORATED. Text will be changed as indicated.

23. The protection language should be revised from "will not pose an unacceptable risk to human health or the environment" to read "will be protective of human health and the environment," and, further, should be protective of residential use, not merely industrial and/or commercial use.

COMMENT NOTED. REFER TO COMMENT RESPONSE #11.

24. Enclosure 2, Parcel 7.1: The protection language should be revised from "will not pose an unacceptable risk to human health or the environment" to read "will be protective of human health and the environment."

COMMENT NOTED. REFER TO COMMENT RESPONSE # 11.

25. Parcels 11.1, 12.1 and 24.3: These parcels have been placed in Category 7 which indicates "[a]reas that are not yet evaluated or require additional evaluation." In all parcels sampling indicated a release of some type above BCT screening criteria. As with the Category 6 parcels, we should request that they provide the language describing the specific measures which they intend to employ to ensure the protection of human health and the environment during the remediation process, both in the Lease and in the final FOSL.

COMMENT NOTED. Inclusion of the suggested language is impossible until the BCT, including the EPA, can select remedial alternatives.

26. The final sentence in Column 4-Remedial Actions, Enclosure 2 (Table 1 - Description of Property) and its counterpart in Enclosure 3, beginning with "Therefore, . . ." is conclusory without support in the language. The descriptions should be revised and/or augmented to support the conclusion.

COMMENT NOTED.

27. The protection language should be revised from "will not pose an unacceptable risk to human health or the environment" to read "will be protective of human health and the environment."

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 7

COMMENT NOTED. REFER TO COMMENT RESPONSE # 11.

28. Enclosure 5 - Environmental Protection Provisions, Paragraph 16: The following language was used in FOSL 6, but was omitted from this FOSL. It seems we should err on the side of protection since we do have a proposed residential use as a facility for housing the homeless. If there is no technical reason why the following language was omitted, EPA requests the inclusion of the following language at the end of paragraph 16(a). "Lead from paint, paint chips and dust can pose health hazards if not managed properly. Such property may present exposure to lead from lead-based paint that may place young children at risk of developing lead poisoning. Lead poisoning in young children may produce permanent neurological damage, including learning disabilities, reduced intelligence quotient, behavioral problems and impaired memory. A risk assessment or inspection for possible lead-based paint hazards is recommended prior to lease."

COMMENT NOTED. Do not concur. There are no residential units in this FOSL, and the four units from FOSL 1 are being abated this fall. The perspective lessee is fully informed of the BCT's abatement plan. The perspective lessee has also conducted an independent LBP survey.

29. Enclosure 5, Paragraph 18: Paragraph 18 from FOSL 6 has been entirely omitted from FOSL 7. We request the inclusion of the following language, is based on a presumption that there is not a supportable technical rationale for its exclusion:

18. NOTICE OF POLYCHLORINATED BIPHENYLS (PCBs) EQUIPMENT AND COVENANT:

(a) The Lessee is hereby informed and does acknowledge that equipment containing polychlorinated biphenyls (PCBs) might exist (overhead light ballasts) on the Property, as described in the final base-wide EBS. All PCB-containing equipment has been properly labeled in accordance with applicable law and regulation. Any PCB contamination or spills related to such equipment has been properly remediated prior to execution of the Lease. The PCB equipment does not currently pose a threat to human health or the environment.

(b) Upon request, the Army agrees to furnish to the Lessee any and all records in its possession related to such PCB equipment necessary for the continued compliance by the Lessee with applicable laws and regulations related to the use and storage of PCBs or PCB-containing equipment

(c) The Lessee covenants and agrees that its continued possession, use and management of any PCB-containing equipment will be in compliance with all applicable laws relating to PCBs and PCB-containing equipment, and that the Army assumes no liability for the remediation of PCB contamination or damages for personal injury, illness, disability, or death to the Lessee, its successors or assigns, sublessees or to any other person, including members of the general public, arising from or incident to sue, handling, management, disposition, or other activity causing or leading to contact of any kind whatsoever with PCBs or PCB-containing equipment, whether the Lessee, its successors or assigns have properly warned or failed to properly warn the individual(s)

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 7

insured. The Lessee agrees to be responsible for any remediation of PCBs or PCB-containing equipment found to be necessary from its use or possession during the term of the Lease. This section and the obligations of the Lessee hereunder shall survive the expiration or termination of this lease and any conveyance of the Leased Premises to Lessee.

If this paragraph is inserted, the paragraphs originally numbered 18 through 20 should be renumbered paragraphs 19 through 21.

COMMENT INCORPORATED. Will include covenant in lieu of explaining rational for omission.

30. The FOSL is acceptable as drafted save for its draft status and the fact that it must meet the below delineated criteria in order to comport with DoD guidance and applicable Laws. The final FOSL will not refer to releases of "reportable quantities" of hazardous materials or "greater than 55 gallons of petroleum products" or any other minimum amounts not specifically noted in CERCLA paragraph 120.

COMMENT NOTED. Army approved guidance language requires these statements. No other source or requirement prohibits these statement.

31. Prior to final submission of comments on the FOSL, final documents must be provided, as well as a copy of the attendant, proposed lease.

COMMENT NOTED DO NOT CONCUR - There are no proposed subleases at this time. The Depot Redevelopment Corporation will provide EPA and TDEC subleases upon their completion. The Master Interim Lease currently in place is being provided again.

32. The final lease must provide notice of duration and quantity of hazardous substance released, disposed or stored.

COMMENT NOTED. Existing tables and text are acceptable

33. Correction of the appropriate uses of the property to include residential use for Parcel 2.7, and inclusion of a statement that all requirements for residential use have been met.

COMMENT INCORPORATED.

34. Listing of the specific lease restrictions

COMMENT NOTED The specific lease restrictions are provided in the Master Interim Lease and in the FOSL.

35. Description of specific measures which will be taken to ensure that any future remediation activities will not be disrupted, both in the FOSL and Lease.

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 7

COMMENT NOTED. This provision is in the Master Interim Lease and in FOSL 7 as Environmental Protection Provision Number 7.

36. Description of specific "appropriate health and safety measures" to ensure the protection of human health and the environment during remediation activities, both in the FOSL and Lease.

COMMENT NOTED. Health and Safety measures are planned and implemented per Army Regulations and OSHA requirements. The BCT oversees this work.

37. Hold harmless statement consistent with ER, D 1993 for leasing to a state or any political subdivision of a state.

COMMENT NOTED. This statement is provided in Master Interim Lease paragraph 15D.

38. Complete notice of all hazardous substances, as identified in the FOSL and EBS, must be given in the lease/contract.

COMMENT NOTED. Existing tables and text are acceptable.

39. DoD completes removal activities on the Category 6 parcels.

COMMENT NOTED. The Army has the right to lease Category 6 parcels prior to completion of all removal activities.

40. If the military chooses not to respond to these comments, EPA should consider characterizing our comments as "unresolved regulatory comments" pursuant to DoD policy on FOSLs, and have said comments placed as an attachment to the lease agreement

COMMENT NOTED. EPA, TDEC and public comments and the resulting responses are included in final FOSLs.

41. EPA requests executed leases by the lessee to ensure the inclusion of any unresolved regulatory comments and in order to properly augment our records.

COMMENT NOTED. This provision is included in the Master Interim Lease and is the responsibility of the Depot Redevelopment Corporation.

42. DoD should be placed on notice that their failure to comply with the above-delineated CERCLA requirements, may subject the Facility to citizen suits under CERCLA § 310 for " failure to perform specified, non-discretionary duties."

COMMENT NOTED

1. Paragraph 3.2, page 3, lines 6-9. Change "It is assumed, unless otherwise noted, that 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." to "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."

COMMENT INCORPORATED.

HQ DLA, CAAE (Karen Moran)

1. Page 3, first line, add colon so it reads "substances were released in: buildings 249, . . . and 835; the open land....." in order to make it clearer where the list starts.

COMMENT INCORPORATED.

2. Page 3, first para, 3rd line from end, sentence beginning "These activities...." Doesn't this simply restate Provision #14? Is this intentional? (That is OK, it is an important point, just checking to see if that is the intention.) Same comment applies in other paragraphs.

COMMENT NOTED. EPA required this language prior to approving the "no risk to human health or the environment" language.

3. Page 3, 2nd para first line, delete "in excess of 55 gallons" as this is covered in the third sentence, or reword in some other way to make clear whether we are stating that it was in excess or if we are simply saying that we assume it was in excess

COMMENT INCORPORATED. Removed the third sentence, "It is assumed this storage was in excess of 55 gallons"

4. Page 3, third paragraph. Should we simplify the beginning and increase initial comprehension by stating that none of the Bldg 770 tanks had releases (we could of course still follow this up with the listing)?

COMMENT INCORPORATED.

5. Page 4, section 3.4. Should the Bldg 770 spill in table 3, encl 4, be mentioned?

COMMENT NOTED. Section 3.4 included the following description of the spill: "On July 9, 1990, a 50-gallon PCB-containing liquid spill was reported at Building 770. The Spill Team

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 7

HQ DLA Legal

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 7

responded, applied absorbent, excavated all stained soil and removed soil and absorbent to the appropriate disposal facility."

6. Page 6, first paragraph. In addressing the asbestos provisions, should we specify provision 17 as we specified provision 14 earlier? Same comment applies in subsequent paragraphs.

COMMENT NOTED. In the Hazardous Substance section, EPA required the Provision 14 language regarding no excavation to be able to say there would be no risk to human health and the environment. Provision 17 does not provide a basis for no risk.

7. Page 7, last paragraph. The last sentence is very long and more confusing than it needs to be – suggest rewording so it starts with the "Regulators have concurred that the following do not pose risks above.....Provisions: " followed by the long list

COMMENT INCORPORATED.

8. Encl 1 - This 2 page map is excellent for clearly summarizing parcels in a confusing set.

COMMENT NOTED.

9. Encl 2, page 3 (Generic comment that applies to other sections), first section, fifth sentence. Reword to indicate simply what category the parcel should be, not that it was changed, using "should be" instead of "should change to."

COMMENT NOTED. Parcel began process as an ECP Category 7 and was changed to a 3. Changed sentence to read: "At the June (or October, as appropriate) 1998 meeting, the BCT agreed this parcel should change from an ECP Category 7 to a Category 3 (or 4, as appropriate)"

10. Encl 2, page 4, first section. The statement about the BCT changing the ECP category begs the question of what the rationale was for disregarding the note in the EBS about the acid stains. Suggest adding something. (Generic comment where this instance is repeated in other sections.)

COMMENT NOTED. The BCT did not "disregard" the statement regarding acid stains. The BCT agreed on a 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 response.) instead of a Category 1 due to the acid staining

11. Encl 2, page 5, second section, first sentence. Give some explanation of what impregnite is, i.e., a fire retardant, a pesticide, etc

COMMENTED INCORPORATED.

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 7

12. Encl 2, page 6, first section. The hydrofluoric acid spill is covered in more detail than most – is this necessary? {this comment also applies to encl 3, page five second section.} Also add the footnote # 1 at the end, as was done in the next sections.

COMMENT NOTED. Records indicate a release of an unknown amount of hydrofluoric acid. In order to avoid reportable quantity questions, more information regarding this release was provided. Footnote #1 pertains to areas where a decision that further action, whether removal or further investigation, is necessary.

13. Encl 2, page 7, last section, last sentence. Why is it relevant to address performing industrial/commercial operations when the area is to be used for residential purposes? Will this be an interim use?

COMMENT NOTED. Changed to “residential land use.”

14. Encl 3, page 1, first section, last sentence – same comment as directly above.

COMMENT NOTED. Changed to “residential land use.”

15. Encl 3, page 2 Once again, the three references to XXCC-3 or impregnate need some explanation.

COMMENT INCORPORATED.

16. Encl 3, page 4, last section Wouldn't it be better to say that the BCT determined that no further action was required at this parcel, as in earlier sections?

COMMENT INCORPORATED.

17 Encl 3, page 6, 4th sentence from the end. Reword to read "no further action is required FOR THAT AREA " (Caps added for emphasis only.)

COMMENT INCORPORATED.

Department of Army Comments
AMC (John Farrar)

1. Paragraph 1. At the end of the first sentence it reads “or residential (Parcel 2 7).” Suggest adding the word “only” after the 2.7 to reinforce the fact that it is only in this one parcel where residential will be allowed

COMMENT INCORPORATED.

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 7

2. Paragraph 2. In some cases (not all), the description defines the land around the buildings as a number such as 7, 12, 11, etc. However, it is my understanding that the entire parcel has this designation (including building) and that the land around the building is called 7.1, 12.1., 11.1, etc. Need to refer to parcels in the same manner to prevent confusion.

COMMENT INCORPORATED.

3. Paragraph 3.1. Is parcel 33.11 a portion of Parcel 33.1 which has been defined separately to be the portion of land that will go with the 1000-gallon fuel tank?

COMMENT NOTED. Parcel 33.11 is the parcel that contains the fuel tank. The additional references to the parcel in that line will be removed.

4. Paragraph 3.1. At Parcel 32.1 we say "Open land area in Parcel 32.1...." Yet, in Parcel 7.1, 2.7, 11.1 and 12.1 we say "Open land area in Parcel 7...", etc. Why the difference?

COMMENT NOTED. Parcels 7 1, 2.7, 11.1 and 12.1 are the land areas that when added with the buildings make up Parcels 7, 2, 11 and 12. Parcel 32 includes land areas other than Parcel 32.1, for example Parcel 32.2 (which is not in this FOSL) that also contains land areas in Parcel 32, but not in Parcel 32.1. Parcel 32.1 is strictly the land area north and west of Building 835. The second reference to 32.1 in this line will be removed.

5. If any changes are made in the description of the property in the paragraph above, we need to reflect the same changes in paragraph 3 2

COMMENT INCORPORATED

6 Paragraph 3.3.2 At the beginning of the first sentence I would change it to read as follows "In Parcel 24 3, outside of Building 770, ..."

COMMENT INCORPORATED.

7. Paragraph 3.3.2. At the beginning of the second sentence I would change to read as follows: "In Parcel 33.11, outside of Building".

COMMENT NOTED. The second sentence deals with the Building 770 USTs/ASTs. The third sentence begins as requested

8. Paragraph 3.5. Building 249 - I assume that the Marble Floor Tile does not have asbestos but rather the mastic that holds them to the floor. If this is the case, revise to reflect

COMMENT NOTED. The floor tiles also contain asbestos The term "marble" is associated with the color, not the material.

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 7

9. Paragraph 3.5. Building 250 - Do we know what type of floor tiles?

COMMENT NOTED. The color was not reflected in the Asbestos Survey.

10. Paragraph 3.5. Building 349 - Do we know what type of floor tiles?

COMMENT NOTED. The color was not reflected in the Asbestos Survey

11. Paragraph 3.5. Building 449 - Assume it is the mastic that is holding down the marble tiles and not the marble itself?

COMMENT NOTED. The mastic did not meet the definition of asbestos containing materials. The floor tiles also contain asbestos. The term "marble" is associated with the color, not the material.

12. Paragraph 3.5. Building 549 - Assume the mastic should also be listed as having asbestos?

COMMENT NOTED. The mastic did not meet the definition of asbestos containing materials.

13. Paragraph 3.5. Building 629 - Should mastic be listed along with the floor tiles?

COMMENT NOTED. The mastic did not meet the definition of asbestos containing materials

14. Paragraph 3.5. Building 630 - Add mastic to floor tile?

COMMENT NOTED. The mastic did not meet the definition of asbestos containing materials

15 Paragraph 3 5 Building 649 - Add mastic to floor tile?

COMMENT NOTED. The mastic did not meet the definition of asbestos containing materials.

16. Paragraph 3.5. Building 770 - Add mastic to floor tile?

COMMENT NOTED. The mastic did not meet the definition of asbestos containing materials.

17. Should Building 835 be shown on this list? I ask because all other buildings are listed except for 835.

COMMENT NOTED. No asbestos containing materials were identified in Building 835. This section lists only buildings with asbestos containing materials.

18 Paragraph 3.6. It states that only two of the buildings were built prior to 1978 However, the Description of Property at Enclosure 2, Table 1 shows that the majority of the buildings were built prior to 1978.

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 7

COMMENT INCORPORATED.

19. Paragraph 3.7. I would leave out the word "surrounding" in this sentence. It makes it sound like a statement is being made about the land outside of the area that FOSL 7 is for.

COMMENT NOTED. Did not identify the word "surrounding" in Paragraph 3.7. Did identify it in Paragraph 3.9 Unexploded Ordnance, and made the revision there.

20. Paragraph 4. In the second sentence it states: "In addition, environmental conditions on adjacent property do not present a hazard to the leasing of the property." Can we make this statement when (1) Some of the adjacent property is outside of the control of the Army; (2) I doubt if a FOSL has been done for all of the adjacent property. If we need to make this statement, we need to provide the necessary documentation to support it.

COMMENT NOTED. This language is from Army's FOSL guidance. If Army Materiel Command requires a change in this language, please provide alternate language.

21. Paragraph 5. Make a positive statement in the second sentence. These issues will be resolved prior to the execution of this document

COMMENT INCORPORATED

22. Enclosure 1. Change this section to match any changes that are made to descriptions of property, etc.

COMMENT INCORPORATED

23. Enclosure 1. In some of these descriptions it states "Parcel 7.1 includes the open land area in Parcel 7 surrounding Building 249." This makes it sound like it is something more than the land surrounding the building. Also, I thought the parcel itself was being described as 7.1, so why are you referring to Parcel 7? It goes further to say, "Parcel 7.2 includes Building 249 only." Is not Parcel 7.2 Building 249? Therefore, what else could it include? It may be clearer to say "Parcel 7.2 (Building 249)."

COMMENT NOTED. This language came about from comments on earlier FOSLs to avoid confusion regarding exactly what each parcel contained. Think of Parcel 7 as the umbrella covering Parcels 7.1 and 7.2. Parcel 7.1 is only the land in Parcel 7, not land in Parcels 6 or 8 which are adjacent to Parcel 7, and that surround the building, which is Parcel 7.2. Parcels 7.1 and 7.2 make up the entire Parcel 7, which is different from Parcels 6 and 8. The references to the "umbrella" parcels will be eliminated

24. Enclosure 2, Table 1. Same statement as above where the word "includes" is used.

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 7

COMMENT NOTED.

25. Enclosure 2, Table 1. In Parcel 9.4, strike out the word "for" under Building Number and Property Description.

COMMENT INCORPORATED.

26. Enclosure 2, Table 1, Parcel 33.11 - In the fourth sentence under Remedial Actions we state "... no documented releases...nor was there any evidence of disposal or migration of petroleum products from adjacent property." Does this need to be stated? We have certainly had releases from adjacent property within DDMT. Also this is talking about migration "from" adjacent property, not "to" adjacent property.

COMMENT NOTED. In order to consider this parcel a category 2, the statement must be made that no other petroleum products or hazardous substances have impacted this parcel, either from releases, disposal or from migration to this parcel from other adjacent parcels where disposal or releases may have occurred.

27. Enclosure 2, Table 1, Parcel 7.2 - Under Remedial Actions, the Category 3 (fourth line from bottom) should be a Category 4.

COMMENT INCORPORATED

28. Enclosure 2, Table 1, Parcel 12.2 - I assume 12.2 is Building 629. If that is the case, do we need the third sentence from the bottom that speaks to the ground surrounding Building 629? This should be under Parcel 12.1 that is the ground surrounding 629

COMMENT NOTED. The tenant should be aware that the land surrounding the building is part of the restoration program and will undergo further evaluation that may result in a remedial action. Therefore, the information regarding the land surrounding the building should be included in the building's description

29. Enclosure 2, Table 1, Parcel 7.1. Based upon the text under Remedial Actions, this parcel should be a Category 7 instead of Category 6.

COMMENT NOTED. The BRAC Cleanup Team concurred that this area contained a "hotspot" associated with restoration program site 70, All Railroad Tracks, and will probably undergo some type of remedial action. Even though the parcel will be further evaluated, some type of action will probably occur.

30. Enclosure 2, Table 1, Parcel 2.7. Since work has already begun on removing the topsoil, it would appear that this should be a Category 5 instead of Category 6.

Enclosure 6

Regulatory/Public Comments and Responses for FOSL 7

COMMENT NOTED. This action has since been completed. The BRAC Cleanup Team expects this parcel to change to a category 4 upon receipt and acceptance of the post removal report in November/December.

31. Enclosure 3. Some of the parcels say building "only" instead of "includes" as shown in Enclosure 2. Need to confirm which is correct and be consistent.

COMMENT INCORPORATED.

32. Enclosure 3, Parcel 12.2. Should the sentence regarding the land surrounding Building 629 be deleted since it does not apply to this parcel and is covered where the land surrounding the building is addressed.

COMMENT NOTED. The tenant should be aware that the land surrounding the building is part of the restoration program and will undergo further evaluation that may result in a remedial action. Therefore, the information regarding the land surrounding the building should be included in the building's description

33. Enclosure 5. The last sentence on page 6 - Is this really what we want to say? Perhaps this is OK with the SHPO but I would think the Army would always want to have to give a response, positive or negative Perhaps this needs to be discussed further

COMMENT INCORPORATED Revised text to concur with the Memorandum of Agreement concerning historical properties at the former Defense Distribution Depot Memphis, Tennessee signed by the Department of Army, Advisory Council on Historic Places and the Tennessee State Historic Preservation Officer

DAIM-BO Comments

1. FOSL #7 is legally sufficient We recommend, however, that the following changes be made.

COMMENT NOTED

2. Section 5 (Page 9) - Section needs to be upgraded to reflect that regulators comments were received and that some are unresolved.

COMMENT INCORPORATED. According to EPA's comments, unresolved comments would be those that we did not respond to. We have responded to all of EPA's comments; therefore, we do not consider any to be unresolved.

3. Enclosure 5, Paragraph 16. Lead-based paint warning and covenant. It appears that we have incorrectly used the "non-residential" lead-based paint warning and covenant for this FOSL. Parcel 2.7 (land surrounding the residential housing discussed in FOSL 1) is arguable residential. If the buildings in Parcel 2 7 are utilized for residential housing, the land surrounding these

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 7

buildings, including the yards, flower beds, etc. will have impacts associated with chipping and peeling lead-based paint. To that end, we acknowledged and incorporated EPA's request that part of the property (Parcel 2.7) is residential (Enclosure 6, Page 1, Comments 2 and 33). Accordingly, the model warning and covenants for lead-based paint on residential property should be utilized.

COMMENT INCORPORATED.

Enclosure 7 References

I. The statutory and regulatory requirements relating to FOST/FOSLs are as follows:

CERCLA §120(h), 42 U.S.C. §9620(h) - Property Transferred by Federal Agencies

10 U.S.C. § 2667(f) as amended by section 2906 of the FY 94 Defense Authorization Act requiring DOD and EPA to consult on FOSL procedures

40 CFR PART 373 - Reporting Hazardous Substance Activity when Selling or Transferring Federal Real Property.

II. The DOD Guidance relating to FOST/FOSLs is as follows:

DOD Guidance on the Environmental Review Process to Reach a Finding of Suitability to Transfer (FOST) for Property Where Release or Disposal has Occurred, dated 1 June 1994.

DOD Guidance on the Environmental Review Process to Reach a Finding of Suitability to Transfer (FOST) for Property Where No Release or Disposal has Occurred, dated 1 June 1994.

DOD Policy on the Environmental Review Process to Reach a Finding of Suitability to Lease (FOSL), dated 18 May 1996.

DOD Fast Track to FOST - A Guide to Determining if Property is Environmentally Suitable to Transfer , July 1997

DOD Fact Sheet – A Field Guide to FOSL, Fall 1996

DOD Memorandum, Subject. Clarification of “Uncontaminated” Environmental Condition of Property at Base Realignment and Closure (BRAC) Installations, dated 21 October 1996

DOD Memorandum, Subject. Asbestos, Lead paint and Radon Policies at BRAC Properties, dated 31 October 1994

III. U.S. Environmental Protection Agency (EPA) Guidance

Guidance for Evaluation of Federal Agency Demonstrations that Remedial Actions are Operating Properly and Successfully Under CERCLA Section 120(h)(3), (Interim) dated August 1996

EPA Memorandum, Subject. Military Base Closures: Guidance on EPA concurrence in the Identification of Uncontaminated Parcels under CERCLA Section 120(h)(4), re-issued March 27, 1997

Enclosure 7 References

IV. Department of the Army Guidance

AR 200-1, Environmental Protection and Enhancement, dated 21 February 1997

DAIM-BO Memorandum, Subject: Clarification of Meaning of Uncontaminated Property for Purposes of Transfer by the United States, dated 9 December 1996

V. WWW BRAC Sites

1. DOD Sites –

DOD Base Closure and Transition Office –
<http://emissary.acq.osd.mil/bctoweb/bctohome.nsf>

DOD Environmental Base Realignment and Base Closure (BRAC)
Program
<http://www.dtic.mil/envirodod/envbrac.html>

DOD Base Closure and Community Reinvestment
<http://www.acq.osd.mil/iai/bccr.htm>

DOD Office of Economic Adjustment
<http://www.acq.osd.mil/oea/index.html>

2. Environmental Protection Agency

EPA OSWER Federal Facilities Base Realignment and Closure
<http://www.epa.gov/swerffrr/brac.htm>

3. Department of the Army

Army Base Realignment and Closure Office
<http://www.hqda.army.mil/acsimweb/brac/brac3.htm>

CERL BRAC/NEPA "How To" Manual
<http://www.cecer.army.mil/facts/sheets/PL19.html>

Corps of Engineers Base Realignment and Closure (Camp Bonneville)
- Good Slide Presentation of Process.
<http://www.nps.usace.army.mil/geotech/bnvl/brac95/index.htm>

Presidio of San Francisco BRAC Environmental Restoration Program
- General information as well as facts on Presidio Cleanup and Conversion
<http://www.presidiosanfran.com>

Enclosure 7
References

4. Department of the Air Force

Air Force Base Conversion Agency
<http://www.afbca.hq.af.mil>

5. Department of the Navy

Navy NAVFAC Base Closure Site
<http://164.224.238.53:81/csohome.nsf>

Navy Facilities Engineering Command - information on Navy BRAC sites
http://www.ncts.navy.mil/homepages/navfac_es/bcp.htm

Navy Environmental BRAC News
<http://www.navy.mil/homepages/navfac/env/newslet.html>



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY MATERIEL COMMAND
5001 EISENHOWER AVENUE, ALEXANDRIA, VA 22333 - 0001

212,700,0006

482 359

received
SEP 08 1999

2 AUG 1999

AMCEN-R

MEMORANDUM THRU Commander, U.S. Army Engineers Division, South
Atlantic, ATTN: CESAD-RE, Room #313, 77 Forsyth
Street, SW., Atlanta, GA 30335-6801

FOR Commander, U.S. Army Corps of Engineer, Mobile District, ATTN:
CESAM-RE-MM, P.O. Box 2288, Mobile, AL 36628-0001

SUBJECT: Finding of Suitability to Lease (FOSL-8) for Defense
Distribution Depot Memphis, Tennessee (DDMT)

1. Reference memorandum, AMCEN-R, 3 Apr 97, subject: Report of Availability for a Master Lease with the Memphis Depot Redevelopment Agency.
2. Enclosed for your action is the approved FOSL-8 (Encl 1) with supporting documentation for adding 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 DDMT to the Master Lease with Memphis Depot Redevelopment Agency.
3. The approved Report of Availability (ROA) for the entire installation, including the property addressed in this FOSL-8, was forwarded with reference.
4. The Final Environmental Assessment for Master Lease, DDMT, dated Sep 96, is the National Environmental Policy Act Document for this action.
5. Request a modification to the Master Lease adding those parcels referenced in paragraph 2 above and to be executed in accordance with the ROA and this FOSL-8.

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AMCEN-R

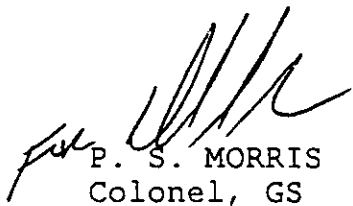
SUBJECT: Finding of Suitability to Lease (FOSL-8) for Defense
Distribution Depot Memphis, Tennessee (DDMT)

6. Points of contact for this action are Mr. John Farrar,
AMCEN-R, commercial (703) 617-0726, DSN 767-0726, or Mr. Joe
Goetz, AMCEN-R, commercial (703) 617-8904, DSN 767-8904.

7. AMC -- Your Readiness Command . . . Serving Soldiers Proudly!

FOR THE COMMANDER:

7 Encls


P. S. MORRIS
Colonel, GS
Deputy Chief of Staff
for Engineering, Housing,
Environment, and Installation
Logistics

CF: (wo/encls)

Assistant Chief of Staff for Installation Management, ATTN:
DAIM-BO, 600 Army Pentagon, Washington, D.C. 20310-0600

Headquarters, U.S. Army Corps of Engineers, ATTN: CERE-C,
Pulaski Bldg #4133, 20 Massachusetts Avenue, Washington, D.C.
20314-1000

Commander, Defense Distribution Depot Memphis, ATTN: DDMT-D,
2163 Airways Boulevard, Memphis, TN 38114-5210

Director, Defense Logistics Agency, ATTN: DLSC-BBB, 8725 John J.
Kingman Road, Suite 2533, Fort Belvoir, VA 22060-6221

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 recompment 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.

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, that 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

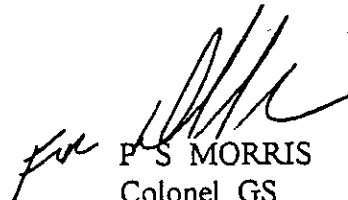
On the basis of the above results from the site-specific EBS and other environmental studies and in consideration of the intended use of the property, certain terms and conditions are required for the proposed lease. These terms and conditions are set forth in the attached Environmental Protection Provisions (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

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.

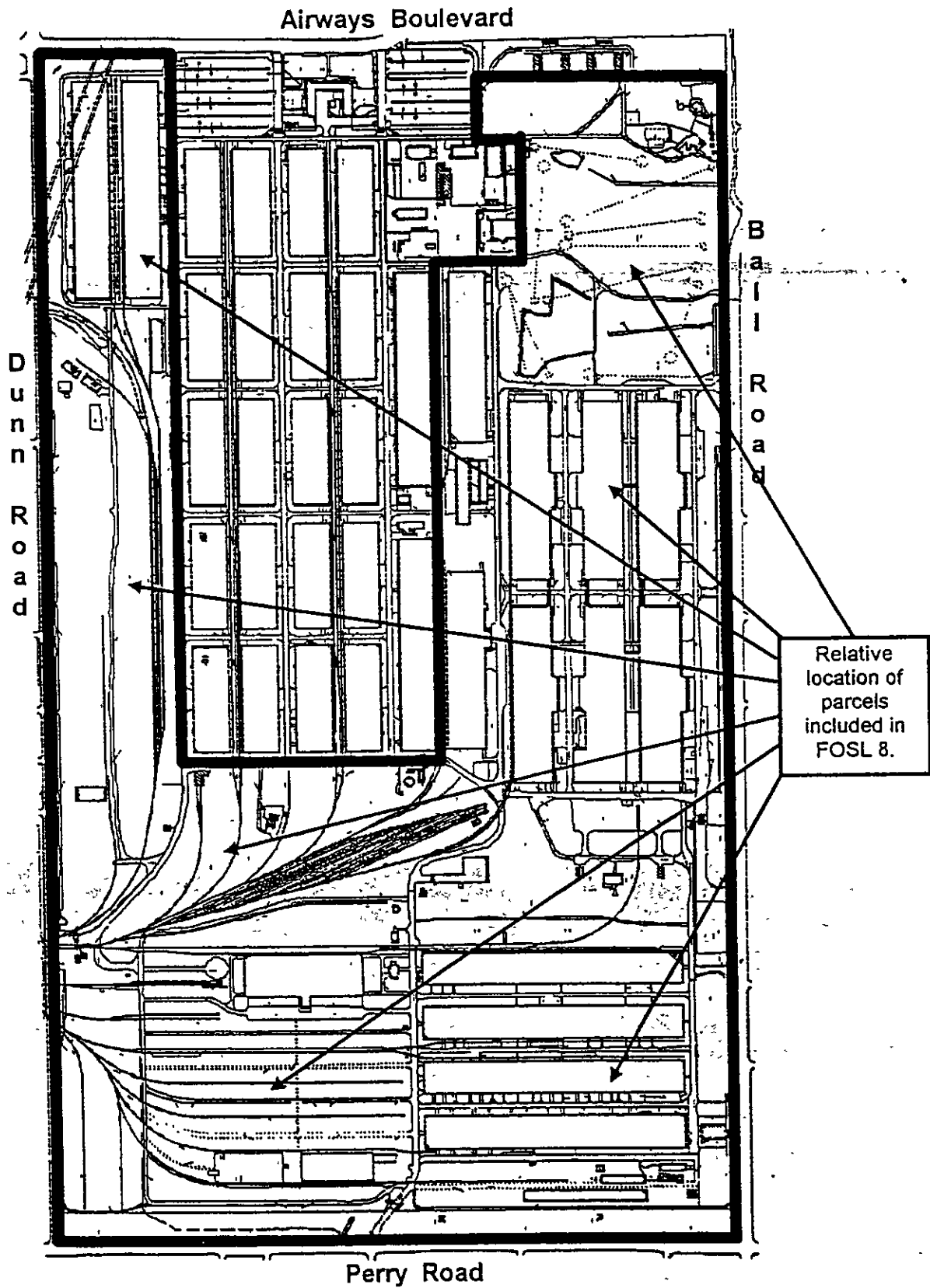
As required under the DOD FOSL Guidance, notification of hazardous substance activities and petroleum product activities shall be provided in the lease documents. Refer to Table 2 - Notification of Hazardous Substance Storage, Release or Disposal (Enclosure 3) and Table 3 - Notification of Petroleum Product Storage, Release or Disposal (Enclosure 4).


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Colonel, GS
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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

Enclosure 1
Site Maps of Property in FOSL 8



Enclosure 1

Site Maps of Property in FOSL 8

Parcel 13.5 - Building 211, Gates 23, 24 and 25, and surrounding open land area extending to Airways Blvd.

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 Rd.

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 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-roof 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 Rd.

Parcel 14.2 - Building 209 concrete foundation and surrounding open land area extending to Airways Blvd and to Dunn Rd.

Parcel 15.2 - Building 308.
Parcel 15.3 - Building 319.
Parcel 15.4 - Building 702 concrete foundation.
Parcel 15.5 - former waste material storage area west of buildings 308 and 309.
Parcel 15.6 - Open storage areas X09, Y10 and Y50, buildings 301, 309, 416, T417, 701 and 717, and surrounding open land area extending to Dunn Rd.

Parcel 30.2 - Spill area between Buildings 925 and 949.
Parcel 30.3 - Open storage area X23 and the open land area surrounding Buildings 925 and 949.
Parcel 30.4 - Building 949.
Parcel 30.5 - Former spray paint area south of Building 949.

Airways Boulevard

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Parcel 34.2 - Open land area surrounding Building 360.

Parcel 18.2 - Open land area surrounding Building 560.

Parcel 32.3 - Open storage area X02, Building 865 and surrounding open land area.

Parcel 26.1 - Open land area surrounding Building 970.
Parcel 26.2 - Building 970.

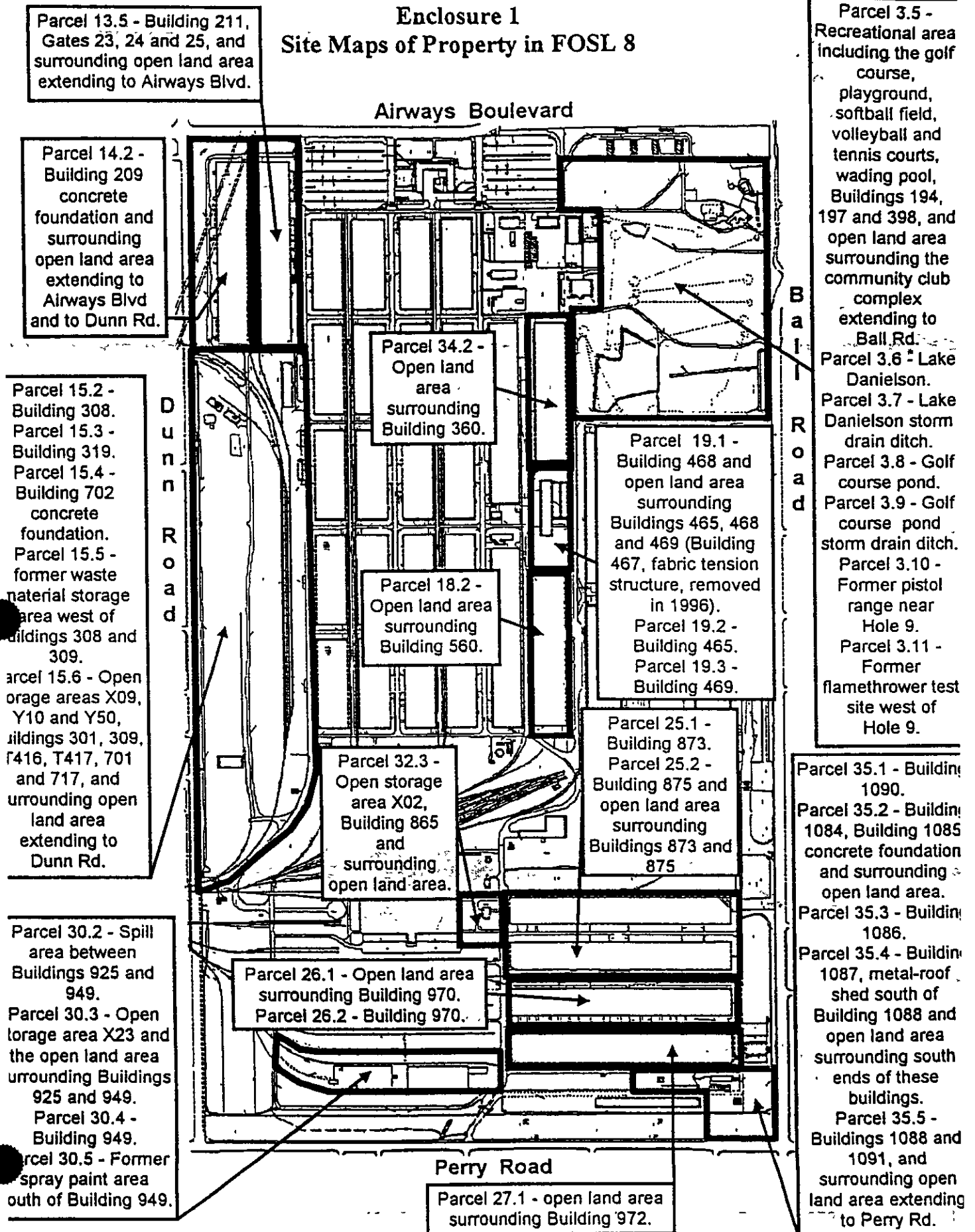
Parcel 19.1 - Building 468 and open land area surrounding Buildings 465, 468 and 469 (Building 467, fabric tension structure, removed in 1996).
Parcel 19.2 - Building 465.
Parcel 19.3 - Building 469.

Parcel 25.1 - Building 873.
Parcel 25.2 - Building 875 and open land area surrounding Buildings 873 and 875

Perry Road

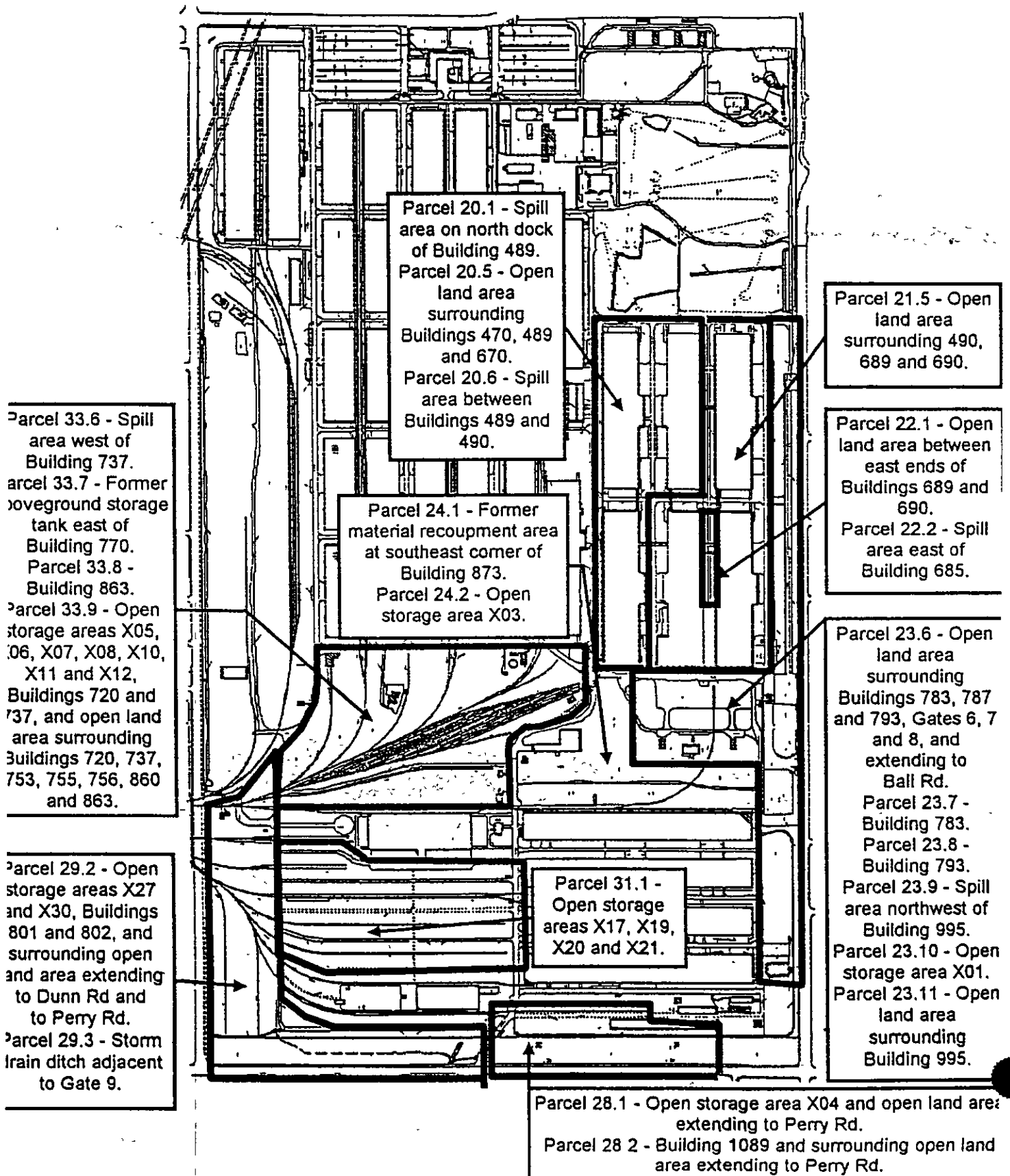
Parcel 27.1 - open land area surrounding Building 972.

Enclosure 1 Site Maps of Property in FOSL 8



Enclosure 1

Site Maps of Property in FOSL 8



Enclosure 2
Table 1 - Description of Property

Building Number and Property Description	Parcel Designation	Condition Category	Remedial Actions
Parcel 30.4 - Building 949, a 60,000-sq. ft. fabric tension structure erected in 1987 and used as a general purpose warehouse	30.4(1)	1	Building 949 may have been fumigated in the past. The BCT evaluated this fumigation issue and determined no further action was required. ² The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 20.1 - Spill area on the north dock of Building 489	20.1(2)	2	A 1-gallon oil spill was reported on November 3, 1995 at the north dock of Building 489, Section 4. The Spill Team responded, applied absorbent and disposed of the residue in accordance with federal, state and local regulations. The November 1996 Environmental Baseline Survey placed this parcel in ECP Category 3. In 1997 the ECP category definitions changed so that Category 3 was no longer appropriate for petroleum product releases. In December 1998, the BCT agreed Category 3 was not appropriate, as the release involved a petroleum product, and agreed the parcel should change from an ECP Category 3 to a Category 2. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 23.9 - Spill area northwest of Building 995	23.9(2)	2	A 10-gallon gasoline spill was reported on September 13, 1993, northwest of Building 995 on the paved road. The Spill Team responded, applied absorbent and disposed of the residue in accordance with federal, state and local regulations. In 1997, samples were collected from the spill area. Petroleum hydrocarbons were detected but were below the Tennessee clean-up level. In October 1997, the BCT agreed this parcel should change from an ECP Category 7 to a Category 3. In 1997 the ECP category definitions changed so that Category 3 was no longer appropriate for petroleum product releases. In December 1998, the BCT agreed Category 3 was not appropriate, as the release involved a petroleum product, and agreed the parcel should change from an ECP Category 3 to a Category 2. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 26.2 - Building 970, a 276,000-sq. ft. building erected in 1942 and used as an open storage warehouse	26.2(2)	2	Building 970 contained an oil fired generator that had leaked oil onto the concrete foundation. 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 agreed this parcel should change from an ECP Category 7 to a Category 2. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.

Enclosure 2
Table 1 - Description of Property

Parcel 33.6 - Spill area west of Building 737	33.6(2)	2	A 50-gallon mineral oil (non-PCB/<1 ppm) spill was reported on November 9, 1995 outside of Building 737. The Spill Team responded, excavated contaminated material and disposed of the residue in accordance with federal, state and local regulations. The November 1996 Environmental Baseline Survey categorized this parcel 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 agreed Category 4 was not appropriate, as the release involved a petroleum product, and agreed the parcel should change from an ECP Category 4 to a Category 2. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 15.2 - Building 308, a 540-sq. ft. building erected in 1944 and used for short term (less than 90 days) waste material storage	15.2(3)	3	The Defense Reutilization and Marketing Organization used this building to store materials classified as hazardous waste (about 95% of materials were hazardous substances that had exceeded manufacturer's shelf life; about 5% were hazardous substance spill residue) before being shipped to a disposal facility. The Depot's Resource Conservation and Recovery Act hazardous waste storage permit allowed use of this building. This parcel is associated with Screening Site 35 (Building 308 - Hazardous Waste Storage). In 1997, samples were collected from around the building and results indicated no levels that exceeded the BCT screening criteria ³ . Also, air sampling conducted in this building in December 1997 to assess the impact from storage of hazardous materials indicated no human health hazards. In June 1998, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 15.4 - Building 702 concrete foundation (building demolished in 1998), originally a 12,000-sq. ft. building erected in 1941 and used as the Military Officer's Hobby Shop	15.4(3)	3	Building 702 was demolished in February 1998. Originally, Building 702 served as the officer's hobby shop. According to interview with Depot personnel, hazardous substances and petroleum products were used and stored in the building. A portion of the building was reportedly used as a spray paint booth. This parcel is associated with Screening Site 79 (Fuels, Miscellaneous Liquids, Wood and Paper). In 1997, samples were collected outside of the building in Parcel 15.6 and results indicated one chromium ⁴ level above background. No other BCT screening criteria ³ were exceeded, but levels of metals, dieldrin and PAHs were detected in the soil in Parcel 15.6 and will be further evaluated. In February 1999, the BCT agreed that this parcel change from an ECP Category 7 to a Category 3. The performance of

Enclosure 2
Table 1 - Description of Property

			industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 18.2 - Open land area surrounding Building 560	18.2(3)	3	This parcel contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. Samples taken from other railroad tracks will be used to determine appropriate actions for railroad tracks sitewide. A sample was collected and results indicated no levels that exceeded the BCT screening criteria ³ . In September 1997 the BCT agreed that this parcel should change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 19.1 - Building 468, a 9,600-sq. ft. building erected in 1960 and used for vehicle/equipment and waste oil storage, and open land area surrounding Buildings 465, 468 and 469 (Building 467, a 24,883-sq. ft. fabric tension structure erected on this parcel in 1987, removed in 1996 and used for general storage)	19.1(3)	3	Building 468 was used to store facility maintenance vehicles and equipment. This parcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. Samples taken from other railroad tracks will be used to determine appropriate actions for railroad tracks sitewide. This parcel also contains a 1,000-gallon oil/water separator connected to the vehicle wash located at Building 465. The separator was cleaned following Depot closure. No spills are documented for this parcel. No sampling has been conducted at this parcel. In February 1999, the BCT conducted a visual inspection of this parcel and agreed that this parcel change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 19.2 - Building 465, a 400-sq. ft. building erected in 1984 and used as a vehicle wash rack	19.2(3)	3	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 Parcel 19.1. No sampling has been conducted at this parcel. 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 grass cutting equipment. In May 1999, the BCT agreed that this parcel change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 23.6 - Open land area surrounding Buildings 783, 787 and 793, Gates 6, 7 and 8, and extending to	23.6(3)	3	This parcel contains grassed areas that were historically sprayed with pesticides and herbicides as well as railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were historically sprayed with

Enclosure 2
Table 1 - Description of Property

Ball Road			pesticides and herbicides. This parcel also contains the open land area surrounding Screening Site (SS) 82 (Flammable storage - Buildings 783 and 793). Samples were collected and results indicated no levels that exceeded the BCT screening criteria ³ . In October 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 23.7 - Building 783, a 2,146-sq. ft. building erected in 1942 and used during World War II as a storage warehouse for the Chemical Warfare Service until March 31, 1961; in subsequent years, it was used by a local ROTC unit for small round ammunition and explosive ordnance storage then by Installation Services for general supply storage	23.7(3)	3	Building 783 was used by the U.S. Army Chemical Warfare Service for storage of flammable materials including hexachlorethane smoke pots, burning-mixture chloracetophenone tear gas solution and phosphorus/ rubber-gasoline solution filled grenades. The U.S. Army Corps of Engineer - St. Louis District found no evidence of release or disposal at this building of chemical warfare material during research for preparation of the "Ordnance and Explosive Waste/Chemical Warfare Materials Archive Search Report for Memphis Defense Depot." This parcel is also associated with Screening Site 82 (Flammables in Buildings 783 and 793). In 1997, samples were collected from the grassy area adjacent to Building 783 and results indicated levels of arsenic, chromium, lead ⁴ and dieldrin that exceeded BCT screening criteria ³ . The Preliminary Risk Evaluation indicated that noncarcinogenic risks for industrial scenarios was below one in a million, but were above one in a million for residential scenario due to naturally occurring metals. Carcinogenic risks were above one in a million for both industrial and residential scenarios due to arsenic. In February 1997, the BCT conducted a visual inspection of this parcel and agreed that this parcel change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 23.8 - Building 793, a 1,067-sq. ft. building erected in 1942 and used during World War II as a storage warehouse for the Chemical Warfare Service until March 31, 1961; in subsequent years, it was used by a local ROTC unit for small round ammunition and explosive ordnance storage then by	23.8(3)	3	Building 793 was used by the U.S. Army Chemical Warfare Service for storage of flammable materials including hexachlorethane smoke pots, burning-mixture chloracetophenone tear gas solution and phosphorus/ rubber-gasoline solution filled grenades. The U.S. Army Corps of Engineer - St. Louis District found no evidence of release or disposal at this building of chemical warfare material during research for preparation of the "Ordnance and Explosive Waste/Chemical Warfare Materials Archive Search Report for Memphis Defense Depot." This parcel is also associated with Screening Site 82 (Flammables in Buildings 783 and 793). In 1997, samples were collected from the grassy area adjacent to Building 793 and results indicated levels of arsenic,

Enclosure 2
Table 1 - Description of Property

Installation Services for general supply storage			chromium, lead ⁴ and dieldrin that exceeded BCT screening criteria ³ . The Preliminary Risk Evaluation indicated that noncarcinogenic risks for industrial scenarios was below one in a million, but were above one in a million for residential scenario due to naturally occurring metals. Carcinogenic risks were above one in a million for both industrial and residential scenarios due to arsenic. In February 1997, the BCT conducted a visual inspection of this parcel and agreed that this parcel change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 23.10 - Open storage area X01	23.10(3)	3	Open storage area X01 was a small lake when the Depot opened in 1942. This parcel contains an open storage area and a gravel area that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. Samples were collected and results indicated no levels that exceeded the BCT screening criteria ³ . In October 1997, the BCT agreed that this parcel change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 28.1 - Open storage area X04 and open land area extending to Perry Road; X04 was used to store steel bar and sheet metal materials	28.1(3)	3	This parcel contains an open storage area and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were sprayed with herbicides and pesticides. According to Depot personnel, this area did not store hazardous substances. Samples were collected and results indicated aluminum and iron ⁴ in surface soil near the range of the BCT screening criteria ³ . The Preliminary Risk Evaluation indicated that noncarcinogenic risks were above one in a million due to aluminum and iron, but the concentrations of these constituents in surface soils did not pose significant health risks. In October 1997, the BCT agreed this parcel should change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 33.8 - Building 863, a 1,500-sq. ft. building erected in 1943 and used to store material handling equipment (MHE), battery charging stations and to recharge MHE	33.8(3)	3	Building 863 contained a battery charging station. The 1996 EBS visual inspection of this building identified several oil stains on the concrete floor of this building. In January 1998, two surface soil samples were collected from a nearby stormwater drainage area to determine if any metals were released due to battery charging operations. Sample results indicated no levels that exceeded BCT screening criteria ³ . In February 1999, the

Enclosure 2
Table 1 - Description of Property

batteries			BCT agreed that this parcel should change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 34.2 - Open land area surrounding Building 360	34 2(3)	3	This parcel contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. A sample was collected and the result indicated chlordane at a level that exceeded the BCT screening criteria ³ . The Preliminary Risk Evaluation indicated carcinogenic and noncarcinogenic risks for both industrial and residential scenarios were less than one in a million. In October 1997, the BCT agreed this parcel should change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 15.3 - Building 319, a 18,000-sq. ft. building erected in 1942 and used as a special purpose warehouse for medical items (including alcohols, cyanide, mercury thermometers and materials containing low-level radioactive materials) and then as a hazardous waste storage warehouse	15 3(4)	4	Building 319 was a storage facility for various hazardous substances including flammable and toxic materials (alcohols and cyanide) and is associated with Screening Site 74 (Flammables and Toxics - West End Building 319). Low-level radioactive materials were stored in the western bay (Bay 6) of Building 319. Beginning in 1994, the eastern end of Building 319 was used for temporary (less than 90 days) hazardous waste storage by the Defense Reutilization and Marketing Organization (DRMO) - most of the waste consisted of expired shelf-life materials. In addition, a xylene spill was reported on November 18, 1991, inside Building 319, Section 4. The Spill Team responded, applied absorbent and disposed of the residue in accordance with federal, state and local regulations. In 1997, soil samples were collected outside the building at entry ways and results indicated levels of naturally occurring metals that exceeded BCT screening criteria ³ , but are similar to background concentrations. Also, air sampling conducted in this building in December 1997 to assess the impact from storage of hazardous materials indicated no human health hazards. In 1997, approximately 8 feet of wall space within the western bay was remediated for low-level radioactive impacts. In a letter dated April 16, 1999, the Nuclear Regulatory Commission (NRC) amended the Depot's license and released the building for unrestricted use. In July 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 4 based on the cleanup of both the xylene spill and the low-level radioactivity. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.

Enclosure 2
Table 1 - Description of Property

Parcel 19.3 - Building 469, a 9,600-sq. ft. building erected in 1960 and used as a battery and material handling equipment maintenance shop	19.3(4)	4	<p>Acids, parts cleaning fluids and petroleum products were stored and used in Building 469. This parcel is associated with No Further Action 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. No sampling occurred at this parcel. 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, the effected area was removed during sampling operations. In February 1999, the BCT conducted a visual inspection and was unable to locate the spill area. In May 1999, the BCT agreed that no further evidence of the spill remained, that a remedial action occurred, and that this parcel should change from an ECP Category 7 to a Category 4. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.</p>
Parcel 25.1 - Building 873, a 276,000-sq. ft. building erected in 1942 and used for storage of hazardous substances, petroleum, oils and lubricant (POL) materials	25.1(4)	4	<p>This parcel is associated with Building 873 and Remedial Investigation (RI) Site 27 (Former Recoupment Area/Building S873) Building 873 is an open shed warehouse that stored hazardous substances such as chlorinated solvents, corrosives, petroleum products, oils and lubricants. The southern end of the building is RI Site 27 that was used as the hazardous substances and POL recoupment area (remove materials from damaged containers then repackage the materials). Recoupment activities were conducted until the current Recoup Building was constructed in 1987/1988. Several spills inside Building 873 were documented and included tetrachloroethylene, sulfuric acid, hydraulic fluid and descaling compound. The Spill Team responded, took the appropriate action and disposed of the residue in accordance with federal, state and local regulations. Samples were taken outside of the building and will be addressed in Parcel 25.2. In September 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 4 based on the cleanup of the spills. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.</p>

Enclosure 2
Table 1 - Description of Property

Parcel 30.2 - Spill area between Buildings 925 and 949	30.2(4)	4	<p>This parcel is associated with former open storage area X25 and No Further Action Site 53 (Flammable Materials Spill). Beginning in the 1940s, flammable solvents were stored in drums on a gravel open storage area, then within an earthen-bermed open storage area at the northern end of the X25 area followed by a concrete-bermed open storage area. In the 1980s a fabric tension structure was erected over the area. In 1988 the structure collapsed during heavy winds releasing approximately 327 gallons of flammable material (xylene, toluene, methyl ethyl ketone) that mixed with approximately 30,000 gallons of water within the bermed area. The Depot Spill Team and Memphis Fire Department Hazardous Materials Team responded to the spill, pumped all liquid within the berm into tankers for transport to a licensed disposal facility. The fabric tension structure was demolished and, in 1994, Building 925 was constructed in about the same location. In January 1998, two surface soil samples were collected, and results indicated no levels that exceeded BCT screening criteria³. In February 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 4. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health and the environment.</p>
Parcel 24.1 - Former material recoupment area at southeast corner of Building 873	24.1(5)	5	<p>The gravel area east of Building 873 was used as a materials recoupment area (remove materials from damaged containers then repackage the materials) until operations were moved inside Building 873 in 1984/1985. The gravel area was also historically sprayed with pesticides, herbicides and waste oil containing PCP. This parcel is associated with Remedial Investigation Site 27 (Former Recoupment Area - Building 873). In 1985 soil impacted by spills during recoupment activities was removed. In 1997, samples were collected and results indicated elevated levels of vanadium⁴ and PAHs, which will be addressed in a sitewide risk evaluation. The November 1996 Environmental Baseline Survey categorized this parcel as an ECP Category 5 since a removal action had occurred, but further action may be needed. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.¹</p>

Enclosure 2
Table 1 - Description of Property

Parcel 15.5 - Former waste material storage area west of Buildings 308 and 309	15.5(6)	6	<p>This parcel is associated with the following Screening Sites: 36 (DRMO Hazardous Waste Concrete Storage Pad), 37 (DRMO Hazardous Waste Gravel Storage Pad), 38 (DRMO Damaged/Empty Hazardous Materials Drum Storage Area), and 39 (DRMO Damaged/Empty Lubricant Container Area). The open storage area/gravel area was also historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997 samples were collected and results indicated levels of metals⁴, DDT, trichloroethene and 1,1,2,2-tetrachloroethane that exceeded BCT screening criteria³. This parcel has been selected for early removal. In September 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.¹</p>
Parcel 25.2 - Building 875, a 276,000-sq. ft building erected in 1942 and used for storage of hazardous substances, petroleum, oils and lubricant (POL) materials, and open land area surrounding Buildings 873 and 875	25.2(6)	6	<p>Building 875 is an open shed warehouse that stored various materials including hazardous substances and petroleum products when Building 873 was full. Several spills were documented for the open land area outside Buildings 873 and 875 (40 gallons of tetrachloroethylene, 2 gallons of hydraulic fluid, 55 gallons of fog oil, 18 gallons of cleaning compound solvent, 55 gallons of lube oil, 25 gallons of lube oil, 55 gallons of diethylene glycol, 5 gallons of transmission fluid, 2 gallons of malathion and 2 quarts of oil/lubricant). The Spill Team responded, took the appropriate action, removed stained soil and disposed of the residue in accordance with federal, state and local regulations. This parcel also contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. A 1,000-gallon heating oil tank was closed in place in July 1994 outside Building 875. Samples were collected from around Buildings 873 and 875 and results indicated levels of PAHs that exceeded the BCT screening criteria³. A portion of Parcel 25.2 is an early removal candidate depending upon results of a risk assessment. In September 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.¹</p>

Enclosure 2
Table 1 - Description of Property

Parcel 28.2 - Building 1089, a 39,600-sq. ft. building erected in 1960 and used for miscellaneous storage including paints, paint related products and acids, and surrounding open land area extending to Perry Road	28.2(6)	6	<p>This parcel is associated with Screening Site 89 (Acids - Building 1089). Building 1089 was used to store acids, paints and cleaning solvents. This parcel 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. In 1997 samples were collected and results indicated lead, arsenic and chromium⁴ levels that exceeded BCT screening criteria³. Monitoring well 21 (MW-21) is also associated with this parcel.</p> <p>Groundwater samples taken from MW-21 detected VOCs and metals. These issues will be further defined during the current Main Installation Groundwater Investigation. In October 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6 as the area surrounding Building 1089 has been selected for a removal action. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.¹</p>
Parcel 35.1 - Building 1090, a 840-sq. ft. building erected in 1952 and used for storage of paint and paint related substances	35.1(6)	6	<p>Hazardous substances stored in Building 1090 included paint, paint thinner, lubricating oil, P-19 preservation oil, and corrosion preservation compound. No evidence of release. In February 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6 as the area surrounding this building has been selected for early removal actions. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.¹</p>
Parcel 35.2 - Building 1084, a 1,200-sq. ft. open shed erected in 1952 and used as for general and pesticide storage, Building 1085 concrete foundation, originally a vehicle grease rack removed by 1988, and the surrounding open land area	35.2(6)	6	<p>This parcel includes Early Removal Site 88 (Petroleum, Oils and Lubricants at Building 1085) which was a vehicle grease rack removed by 1988; Early Removal Site 29 (Former Underground Waste Oil Storage Tank) that was associated with Building 1085 and was removed in 1988, and Early Removal Site 87 (Pesticide/DDT Storage in Building 1084). This parcel also contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of arsenic, chromium, lead, cadmium⁴, dieldrin and petroleum that exceeded BCT screening criteria³. In February 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6 as the this parcel has been selected for early removal actions. Appropriate health and</p>

Enclosure 2
Table 1 - Description of Property

			safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 35.3 - Building 1086, a 9,760 sq. ft. building erected in 1959 and used for hazardous materials storage, care and preservation of steel materials and also contained a spray paint booth	35.3(6)	6	This parcel includes proposed No Further Action Site 30 (Building 1086, Spray Paint Booth). Building 1086 also contains a floor drain sump that is connected to the sanitary sewer. In 1997, a sample was collected from the sump and results indicated levels of antimony, cadmium, cooper, lead, nickel, zinc ⁴ and naphthalene that exceeded BCT screening criteria ³ . In February 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6 as this parcel has been selected for early removal actions. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 35.4 - Building 1087, a 4,927 sq. ft. building erected in 1952 and used as a spray paint booth, a metal-roofed shed south of Building 1088 used to store drums of sandblast waste awaiting disposal and open land area surrounding the south ends of these buildings	35.4(6)	6	This parcel includes Screening Site 31 (Building 1087, Former Spray Paint Booth) and Screening Site 33 (Sandblasting Waste Drum Storage Area South of Building 1088). This parcel also includes gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of PAHs, methylene chloride, dieldrin, DDT, lead, chromium, cadmium, arsenic and antimony ⁴ that exceeded BCT screening criteria ³ . In February 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6 as this parcel has been selected for early removal actions. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 2
Table 1 - Description of Property

Parcel 35.5 - Building 1088, a 2,272-sq. ft. building erected in 1953 and used as the sandblasting facility, Building 1091, a 800-sq. ft. building erected in 1953 and used for paint and paint related material storage, and surrounding open land area extending to Perry Road	35.5(6)	6	This parcel is associated with Remedial Investigation Site 32 (Sandblasting Waste Accumulation Area). This parcel also contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were sprayed with herbicides and pesticides. Samples were collected and results associated with Site 32 indicated levels of chromium, lead, arsenic ⁴ and PAHs that exceeded BCT screening criteria ³ . This parcel has been selected for early removal. In October 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
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	3.5(7)	7	This parcel contains grassed areas that were historically sprayed with pesticides and herbicides. In 1997, samples were collected and results indicated dieldrin and arsenic ⁴ levels that exceeded BCT screening criteria ³ . This parcel will be further investigated. In September 1997, the BCT agreed this parcel should remain a Category 7 until completion of an innovative technology pilot test and a sitewide dieldrin evaluation and site specific arsenic evaluation. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of recreational activities at this site in accordance with Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 3.6 - Lake Danielson, a 3.4-acre lake	3.6(7)	7	Lake Danielson is located in the northwest corner of the golf course and receives stormwater runoff from the central portion of the Main Installation. Several different sampling events have occurred at this parcel with results indicating metals ⁴ , pesticides and PAHs ⁵ in surface soils surrounding the lake, in storm water entering the lake and in lake sediments that exceeded BCT screening criteria ³ . In 1997 and again in 1998, efforts were made to capture edible fish species for tissue sampling. To date, only inedible species have been found. This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of recreational activities at this site in accordance with Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 2
Table 1 - Description of Property

Parcel 3.7 - Lake Danielson storm drain ditch	3.7(7)	7	Lake Danielson storm drain ditch receives stormwater flow from surrounding areas and intermittent flow from the lake. Several different sampling events have occurred at this parcel with results indicating levels of metals ⁴ , pesticides and PAHs ⁵ in surface soils surrounding the ditch, in storm water and in sediments under the current concrete ditch that exceeded BCT screening criteria ³ . This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of recreational activities at this site in accordance with Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 3.8 - Golf course pond, a .23-acre pond	3.8(7)	7	The golf course pond receives surface water runoff from the golf course and southeast portion of the Main Installation. Several different sampling events have occurred at this parcel with results indicating levels metals ⁴ and pesticides in surface water and in sediments ditch that exceeded BCT screening criteria ³ . This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of recreational activities at this site in accordance with Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 3.9 - Golf course pond storm drain ditch	3.9(7)	7	The golf course pond storm drain ditch receives stormwater flow from surrounding areas and intermittent flow from the pond. Several different sampling events have occurred at this parcel with results indicating levels of metals ⁴ , dieldrin and PAHs ⁵ in surface soils surrounding the ditch, metals ⁴ in surface water, and metals ⁴ and pesticides in sediments under the current concrete ditch that exceeded BCT screening criteria ³ . This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of recreational activities at this site in accordance with Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 3.10 - Former pistol range near Hole 9	3.10(7)	7	In the late 1940s, this parcel was used as a pistol range. This parcel also contains grassed areas that were historically sprayed with pesticides and herbicides. A sample was collected and results indicated levels of

Enclosure 2
Table 1 - Description of Property

			dieldrin and arsenic ⁴ that exceeded BCT screening criteria ³ . This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of recreational activities at this site in accordance with Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 3.11 - Former flamethrower test site west of Hole 9	3.11(7)	7	This parcel is associated with Screening Site 69 (Flamethrower Liquid Fuel Application). This area was used to test flamethrowers and fuel and to practice firefighting techniques after ignition of the fuel. This parcel also contains grassed areas that were historically sprayed with herbicides and pesticides. In 1997, samples were collected and results indicated levels of dieldrin and PAHs that exceeded BCT screening criteria ³ . This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of recreational activities at this site in accordance with Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 13.5 - Building 211 and associated emergency generator, a 988 square foot building erected in 1988 and used for battery backup power for the computer room in Building 210, Gates 23, 24 and 25, and surrounding open land area extending to Airways Boulevard	13.5(7)	7	This parcel contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP. This parcel also contains grassed areas that were historically sprayed with pesticides and herbicides. In 1997 samples were collected from the grassed area and results indicated no levels that exceeded BCT screening criteria ³ . Results from soil samples taken at other railroad track locations will be used to determine appropriate actions for railroad tracks sitewide. This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 14.2 - Building 209 concrete foundation (building demolished in 1998), originally a 240,000-sq. ft. building erected in 1942 and used as a general purpose	14.2(7)	7	Building 209 was demolished in 1998. It was originally used as a general purpose warehouse with a small office area. This parcel contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP. This parcel also contains grassed areas that were historically sprayed with pesticides and herbicides. Three underground storage tanks were

Enclosure 2
Table 1 - Description of Property

warehouse/ administrative office, and surrounding open land area extending to Dunn Road and Airways Boulevard			associated with Building 209: a 500-gallon heating oil tank removed in July 1995, a 500-gallon boiler blow down tank removed in July 1995, and a 12,000-gallon heating oil tank removed in July 1994. No evidence of release from these tanks has been found. In 1997, samples were collected and results indicated dieldrin levels that exceeded BCT screening criteria ³ . Results from soil samples taken at other railroad track locations will be used to determine appropriate actions for railroad tracks sitewide. This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 15.6 is Open storage areas X09, Y10 and Y50, Building 301 (the scale house), Building 309 (a 540-sq. ft. building erected in 1944 and used for office/general storage), Building T416 (a 2,600-sq. ft. building erected in 1943 and used for general storage), Building T417 (a 3,120-sq. ft. building erected in 1943 and used for general storage), Building 701 (the potable water pump house), and Building 717 (a 600-sq. ft. building erected in 1951 and used as a restroom and contained an ice maker, and surrounding open land area extending to Dunn Road	15.6(7)	7	This parcel 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. This parcel is associated with Screening Sites 54 (East Stormwater Runoff Canal) and 55 (North Stormwater Runoff Canal). A 4,000-gallon heating oil tank was removed in July 1994 from outside of Building 319. No evidence of release from this tank has been identified. Several spills were reported for this parcel and included dielectric fluid (non PCB), cleaning compound solvent, sulfuric acid, hydraulic fluid. The Spill Team responded to these spills, took the appropriate action and disposed of the residues in accordance with federal, state and local regulations. In 1997, samples were collected and results indicated levels of metals ⁴ , dieldrin, DDD, DDE, DDT and dioxins/furans in soils above BCT screening criteria ³ . This parcel requires further investigation. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 20.5 - Open land area surrounding Buildings 470, 489 and 670	20.5(7)	7	This parcel 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. A sample was collected and results indicated levels of dieldrin that exceeded BCT screening criteria ³ . Results from soil samples taken at other railroad track locations

Enclosure 2
Table 1 - Description of Property

			that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 22.2 - Spill area east of Building 685	22.2(7)	7	This parcel contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. This parcel is also 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. In 1997, samples were collected and results indicated levels of antimony, arsenic ⁴ , dieldrin and PAHs in surface soils that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 23.11 - Open land area surrounding Building 995	23.11(7)	7	This parcel 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. In 1997, a sample was collected from Parcel 23.9, a spill area within Parcel 23.11. Results indicated lead ⁴ in subsurface soils that slightly exceeded (24.3 mg/kg vs. 24 mg/kg) BCT screening criteria ³ . The BCT has made no decision to change the ECP category for this parcel. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 24.2 - Open storage area X03	24.2(7)	7	This parcel was used for storage of flammable materials in 55-gallon drums until 1988. The area then became steel storage. This parcel contains railroad tracks, open storage areas and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated arsenic ⁴ , PAHs and PCP levels in surface soils and lead ⁴ in subsurface soils that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997, the BCT agreed that this

Enclosure 2
Table 1 - Description of Property

			parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 26.1 - Open land area surrounding Building 970	26.1(7)	7	This parcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated no levels that exceeded BCT screening criteria ³ . However, in October 1997 the BCT agreed that this parcel remain an ECP Category 7 until surface soils could be further evaluated. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 27.1 - Open land area surrounding Building 972	27.1(7)	7	This parcel contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of chromium ⁴ , PAHs and chlorinated pesticides in surface soils and chromium and lead ⁴ in subsurface soils that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997 the BCT agreed that this parcel remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 29.2 - Open storage areas X27 and X30, Building 801 (a 544-sq. ft. building erected in 1956 and used for general supply storage by Installation Services) and Building 802 (a 400-sq. ft. building erected in 1981 and used as a waiting shelter), and surrounding open land area extending to Dunn Road and to Perry Road	29.2(7)	7	This parcel 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. In 1997, samples were collected and results indicated levels of chromium ⁴ , dieldrin, DDT and methylene chloride in surface soils that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997 the BCT agreed that this parcel remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 2
Table 1 - Description of Property

Parcel 29.3 - Storm drain ditch adjacent to Gate 9	29.3(7)	7	This parcel is associated with Screening Site 56 (Western Storm Drainage Canal). In 1997, samples were collected and results indicated levels of metals ⁴ in surface soil; lead ⁴ in subsurface soil, PAHs ⁵ , lead ⁴ , p,pN-DDD and p,pN-DDE in sediments under the concrete lined ditch that exceeded BCT screening criteria ³ . PAHs were detected in sediments at levels exceeding criteria, but below background values. This parcel requires further investigation. In September 1997, the BCT agreed that this parcel remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 30.3 - Open storage area X23 and open land area surrounding Buildings 925 and 949	30.3(7)	7	This parcel is associated with open storage area X23 and former open storage area X25 where drums of flammable materials were stored. Buildings 925 and 949 were constructed on former open storage area X25. This parcel contains railroad tracks, open storage areas and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. No sampling has occurred at this parcel; however, pesticides and PAHs have been detected near railroad tracks at several Depot locations and will be evaluated in an upcoming sitewide risk evaluation. In September 1997, the BCT agreed this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 30.5 - Former spray paint area south of Building 949	30.5(7)	7	This parcel is associated with Screening 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. In 1997, samples were collected and results indicated levels of antimony, barium, beryllium, cadmium, chromium, iron, lead and zinc ⁴ that exceeded BCT screening criteria ³ . This parcel requires further investigation. In September 1997, the BCT agreed this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 2
Table 1 - Description of Property

Parcel 31.1 - Open storage areas X17, X19, X20 and X21	31.1(7)	7	This parcel contains railroad tracks and open storage areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of metals ⁴ , dieldrin, dibenz(ah)anthracene and PCBs that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 32.3 - Open storage area X02, Building 865, a 4,200-sq. ft. building erected in 1988 and used for recoupment (repackaging) of hazardous substances and petroleum products, and surrounding open land area	32.3(7)	7	This parcel is associated with Screening Site 28 (Building 865, the Recoup Area Building). Building 865 is a handling area used to transfer hazardous substances/wastes or petroleum products/wastes from damaged or leaking containers into undamaged containers. This parcel also includes an open storage area and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of arsenic and lead ⁴ that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997, the BCT agreed this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 33.7 - Former aboveground storage tank east of Building 770	33.7(7)	7	This parcel is associated with Screening Site 81 (Fuel Oil Building 765), a 12,000-gallon diesel fuel aboveground storage tank that was removed in 1994. This parcel also contains a gravel area that was historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of PAHs that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 2
Table 1 - Description of Property

<p>Parcel 33.9 - Open storage areas X05, X06, X07, X08, X10, X11 and X12, Building 720 (a 4,665-sq. ft. building erected in 1942 and used as a railroad engine repair facility and a diesel fueling station), Building 737 (a 5,744-sq. ft. building erected in 1961 and used to store and mix pest and weed control materials), and open land area surrounding Buildings 720, 737, 753, 755, 756, 860 and 863</p>	33.9(7)	7	<p>This parcel is associated with Screening Site 42 (Former Pentachlorophenol (PCP) Dip Vat Area), Screening Site 43 (Former Underground PCP Tank Area), Screening Site 46 (Pallet Drying Area) and Screening 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 parcel 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. This parcel 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 residue in accordance with federal, state and local regulations. In 1997, samples were collected and results indicated levels of lead, chromium, arsenic¹, PAHs, dieldrin and PCB-1260 that exceeded BCT screening criteria². This parcel requires further investigation. In February 1999, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.¹</p>
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¹ Provided the lessee strictly adheres to the Environmental Protection Provisions (Enclosure 5), including but not limited to Provision 14 - No subsurface disturbance, excavation, drilling or digging without prior written approval from the Government.

² Records indicate that many buildings that stored perishables or textiles during the Depot's history may have been fumigated to control pests. Also, buildings that stored hazardous materials may have residual impacts from releases. The BCT determined that a representative number of buildings should be sampled for hazardous substances in the air. The BCT reviewed these air sampling results at the December 1997 BCT meeting and determined that no further action was warranted or required.

Enclosure 2

Table 1 - Description of Property

³ BCT screening criteria were established by the BCT during the August 1997 BCT meeting and basically consist of the EPA Region III Risk Based Concentration table and, for some metals, regional background levels.

⁴ Certain substances such as arsenic, chromium, cadmium, antimony and lead occur naturally. Even though analytical results indicated these levels exceeded BCT screening criteria, these levels appear fairly consistently across the Depot and are being regarded as naturally occurring.

⁵ Polycyclic aromatic hydrocarbons (PAHs) may also be the result of vehicle traffic. PAHs result when substances such as wood, gasoline and oils burn. Even though analytical results indicated PAHs that exceeded BCT screening criteria, these levels are being regarded as originating from vehicle traffic on nearby streets.

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 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.

Category 5: Areas where release, disposal, and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, 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

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

Building Number	Name of Hazardous Substance	Date of Storage, Release or Disposal	Remedial Actions
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	Pesticides (dieldrin) Herbicides Chlorine Battery acid	Exact start date unknown assumed facility activation in 1942	This parcel contains grassed areas that were historically sprayed with pesticides and herbicides. In 1997, samples were collected and results indicated dieldrin and arsenic ⁴ levels that exceeded BCT screening criteria ³ . This parcel will be further investigated. In September 1997, the BCT agreed this parcel should remain a Category 7 until completion of an innovative technology pilot test and a sitewide dieldrin evaluation and site specific arsenic evaluation. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of recreational activities at this site in accordance with Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 3.6 - Lake Danielson, a 3.4-acre lake	Pesticides (dieldrin) Herbicides	Exact start date unknown assumed facility activation in 1942	Lake Danielson is located in the northwest corner of the golf course and receives stormwater runoff from the central portion of the Main Installation. Several different sampling events have occurred at this parcel with results indicating metals ⁴ , pesticides and PAHs ⁵ in surface soils surrounding the lake, in storm water entering the lake and in lake sediments that exceeded BCT screening criteria ³ . In 1997 and again in 1998, efforts were made to capture edible fish species for tissue sampling. To date, only inedible species have been found. This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of recreational activities at this site in accordance with Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 3.7 - Lake Danielson storm drain ditch	Pesticides (dieldrin) Herbicides	Exact start date unknown assumed facility activation in 1942	Lake Danielson storm drain ditch receives stormwater flow from surrounding areas and intermittent flow from the lake. Several different sampling events have occurred at this parcel with results indicating levels of metals ⁴ , pesticides and PAHs ⁵ in surface soils surrounding the ditch, in storm water and in sediments under the current concrete ditch that exceeded BCT screening criteria ³ . This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of recreational activities

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

			at this site in accordance with Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 3.8 - Golf course pond, a .23- acre pond	Pesticides (dieldrin) Herbicides	Exact start date unknown assumed facility activation in 1942	The golf course pond receives surface water runoff from the golf course and southeast portion of the Main Installation. Several different sampling events have occurred at this parcel with results indicating levels of metals ⁴ and pesticides in surface water and in sediments ditch that exceeded BCT screening criteria ³ . This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of recreational activities at this site in accordance with Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 3.9 - Golf course pond storm drain ditch	Pesticides (dieldrin) Herbicides	Exact start date unknown assumed facility activation in 1942	The golf course pond storm drain ditch receives stormwater flow from surrounding areas and intermittent flow from the pond. Several different sampling events have occurred at this parcel with results indicating levels of metals ⁴ , dieldrin and PAHs ⁵ in surface soils surrounding the ditch, metals ⁴ in surface water, and metals ⁴ and pesticides in sediments under the current concrete ditch that exceeded BCT screening criteria ³ . This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of recreational activities at this site in accordance with Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 3.10 - Former pistol range near Hole 9	Pesticides (dieldrin) Herbicides	Exact start date unknown assumed facility activation in 1942	In the late 1940s, this parcel was used as a pistol range. This parcel also contains grassed areas that were historically sprayed with pesticides and herbicides. A sample was collected and results indicated levels of dieldrin and arsenic ⁴ that exceeded BCT screening criteria ³ . This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of recreational activities at this site in accordance with Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

Parcel 3.11 - Former flamethrower test site west of Hole 9	Pesticides (dieldrin) Herbicides Diesel fuel Kerosene PAHs	Exact start date unknown assumed facility activation in 1942	This parcel is associated with Screening Site 69 (Flamethrower Liquid Fuel Application). This area was used to test flamethrowers and fuel and to practice firefighting techniques after ignition of the fuel. This parcel also contains grassed areas that were historically sprayed with herbicides and pesticides. In 1997, samples were collected and results indicated levels of dieldrin and PAHs that exceeded BCT screening criteria ³ . This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of recreational activities at this site in accordance with Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 13.5 - Building 211 and associated emergency generator, Gates 23, 24 and 25, and surrounding open land area extending to Airways Blvd	Pesticides (dieldrin) Herbicides Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP. This parcel also contains grassed areas that were historically sprayed with pesticides and herbicides. In 1997 samples were collected from the grassed area and results indicated no levels that exceeded BCT screening criteria ³ . Results from soil samples taken at other railroad track locations will be used to determine appropriate actions for railroad tracks sitewide. This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 14.2 - Building 209 concrete foundation (building demolished in 1998) and surrounding open land area extending to Airways Blvd	Pesticides (dieldrin) Herbicides Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	Building 209 was demolished in 1998. It was originally used as a general purpose warehouse with a small office area. This parcel contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP. This parcel also contains grassed areas that were historically sprayed with pesticides and herbicides. Three underground storage tanks were associated with Building 209: a 500-gallon heating oil tank removed in July 1995, a 500-gallon boiler blow down tank removed in July 1995, and a 12,000-gallon heating oil tank removed in July 1994. No evidence of release from these tanks has been found. In 1997, samples were collected and results

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

			indicated dieldrin levels that exceeded BCT screening criteria ³ . Results from soil samples taken at other railroad track locations will be used to determine appropriate actions for railroad tracks sitewide. This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 15.2 - Building 308	Flammables Corrosives Toxics Oxidizers Batteries	Exact start date unknown assumed building construction date in 1944 - 1994	The Defense Reutilization and Marketing Organization used this building to store materials classified as hazardous waste (about 95% of materials were hazardous substances that had exceeded manufacturer's shelf life; about 5% were hazardous substance spill residue) before being shipped to a disposal facility. The Depot's Resource Conservation and Recovery Act hazardous waste storage permit allowed use of this building. This parcel is associated with Screening Site 35 (Building 308 - Hazardous Waste Storage). In 1997, samples were collected from around the building and results indicated no levels that exceeded the BCT screening criteria ³ . Also, air sampling conducted in this building in December 1997 to assess the impact from storage of hazardous materials indicated no human health hazards. In June 1998, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 3. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 15.3 - Building 319	Flammables Corrosives Toxics Oxidizers Radioactives Petroleum Products Spill: Xylene	Exact start date unknown assumed building construction in 1942. Spill date: Nov. 18, 1991	Building 319 was a storage facility for various hazardous substances including flammable and toxic materials (alcohols and cyanide) and is associated with Screening Site 74 (Flammables and Toxics - West End Building 319). Low-level radioactive materials were stored in the western bay (Bay 6) of Building 319. Beginning in 1994, the eastern end of Building 319 was used for temporary (less than 90 days) hazardous waste storage by the Defense Reutilization and Marketing Organization (DRMO) - most of the waste consisted of expired shelf-life materials. In addition, a xylene spill was reported on November 18, 1991, inside Building 319, Section 4. The Spill Team responded, applied absorbent and disposed of the residue in accordance with federal,

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

			<p>state and local regulations. In 1997, soil samples were collected outside the building at entry ways and results indicated levels of naturally occurring metals⁴ that exceeded BCT screening criteria³, but are similar to background concentrations. Also, air sampling conducted in this building in December 1997 to assess the impact from storage of hazardous materials indicated no human health hazards. In 1997, approximately 8 feet of wall space within the western bay was remediated for low-level radioactive impacts. In a letter dated April 16, 1999, the Nuclear Regulatory Commission (NRC) amended the Depot's license and released the building for unrestricted use. In July 1999, the BCT agreed that this parcel should change from ECP Category 7 to a Category 4 based on the cleanup of both the xylene spill and the low-level radioactivity. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.</p>
<p>Parcel 15.4 - Building 702 concrete foundation (building demolished in 1998)</p>	<p>Petroleum products Paints Chlorinated Solvents Chromium</p>	<p>Exact start date unknown assumed facility activation in 1942</p>	<p>Building 702 was demolished in February 1998. Originally, Building 702 served as the officer's hobby shop. According to interview with Depot personnel, hazardous substances and petroleum products were used and stored in the building. A portion of the building was reportedly used as a spray paint booth. This parcel is associated with Screening Site 79 (Fuels, Miscellaneous Liquids, Wood and Paper). In 1997, samples were collected outside of the building in Parcel 15.6 and results indicated one chromium⁴ level above background. No other BCT screening criteria³ were exceeded, but levels of metals, dieldrin and PAHs were detected in the soil in Parcel 15.6 and will be further evaluated. In February 1999, the BCT agreed that this parcel change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.</p>
<p>Parcel 15.5 - Former waste material storage area west of Buildings 308 and 309</p>	<p>Pesticides (dieldrin, DDT) Herbicides Waste oil containing PCP Chlorinated solvents Corrosives Flammables Petroleum products Oils</p>	<p>Exact start date unknown assumed facility activation in 1942</p> <p>No exact dates or substances for releases due to leaking storage containers</p>	<p>This parcel is associated with the following Screening Sites: 36 (DRMO Hazardous Waste Concrete Storage Pad), 37 (DRMO Hazardous Waste Gravel Storage Pad), 38 (DRMO Damaged/Empty Hazardous Materials Drum Storage Area), and 39 (DRMO Damaged/Empty Lubricant Container Area). The open storage area/gravel area was also historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997 samples were collected and results indicated levels of metals⁴, DDT, trichloroethene and 1,1,2,2-tetrachloroethane that exceeded BCT screening.</p>

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

	Lubricants Trichloroethene 1,1,2,2- Tetrachloro- ethane		criteria ³ . This parcel has been selected for early removal. In September 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 15.6 - Open storage areas X09, Y10 and Y50, Buildings 301, 309, T416, , 701 and 717, and surrounding open land area extending to Dunn Road	Pesticides (dieldrin, DDT, DDD, DDE) Herbicides Transformers containing non- PCB and PCB containing mineral oil Waste oil containing PCP/PAHs/lead/ dioxins/furans Corrosives Flammables Petroleum products Chlorinated solvents Spills: Mineral (dielectric) fluid (non-PCB) Cleaning compound solvent Sulfuric acid Hydraulic fluid	Exact start date unknown assumed facility activation in 1942 No exact dates or substances for releases due to leaking containers Spill dates: March 26, 1991 December 2, 1991 May 23, 1994 September 12, 1995	This parcel 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. This parcel is associated with Screening Sites 54 (East Stormwater Runoff Canal) and 55 (North Stormwater Runoff Canal). A 4,000-gallon heating oil tank was removed in July 1994 from outside of Building 319. No evidence of release from this tank has been identified. Several spills were reported for this parcel and included dielectric fluid (non PCB), cleaning compound solvent, sulfuric acid, hydraulic fluid. The Spill Team responded to these spills, took the appropriate action and disposed of the residues in accordance with federal, state and local regulations. In 1997, samples were collected and results indicated levels of metals ⁴ , dieldrin, DDD, DDE, DDT and dioxins/furans in soils above BCT screening criteria ³ . This parcel requires further investigation. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 18.2 - Open land area surrounding Building 560	Pesticides Herbicides Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. Samples taken from other railroad tracks will be used to determine appropriate actions for railroad tracks sitewide. A sample was collected and results indicated no levels that exceeded the BCT screening criteria ³ . In September 1997 the BCT agreed that this parcel should change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

			pose an unacceptable risk to human health or the environment.
Parcel 19.1 - Building 468 and open land area surrounding Buildings 465, 468 and 469 (Building 467, erected on this parcel in 1987, removed in 1996)	Petroleum products Pesticides Herbicides Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	Building 468 was used to store facility maintenance vehicles and equipment. This parcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. Samples taken from other railroad tracks will be used to determine appropriate actions for railroad tracks sitewide. This parcel also contains a 1,000-gallon oil/water separator connected to the vehicle wash located at Building 465. The separator was cleaned upon facility closure and since then only washwater from grass cutting equipment has entered the separator. No spills are documented for this parcel. No sampling has been conducted at this parcel. In February 1999, the BCT conducted a visual inspection of this parcel and agreed that this parcel change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 19.2 - Building 465, a vehicle wash rack	Petroleum products Chlorinated solvents	Exact start date unknown assumed building construction in 1984	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 Parcel 19.1. No sampling has been conducted at this parcel. 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 grass cutting equipment. In May 1999, the BCT agreed that this parcel change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

Parcel 19.3 - Building 469, a 9,600-sq. ft. building erected in 1960	Chlorinated solvents Corrosives Petroleum products Transformers filled with PCB and non-PCB mineral oil Spill: - PCB-containing Mineral oil	Exact start date unknown assumed building construction in 1960 Spill date: December 16, 1993	Acids, parts cleaning fluids and petroleum products were stored and used in Building 469. This parcel is associated with No Further Action 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. No sampling occurred at this parcel. 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, the effected area was removed during sampling operations. In February 1999, the BCT conducted a walk through, was unable to locate the spill area. In May 1999, the BCT agreed that no further evidence of the spill remained, that a remedial action occurred, and that this parcel should change from an ECP Category 7 to a Category 4. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 20.5 - Open land area surrounding Buildings 470, 489 and 670	Pesticides (dieldrin) Herbicides Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel 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. A sample was collected and results indicated levels of dieldrin that exceeded BCT screening criteria ³ . Results from soil samples taken at other railroad track locations will be used to determine appropriate actions for railroad tracks sitewide. This parcel requires further investigation. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

Parcel 20.6 - Spill area between Buildings 489 and 490	Sulfuric Acid Waste oil containing PCP/PAHs	June 10, 1993	A sulfuric acid spill (approximately 2 gallons) was reported on June 10, 1993 between Buildings 489 and 490 on 5th Street. The Spill Team responded, applied sodium bicarbonate and disposed of the residue in accordance with federal, state and local regulations. Samples were collected from the gravel area east of the spill area and results indicated levels of PAHs, arsenic, chromium and lead ⁴ that exceeded BCT screening criteria ³ . This parcel requires further investigation. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 21.5 - Open land area surrounding Buildings 490, 689 and 690	Pesticides Herbicides Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel 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 parcel is also associated with Screening Site 76 (Unknown Wastes Near Building 690). Samples were collected and results indicated levels of chromium and lead ⁴ in subsurface soils that exceeded BCT screening criteria ³ . Chromium and lead concentrations in subsurface soils were similar to levels found elsewhere on the Depot and may be naturally occurring. Dieldrin was detected, but was below screening criteria. This parcel requires further investigation. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 22.1 - Open land area between the east ends of Buildings 689 and 690	Pesticides Herbicides Waste oil containing PCP/PAHs	Exact start date unknown assumed facility activation in 1942	This parcel contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of antimony ⁴ and PAHs that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

			commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 22.2 - Spill area east of Building 685	Pesticides Herbicides Waste oil containing PCP/PAHs Sulfuric (battery)- acid	Exact start date unknown assumed facility activation in 1942 No exact dates for battery acid spills Known to have occurred charging MHE batteries or adding water to MHE batteries	This parcel contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. This parcel is also associated with Screening Site 77 (Unknown Wastes Near Buildings 689 and 690). Battery acid spilled in the warehouse during MHE battery charging procedures was washed out a nearby door onto the gravel area immediately east of Building 685. In 1997, samples were collected and results indicated levels of antimony, arsenic ⁴ , dieldrin and PAHs in surface soils that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 23.6 - Open land area surrounding Buildings 783, 787 and 793, Gates 6, 7 and 8, and extending to Ball Road	Pesticides Herbicides Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel contains grassed areas that were historically sprayed with pesticides and herbicides as well as railroad tracks 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. This parcel also contains the open land area surrounding Screening Site (SS) 82 (Flammable storage - Buildings 783 and 793). Samples were collected and results indicated no levels that exceeded the BCT screening criteria ³ . In October 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 23.7 - Building 783	Flammables Hexachlorethane smoke pots Chloraceto- phenone tear gas solution Phosphorus/ rubber-gasoline solution	Exact start date unknown assumed facility activation in 1942 Chemical Warfare Service's mission at the Memphis Depot ended on	Building 783 was used by the U.S. Army Chemical Warfare Service for storage of flammable materials including hexachlorethane smoke pots, burning-mixture chloracetophenone tear gas solution and phosphorus/ rubber-gasoline solution filled grenades. The U.S. Army Corps of Engineer - St. Louis District found no evidence of release or disposal at this building of chemical warfare material during research for preparation of the

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

	Small round ammunition Explosive ordnance	March 31, 1961	<p>"Ordnance and Explosive Waste/Chemical Warfare Materials Archive Search Report for Memphis Defense Depot." This parcel is also associated with Screening Site 82 (Flammables in Buildings 783 and 793). In 1997, samples were collected from the grassy area adjacent to Building 783 and results indicated levels of arsenic, chromium, lead⁴ and dieldrin that exceeded BCT screening criteria³. The Preliminary Risk Evaluation indicated that noncarcinogenic risks for industrial scenarios was below one in a million, but were above one in a million for residential scenario due to naturally occurring metals. Carcinogenic risks were above one in a million for both industrial and residential scenarios due to arsenic. In February 1997, the BCT conducted a visual inspection of this parcel and agreed that this parcel change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.</p>
Parcel 23.8 - Building 793	Flammables Hexachlorethane smoke pots Chloraceto-phenone tear gas solution Phosphorus/ rubber-gasoline solution Small round ammunition Explosive ordnance	<p>Exact start date unknown assumed facility activation in 1942</p> <p>Chemical Warfare Service's mission at the Memphis Depot ended on March 31, 1961</p>	<p>Building 793 was used by the U.S. Army Chemical Warfare Service for storage of flammable materials including hexachlorethane smoke pots, burning-mixture chloracetophenone tear gas solution and phosphorus/ rubber-gasoline solution filled grenades. The U.S. Army Corps of Engineer - St. Louis District found no evidence of release or disposal at this building of chemical warfare material during research for preparation of the "Ordnance and Explosive Waste/Chemical Warfare Materials Archive Search Report for Memphis Defense Depot." This parcel is also associated with Screening Site 82 (Flammables in Buildings 783 and 793). In 1997, samples were collected from the grassy area adjacent to Building 793 and results indicated levels of arsenic, chromium, lead⁴ and dieldrin that exceeded BCT screening criteria³. The Preliminary Risk Evaluation indicated that noncarcinogenic risks for industrial scenarios was below one in a million, but were above one in a million for residential scenario due to naturally occurring metals. Carcinogenic risks were above one in a million for both industrial and residential scenarios due to arsenic. In February 1997, the BCT conducted a visual inspection of this parcel and agreed that this parcel change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.</p>

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

Parcel 23.10 - Open storage area X01	Pesticides Herbicides Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	Open storage area X01 was a small lake when the Depot opened in 1942. This parcel contains an open storage area and a gravel area that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. Samples were collected and results indicated no levels that exceeded the BCT screening criteria ³ . In October 1997, the BCT agreed that this parcel change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 23.11 - Open land area surrounding Building 995 extending to Ball Road	Pesticides Herbicides	Exact start date unknown assumed facility activation in 1942	This parcel 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. In 1997, a sample was collected from Parcel 23.9, a spill area within Parcel 23.11. Results indicated lead ⁴ in subsurface soils that slightly exceeded (24.3 mg/kg vs. 24 mg/kg) BCT screening criteria ³ . The BCT has made no decision to change the ECP category for this parcel. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 24.1 - Former material recoupment area at southeast corner of Building 873	Chlorinated solvents Sulfuric acid Oils Lubricants Corrosives Flamunables Petroleum products Pesticides (dieldrin) Herbicides Waste oil containing PCP/PAHs	Exact start date unknown assumed facility activation in 1942 - 1984/1985 No exact dates or substances for spills that occurred during repouring or repackaging activities	The gravel area east of Building 873 was used as a materials recoupment area (remove materials from damaged containers then repackage the materials) until operations were moved inside Building 873 in 1984/1985. The gravel area was also historically sprayed with pesticides, herbicides and waste oil containing PCP. This parcel is associated with Remedial Investigation Site 27 (Former Recoupment Area - Building 873). In 1985 soil impacted by spills during recoupment activities was removed. In 1997, samples were collected and results indicated elevated levels of vanadium ⁴ and PAHs, which will be addressed in a sitewide risk evaluation. The November 1996 Environmental Baseline Survey categorized this parcel as an ECP Category 5 since a removal action had occurred, but further action may be needed. Appropriate health and safety measures will be implemented during all remediation activities to ensure the

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

			protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 24.2 - Open storage area X03	Flaminables Petroleum products Pesticides Herbicides Waste oil containing PCP/PAHs	Exact start date unknown assumed facility activation in 1942	This parcel was used for storage of flammable materials in 55-gallon drums until 1988. The area then became steel storage. This parcel contains railroad tracks, open storage areas and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated arsenic ⁴ , PAHs and PCP levels in surface soils and lead ⁴ in subsurface soils that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 25.1 - Building 873	Chlorinated solvents Oils Lubricants Corrosives Petroleum products Flammables Spills: Tetrachloro- ethylene Cleaning compound solvent Descaling compound Corrosion removing compound Sulfuric acid Hydrofluoric acid Hydrochloric acid Tincture benzoin Diethylene glycol Methanol	Exact start date unknown assumed facility activation in 1942 - September 1997 Spill dates: March 9, 1990 December 7, 1990 November 18, 1991 February 13, 1992 July 21, 1993 August 6, 1993 October 25, 1993 November 29, 1993 April 7, 1994 June 8, 1994 July 11, 1994 August 11, 1994	Building 873 stored hazardous substances such as chlorinated solvents, corrosives, petroleum products, oils and lubricants. The southern end of the building was used as the hazardous substances and petroleum products recoupment area (remove materials from damaged containers then repackage the materials) and is associated with Remedial Investigation Site 27 (Former Recoupment Area - Building S873). Recoupment activities were conducted until the current Recoup Building was constructed in 1987/1988. Several hazardous substance spills were documented in Building 873 (40 gallons of tetrachloroethylene, 55 gallons of cleaning compound solvent, 20 gallons of cleaning compound solvent, 10 gallons of descaling compound, 1.5 gallons of corrosion removing compound, .75 gallons of corrosion removing compound, 2 gallons of sulfuric acid, 3 gallons of hydrofluoric acid, .5 gallon of hydrochloric acid, 3 pints of tincture benzoin, 55 gallons of diethylene glycol and 3 pints of methanol). The Spill Team responded, took the appropriate action and disposed of the residue in accordance with federal, state and local regulations. Samples were taken outside of the building and will be addressed in Parcel 25.2. In September 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 4 based on the cleanup of the spills.

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

			Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 25.2 - Building 875 and open land area surrounding Buildings 873 and 875	Pesticides Herbicides Waste oil containing PCP/PAHs Chlorinated solvents: Corrosives Flammables Petroleum products Spills: Tetrachloroethylene Hydraulic fluid Fog oil Cleaning compound solvent Lube oil Diethylene glycol Transmission fluid Malathion Oils/lubricants	Exact start date unknown assumed facility activation in 1942 - September 1997 Spill dates: March 9, 1990 August 16, 1991 Nov. 26, 1991 Nov 26, 1991 July 12, 1993 July 11, 1994 August 29, 1994 March 6, 1993 December 6, 1995	Building 875 is an open shed warehouse that stored various materials including hazardous substances and petroleum products when Building 873 was full. Several spills were documented for the open land area outside Buildings 873 and 875 (40 gallons of tetrachloroethylene, 2 gallons of hydraulic fluid, 55 gallons of fog oil, 18 gallons of cleaning compound solvent, 55 gallons of lube oil, 25 gallons of lube oil, 55 gallons of diethylene glycol, 5 gallons of transmission fluid, 2 gallons of malathion and 2 quarts of oil/lubricant). The Spill Team responded, took the appropriate action, removed stained soil and disposed of the residue in accordance with federal, state and local regulations. This parcel also contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. A 1,000-gallon heating oil tank was closed in place in July 1994 outside Building 875. Samples were collected from around Buildings 873 and 875 and results indicated levels of PAHs that exceeded the BCT screening criteria ¹ . A portion of Parcel 25.2 is an early removal candidate depending upon results of a risk assessment. In September 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 26.1 - Open land area surrounding Building 970	Pesticides Herbicides Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated no levels that exceeded BCT screening criteria ¹ . However, in October 1997 the BCT agreed that this parcel remain an ECP Category 7 until surface soils could be further evaluated. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

Parcel 27.1 - Open land area surrounding Building 972	Pesticides Herbicides Waste oil containing PCP/PAHs	Exact start date unknown assumed facility activation in 1942	This parcel contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of chromium ⁴ , PAHs and pesticides in surface soils and chromium and lead ⁴ in subsurface soils that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997 the BCT agreed that this parcel remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 28.1 - Open storage area X04 and open land area extending to Perry Road	Pesticides Herbicides Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel contains open storage areas and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were sprayed with herbicides and pesticides. According to Depot personnel, this area did not store hazardous substances. Samples were collected and results indicated aluminum and iron ⁴ in surface soil near the range of the BCT screening criteria ³ . The Preliminary Risk Evaluation indicated that noncarcinogenic risks were above one in a million due to aluminum and iron ⁴ , but the concentrations of these constituents in surface soils did not pose significant health risks. In October 1997, the BCT agreed this parcel should change from an ECP Category 7 to a Category 3. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 28.2 - Building 1089 and surrounding open land area extending to Perry Road	Pesticides Herbicides Waste oil containing PCP Corrosives Paints and paint related products Chlorinated solvents	Exact start date unknown assumed facility activation in 1942 - September 1997	This parcel is associated with Screening Site 89 (Acids - Building 1089). Building 1089 was used to store acids, paints and cleaning solvents. This parcel 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. In 1997 samples were collected and results indicated lead, arsenic and chromium ⁴ levels that exceeded BCT screening criteria ³ . Monitoring well 21 (MW-21) is also associated with this parcel. Groundwater samples taken from MW-21 detected VOCs and metals. These issues will be further defined during the current Main Installation Groundwater Investigation. In October 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6 as the area

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

			surrounding Building 1089 has been selected for a removal action. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 29.2 - Open storage areas X27 and X30, Building 801 and Building 802 and surrounding open land area extending to Perry Road	Pesticides (dieldrin, DDT) Herbicides Waste oil containing PCP Methylene chloride Spills: Hydraulic fluid	Exact start date unknown assumed facility activation in 1942 Spill dates: May 13, 1994 April 19, 1994	This parcel 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. In 1997, samples were collected and results indicated levels of chromium ⁴ , dieldrin, DDT and methylene chloride in surface soils that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997 the BCT agreed that this parcel remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 29.3 - Storm drainage ditch adjacent to Gate 9	Pesticides (DDT/p,pN-DDD/p,pN-DDE) Herbicides	Exact start date unknown assumed facility activation in 1942	This parcel is associated with Screening Site 56 (Western Storm Drainage Canal). In 1997, samples were collected and results indicated levels of aluminum, arsenic, chromium, iron and manganese ⁴ in surface soil; lead ⁴ in subsurface soil; PAHs ⁵ , lead ⁴ , p,pN-DDD and p,pN-DDE in sediments under the concrete lined ditch that exceeded BCT screening criteria ³ . PAHs were detected in sediments at levels exceeding criteria, but below background values. This parcel requires further investigation. In September 1997, the BCT agreed that this parcel remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

Parcel 30.2 - Spill area between Buildings 925 and 949	Flammables Pesticides Herbicides Waste oil containing PCP Chlorinated solvents Spill: Xylene Toluene Methyl ethyl ketone	Exact start date unknown assumed facility activation in 1942 Spill date: January 19, 1988	This parcel is associated with the former X25 open storage area and No Further Action Site 53 (Flammable Materials Spill). Beginning in the 1940s, flammable solvents were stored in drums on a gravel open storage area, then within an earthen-bermed open storage area at the northern end of the X25 area followed by a concrete-bermed open storage area. In the 1980s a fabric tension structure was erected over the area. In 1988 the structure collapsed during heavy winds releasing approximately 327 gallons of flammable material (xylene, toluene, methyl ethyl ketone) that mixed with approximately 30,000 gallons of water within the bermed area. The Depot Spill Team and Memphis Fire Department Hazardous Materials Team responded to the spill, pumped all liquid within the berm into tankers for transport to a licensed disposal facility. Building 925 was constructed in 1994 over a portion of the area. No sampling occurred in this parcel. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7 until samples were collected. In January 1998, two surface soil samples were collected, and results indicated no levels that exceeded BCT screening criteria ³ . In February 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 4.
Parcel 30.3 - Open storage area X23 and open land area surrounding Buildings 925 and 949	Pesticides Herbicides Waste oil containing PCP Flammables Chlorinated Solvents	Exact start date unknown assumed facility activation in 1942	This parcel is associated with open storage area X23 and former open storage area X25 where drums of flammable materials were stored. Buildings 925 and 949 were constructed on former open storage area X25. This parcel contains railroad tracks, open storage areas and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. No sampling has occurred at this parcel. Results from soil samples taken from other railroad track locations will be used to determine appropriate actions for railroad tracks sitewide. This parcel will be further investigation. In September 1997, the BCT agreed this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

Parcel 30.5 - Former spray paint area south of Building 949	Paints (that may have contained metals)	Exact start date unknown assumed facility activation in 1942	This parcel is associated with Screening 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. In 1997, samples were collected and results indicated levels of antimony, barium, beryllium, cadmium, chromium, iron, lead and zinc ⁴ that exceeded BCT screening criteria ³ . This parcel requires further investigation. In September 1997, the BCT agreed this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 31.1 - Open storage areas X17, X19, X20 and X21	Pesticides (dieldrin) Herbicides Waste oil containing PCP/PAHs Dibenz(ah)anthracene Flammables Corrosives Transformers containing PCB and non-PCB mineral oil Spill: Small amount of cleaning compound solvent leaking from 12 drums	Exact start date unknown assumed facility activation in 1942 Spill date: May 7, 1990 in X20 area	This parcel contains railroad tracks and open storage areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of arsenic, antimony, chromium, lead ⁴ , dieldrin, dibenz(ah)anthracene and PCBs that exceeded BCT screening criteria ³ . This parcel requires further investigation. In February 1998, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 32.3 - Open storage area X02, Building 865 and the surrounding open land area	Flammables Corrosives Toxics Petroleum products Pesticides Herbicide Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942 and building construction in 1988 No exact dates or substances for releases due to leaking containers	This parcel is associated with Screening Site 28 (Building 865, the Recoup Area Building). Building 865 is a handling area used to transfer hazardous substances/wastes or petroleum products/wastes from damaged or leaking containers into undamaged containers. This parcel also includes an open storage area and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of arsenic and lead ⁴ that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997, the BCT agreed this parcel should remain an ECP Category 7. Appropriate health

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

			and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 33.7 - Former aboveground storage tank east of Building 770	Diesel fuel Pesticides Herbicides Waste oil containing PCP/PAHs	Exact start date unknown assumed facility activation and tank construction in 1942	This parcel is associated with Screening Site 81 (Fuel Oil Building 765), a 12,000-gallon diesel fuel aboveground storage tank that was removed in 1994. This parcel also contains a gravel area that was historically sprayed with pesticides, herbicides and waste-oil containing PCP. In 1997, samples were collected and results indicated levels of PAHs that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 33.8 - Building 863 (MHE storage building and battery charging station)	Materials Handling Equipment containing acids, oils and lubricants	Exact start date unknown assumed building construction in 1943	The 1996 EBS visual inspection of this building identified several oil stains on the concrete floor of this building. In January 1998, two surface soil samples were collected from a nearby stormwater drainage area to determine if any metals were released due to battery charging operations. Sample results indicated no levels that exceeded BCT screening criteria ³ . In February 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 3. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 33.9 - Open storage areas X05, X06, X07, X08, X10, X11 and X12, Buildings 737 and 720 and open land area surrounding Buildings 720, 737, 753, 755, 756, 860 and 863	Flammables Corrosives Petroleum products Pentachloro- phenol Transformers containing non- PCB and PCB mineral oil Pesticides Herbicides Waste oil containing	Exact start date unknown assumed facility activation in 1942	This parcel is associated with Screening Site 42 (Former Pentachlorophenol (PCP) Dip Vat Area), Screening Site 43 (Former Underground PCP Tank Area), Screening Site 46 (Pallet Drying Area) and Screening 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 parcel contains railroad tracks, open storage areas and other gravel areas that were

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

	PCP/PAHs Spill: Ethyl acetate/naphtha aromatic	Spill date: July 26, 1993	historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. This parcel also contained a 12,000-gallon diesel aboveground storage tank west of Building 720 that was removed in 1997. 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. In 1993, leaking 55-gallon drums of ethyl acetate/naphtha aromatic stored in X10 were reported to the Spill team, which responded, took the appropriate actions and disposed of all residue in accordance with federal, state and local regulations. In 1997, samples were collected and results indicated levels of lead, chromium, arsenic ⁴ , PAHs, dieldrin and PCB-1260 that exceeded BCT screening criteria ³ . This parcel requires further investigation. In February 1999, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 34.2 - Open land area surrounding Building 360	Pesticides (dieldrin, chlordane) Herbicides Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. A sample was collected and results indicated chlordane at levels that exceeded the BCT screening criteria ³ . The Preliminary Risk Evaluation indicated that the carcinogenic and noncarcinogenic risks were below one in a million for both industrial and residential scenarios. In October 1997, the BCT agreed this parcel should change from an ECP Category 7 to a Category 3. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 35.1 - Building 1090	Paints Paint related materials Lubricating oil P-19 preservation oil Corrosion	Exact start date unknown assumed in 1952	Hazardous substances stored in Building 1090 included paint, paint thinner, lubricating oil, P-19 preservation oil, and corrosion prevention compound. No evidence of release. In February 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6 as the area surrounding this building has been selected

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

	prevention compound		for early removal actions. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 35.2 - Building 1084, Building 1085 concrete foundation and surrounding open land area	Pesticides (dieldrin, DDT) Herbicides Waste oil containing PCP Petroleum products Grease Lubricants Waste oil	Exact start date unknown assumed facility activation in 1942 and building construction in 1952	This parcel includes Early Removal Site 88 (Petroleum, Oils and Lubricants at Building 1085) which was a vehicle grease rack removed by 1988, Early Removal Site 29 (Former Underground Waste Oil Storage Tank) that was associated with Building 1085 and was removed in 1988, and Early Removal Site 87 (Pesticide/DDT Storage in Building 1084). This parcel also contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of arsenic, chromium, lead, cadmium ⁴ , dieldrin and petroleum that exceeded BCT screening criteria ³ . In February 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6 as this parcel has been selected for early removal actions. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 35.3 - Building 1086 (spray paint booth)	Corrosives Paints Paint related products Corrosion prevention compound Chlorinated solvents (naphthalene)	Exact start date unknown assumed building construction in 1952	This parcel includes proposed No Further Action Site 30 (Building 1086, Spray Paint Booth). Building 1086 also contains a floor drain sump that is connected to the sanitary sewer. In 1997, a sample was collected from the sump and results indicated levels of antimony, cadmium, cooper, lead, nickel, zinc ⁴ and naphthalene that exceeded BCT screening criteria ³ . In February 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6 as the area surrounding this building has been selected for early removal actions. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 3

Table 2 - Notification of Hazardous Substance Storage, Release or Disposal

Parcel 35.4 - Building 1087 (spray paint booth), metal-roofed shed south of Building 1088 and open land area surrounding south ends of these buildings	Paints Paint related products Corrosion prevention compounds Pesticides (dieldrin, DDT) Herbicides Waste oil containing PCP/PAHs Chlorinated solvents (methylene chloride)	Exact start date unknown assumed building construction in 1952 and facility activation in 1942	This parcel includes Screening Site 31 (Building 1087, Former Spray Paint Booth) and Screening Site 33 (Sandblasting Waste Drum Storage Area south of Building 1088). This parcel contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of PAHs, methylene chloride, dieldrin, DDT, lead, chromium, cadmium, arsenic and antimony ⁴ that exceeded BCT screening criteria ³ . In February 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6 as the area surrounding this building has been selected for early removal actions. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 35.5 - Building 1088, a 2,272-sq. ft. building erected in 1953 and used as the sandblasting facility, Building 1091, a 800-sq. ft. building erected in 1953 and used for paint and paint related material storage, and surrounding open land area extending to Perry Road	Paints (that may have contained metals such as chromium and lead) Paint related products Corrosion preventatives Sandblast waste possible containing lead-based paint fragments Waste oil containing PCP/PAHs	Exact start date unknown assumed facility activation in 1942 - September 1997	This parcel is associated with Remedial Investigation Site 32 (Sandblasting Waste Accumulation Area). This parcel also contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were sprayed with herbicides and pesticides. Samples were collected (several samples were associated with Screening Site 33 which is included in Parcel 35.4 immediately south of Site 32). Results associated with Site 32 indicated levels of chromium, lead, arsenic ⁴ and PAHs that exceeded BCT screening criteria ³ . This parcel has been selected for early removal. In October 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

¹ Provided the lessee strictly adheres to the Environmental Protection Provisions (Enclosure 5), including but not limited to Provision 14 - No subsurface disturbance, excavation, drilling or digging without prior written approval from the Government.

² Records indicate that many buildings that stored perishables or textiles during the Depot's history may have been fumigated to control pests. Also, buildings that stored hazardous materials may have residual impacts from releases. The BCT determined that a representative number of buildings should be sampled for hazardous

Enclosure 3**Table 2 - Notification of Hazardous Substance Storage, Release or Disposal**

substances in the air. The BCT reviewed these air sampling results at the December 1997 BCT meeting and determined that no further action was warranted or required.

³ BCT screening criteria were established by the BCT during the August 1997 BCT meeting and basically consist of the EPA Region III Risk Based Concentration table and, for some metals, regional background levels.

⁴ Certain substances such as arsenic, chromium, cadmium, antimony and lead occur naturally. Even though analytical results indicated these levels exceeded BCT screening criteria, these levels appear fairly consistently across the Depot and are being regarded as naturally occurring.

⁵ Polycyclic aromatic hydrocarbons (PAHs) may also be the result of vehicle traffic. PAHs result when substances such as wood, gasoline and oils burn. Even though analytical results indicated PAHs that exceeded BCT screening criteria, these levels are being regarded as originating from vehicle traffic on nearby streets.

Enclosure 4

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

Building Number	Name of Petroleum Product(s)	Date of Storage, Release, or Disposal	Remedial Actions
Parcel 3.11 - Former flamethrower test area west of Hole 9	Diesel fuel Kerosene PAHs	Exact start date unknown assumed facility activation in 1942	This parcel is associated with Screening Site 69 (Flamethrower Liquid Fuel Application). This area was used to test flamethrowers and fuel and to practice firefighting techniques after ignition of the fuel. This parcel also contains grassed areas that were historically sprayed with herbicides and pesticides. In 1997, samples were collected and results indicated levels of dieldrin and PAHs that exceeded BCT screening criteria ³ . This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of recreational activities at this site in accordance with Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 13.5 - Building 211 and associated emergency generator, Gates 23, 24 and 25 and surrounding open land area extending to Airways Blvd	Waste oil containing PCP Diesel fuel	Exact start date unknown assumed facility activation in 1942 and Building 211 construction in 1988	The emergency generator adjacent to Building 211 contains an active 500-gallon diesel fuel aboveground storage tank. There is no evidence of release from this tank. This parcel contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP. Results from soil samples taken at other railroad track locations will be used to determine appropriate actions for railroad tracks sitewide. This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 14.2 - Building 209 concrete foundation and surrounding open land area extending to Airways Blvd and Dunn Road	Heating oil Boiler blowdown Waste oil containing PCP	Exact start date unknown assumed building construction in 1942.	Building 209 was demolished in 1998. A 500-gallon heating oil tank was removed in July 1995. A 500-gallon boiler blow down tank was removed in July 1995. A 12,000-gallon heating oil tank was removed in July 1994. No evidence of release from these tanks has been found. This parcel contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated

Enclosure 4

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

			<p>dieldrin levels that exceeded BCT screening criteria³. Results from soil samples taken at other railroad track locations will be used to determine appropriate actions for railroad tracks sitewide. This parcel will be further investigated. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.¹</p>
Parcel 15.4 - Building 702 concrete foundation	Oils Greases Lubricants	Exact start date unknown. Assume building construction in 1941	<p>Building 702 was demolished in February 1998. Originally, Building 702 served as the officer's hobby shop. According to interview with Depot personnel, hazardous substances and petroleum products were used and stored in the building. A portion of the building was reportedly used as a spray paint booth. This parcel is associated with Screening Site 79 (Fuels, Miscellaneous Liquids, Wood and Paper). In 1997, samples were collected outside of the building in Parcel 15.6 and results indicated one chromium⁴ level above background. In February 1999, the BCT agreed that this parcel change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.</p>
Parcel 15.5 - Former waste material storage area west of Buildings 308 and 309	Damaged oil containers Damaged lubricant containers Hazardous waste (95% of waste consisted of expired shelf-life materials) in a variety of containers Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	<p>Damaged lubricant containers in a variety of sizes on pallets and empty oil barrels stored with the open end down were stored on a gravel pad north of B Street and west of Building 309. This parcel is associated with Screening Site 39 (DRMO Damaged/Empty Lubricant Containers). The open storage area and gravel area were also historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997 samples were collected and results indicated levels of metals⁴, DDT, trichloroethene and 1,1,2,2-tetrachloroethane that exceeded BCT screening criteria³. This parcel has been selected for early removal. In September 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this</p>

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

			site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 15.6 - Open storage areas X09, Y10 and Y50, Buildings 301, 309, T416, , 701 and 717, and surrounding open land area extending to Dunn Road	Petroleum products including oils, greases, lubricants and fuels Trans-formers containing mineral (dielectric) oil (non-PCB and PCB container) Waste petroleum products Waste oil containing PCP Spills: Dielectric fluid Hydraulic fluid	Exact start date unknown assumed facility activation in 1942 Spill dates: March 26, 1991 September 12, 1995	This parcel 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. A 4,000-gallon heating oil tank was removed in July 1994 from outside of Building 319. No evidence of releases from this tank has been identified. Transformers slated for disposal were staged on a bermed, concrete pad. Petroleum product spills were documented for this parcel and included ,1 gallon of dielectric fluid (non PCB) and 1.25 gallons of hydraulic fluid. The Spill Team responded to these spills, took the appropriate action and disposed of the residues in accordance with federal, state and local regulations. In 1997, samples were collected and results indicated levels of metals ⁴ , dieldrin, DDD, DDE, DDT and dioxins/furans in soils above BCT screening criteria ³ . This parcel requires further investigation. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 18.2 - Open land area surrounding Building 560	Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. Samples taken from other railroad tracks will be used to determine appropriate actions for railroad tracks sitewide. A sample was collected and results indicated no levels that exceeded the BCT screening criteria ³ . In September 1997 the BCT agreed that this parcel should change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.

Enclosure 4

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

Parcel 19.1 - Building 468 and open land area surrounding Buildings 465, 468 and 469	Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	<p>Thus parcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. Samples taken from other railroad tracks will be used to determine appropriate actions for railroad tracks sitewide. This parcel also contains a 1,000-gallon oil/water separator connected to the vehicle wash located at Building 465 (Parcel 19.2) that was cleaned after Depot closure. In 1996, a visual inspection of Building 468 indicated oil/hydraulic fluid stains due to leaking equipment. No spills are documented for this parcel. No sampling has been conducted at this parcel. In February 1999, the BCT conducted a visual inspection of this parcel and agreed that this parcel change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.</p>
Parcel 19.2 - Building 465, vehicle wash rack.	Waste oil and hydraulic fluid	Exact start date unknown assumed building construction in 1984 until September 1997	<p>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 Parcel 19.1. No sampling has been conducted at this parcel. In February 1999, the BCT conducted a walk through of Building 465, determined that the sump had been cleaned after Depot closure and that only grass cutting equipment had been cleaned since then. No spills were recorded for this parcel, and no other environmental concerns have been identified. In May 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.</p>
Parcel 19.3 - Building 469	<p>Oils Greases Lubricants Transformer mineral oil Spill: Transformer mineral oil (PCB containing)</p>	<p>Exact start date unknown assumed building construction in 1960 until September 1997</p> <p>Spill date: December 16, 1993</p>	<p>Acids, parts cleaning fluids and petroleum products were stored and used in Building 469. This parcel is associated with No Further Action 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. No sampling occurred at this parcel. On December 16, 1993, a transformer oil spill was reported at Building 469.</p>

Enclosure 4

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

			<p>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, the effected area was removed during sampling operations. In February 1999, the BCT conducted a visual inspection and was unable to locate the spill area. In May 1999, the BCT agreed that no further evidence of the spill remained, that a remedial action occurred, and that this parcel should change from an ECP Category 7 to a Category 4. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.</p>
Parcel 20.1 - Spill area on north dock of Building 489	Motor oil	November 3, 1995	<p>A 1-gallon oil spill was reported on November 3, 1995 at the north dock of Building 489, Section 4. The Spill Team responded, applied absorbent and disposed of the residue in accordance with federal, state and local regulations. The November 1996 Environmental Baseline Survey placed this parcel in ECP Category 3. In 1997 the ECP category definitions changed so that Category 3 was no longer appropriate for petroleum product releases. In December 1998, the BCT agreed Category 3 was not appropriate, as the release involved a petroleum product, and agreed the parcel should change from an ECP Category 3 to a Category 2. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.</p>
Parcel 20.5 - Open land area surrounding Buildings 470, 489 and 670	Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	<p>This parcel contains railroad tracks 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. A sample was collected and results indicated levels of dieldrin that exceeded BCT screening criteria³. Results from soil samples taken at other railroad track locations will be used to determine appropriate actions for railroad tracks sitewide. This parcel requires further investigation. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented</p>

Enclosure 4

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

			during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 21.5 - Open land area surrounding Buildings 490, 689 and 690	Pesticides Herbicides Waste oil containing PCP. Spills: Oil Hydraulic fluid Hydraulic fluid Turbine engine oil	Exact start date unknown assumed facility activation in 1942 Spill dates: January 17, 1995 August 15, 1995 November 6, 1995 February 17, 1994	This parcel 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 parcel is also associated with Screening Site 76 (Unknown Wastes Near Building 690). Petroleum product spills were documented for this parcel (2.5 gallons of oil, 2 gallons of hydraulic fluid, 2 gallons of hydraulic fluid and 10 gallons of turbine engine oil). Samples were collected and results indicated levels of chromium and lead ⁴ in subsurface soils that exceeded BCT screening criteria ³ . This parcel requires further investigation. In September 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 22.1 - Open land area between the east ends of Buildings 689 and 690	Waste oil containing PCP/PAHs	Exact start date unknown assumed facility activation in 1942	This parcel contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of antimony and PAHs that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 4

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

Parcel 22.2 - Spill area east of Building 685	Waste oil containing PCP/PAHs	Exact start date unknown assumed facility activation in 1942	This parcel contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. This parcel is also associated with Screening Site 77 (Unknown Wastes Near Buildings 689 and 690). In 1997, samples were collected and results indicated levels of antimony, arsenic ⁴ , dieldrin and PAHs in surface soils that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 23.6 - Open land area surrounding Buildings 783, 787 and 793, Gates 6, 7 and 8, and extending to Ball Road	Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel contains grassed areas that were historically sprayed with pesticides and herbicides as well as railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. Samples were collected and results indicated no levels that exceeded the BCT screening criteria ³ . In October 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 23.9 - Spill area northwest of Building 995	Gasoline	September 13, 1993	A 10-gallon gasoline spill was reported on September 13, 1993, northwest of Building 995 on the paved road. The Spill Team responded, applied absorbent and disposed of the residue in accordance with federal, state and local regulations. In 1997, samples were collected from the spill area. Petroleum hydrocarbons were detected but were below the Tennessee cleanup level. In October 1997, the BCT agreed this parcel should change from an ECP Category 7 to a Category 3. In 1997 the ECP category definitions changed so that Category 3 was no longer appropriate for petroleum product releases. In December 1998, the BCT agreed Category 3 was not appropriate, as the release involved a petroleum product, and agreed the parcel should change from an ECP Category 3 to a Category 2. The performance of industrial and/or commercial

Enclosure 4

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

			operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 23.10 - Open storage area X01	Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel contains an open storage area 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. Samples were collected and results indicated no levels that exceeded the BCT screening criteria ³ . In October 1997, the BCT agreed that this parcel change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 23.11 - Open land area surrounding Building 995	Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel 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. In 1997, a sample was collected from Parcel 23.9, a spill area within Parcel 23.11. Results indicated lead ⁴ in subsurface soils that slightly exceeds (24.3 mg/kg vs. 24 mg/kg) BCT screening criteria ³ . The BCT has made no decision to change the ECP category for this parcel. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 24.1 - Former material recoupment area at southeast corner of Building 873	Petroleum products including oils, greases, lubricants and fuels Waste petroleum products Waste oil containing PCP/PAHs	Exact start date unknown assumed facility activation in 1942 until 1984/1985 No exact dates or substances for spills that occurred during repouring or repackaging activities	The gravel area east of Building 873 was used as a materials recoupment area (remove materials from damaged containers then repackage the materials) until operations were moved inside Building 873 in 1984/1985. The open storage area/gravel area was also historically sprayed with pesticides, herbicides and waste oil containing PCP. This parcel is associated with Remedial Investigation Site 27 (Former Recoupment Area - Building 873). In 1985 soil impacted by spills during recoupment activities was removed. In 1997, samples were collected and results indicated elevated levels of vanadium and PAHs, which will be addressed in a sitewide risk evaluation. The November 1996 Environmental Baseline Survey categorized this parcel as an ECP Category 5 since a removal action had occurred, but further

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

			action may be needed. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 24.2 - Open storage area X03	Waste oil containing PCP/PAHs Spills: Mineral (dielectric) oil	Exact start date unknown assumed facility activation in 1942 Spill dates: June 3, 1994	This parcel was used for storage of flammable materials in 55-gallon drums until 1988. The area then became steel storage. This parcel contains railroad tracks, an open storage area and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. A petroleum product spill was documented for this parcel (10 gallons of non-PCB containing mineral oil from a transformer that fell off on a truck). The Spill Team responded, took the appropriate action and disposed of all residue in accordance with federal, state and local regulations. In 1997, samples were collected and results indicated arsenic ⁴ , PAHs and PCP levels in surface soils and lead ⁴ in subsurface soils that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 25.1 - Building 873	Motor oil Hydraulic fluid Lubricant Corrosion preventative Gun oil Waste gasoline and diesel Waste motor oil Petroleum product spill residue Spills:	Exact start date unknown assumed building construction in 1942 Spill dates:	This parcel is associated with Building 873 and Remedial Investigation (RI) Site 27 (Former Recoupment Area/Building S873). Building 873 is an open shed warehouse that stored hazardous substances such as chlorinated solvents, corrosives, petroleum products, oils and lubricants. The southern end of the building is RI Site 27 that was used as the hazardous substances and POL recoupment area (remove materials from damaged containers then repackage the materials). Recoupment activities were conducted until the current Recoup Building was constructed in 1987/1988. Petroleum product spills inside Building 873 were documented and included 25 gallons of lube oil and <5 gallons of transmission fluid from a broken forklift. The Spill Team responded, took the appropriate action and disposed of the residue in accordance with federal,

Enclosure 4

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

	Lube oil Trans- mission fluid	March 9, 1991 August 29, 1994	state and local regulations. Samples were taken outside of the building and will be addressed in Parcel 25.2. In September 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 4 based on the cleanup of the spills. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 25.2 - Building 875 and open land area surrounding Buildings 873 and 875	Petroleum, oil and lubricant products Waste oil Heating oil Waste oil containing PCP/PAHs Spills: Hydraulic fluid Fog oil Lube oil Lube oil Trans- mission fluid Oil/lubricant	Exact start date unknown assumed building construction and facility activation in 1942. Spill dates: August 16, 1991 November 26, 1991 March 2, 1992 July 21, 1993 August 29, 1994 December 6, 1995	Building 875 is an open shed warehouse that stored various materials including hazardous substances and petroleum products when Building 873 was full. Petroleum product spills were documented for the open land area outside Buildings 873 and 875 (2 gallons of hydraulic fluid, 55 gallons of fog oil, 55 gallons of lube oil, 25 gallons of lube oil, <5 gallons of transmission fluid and 2 quarts of oil/lubricant). The Spill Team responded, took the appropriate action, removed stained soil and disposed of the residue in accordance with federal, state and local regulations. This parcel also contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. A 1,000-gallon heating oil tank was closed in place in July 1994 outside Building 875. Samples were collected from around Buildings 873 and 875 and results indicated levels of PAHs that exceeded the BCT screening criteria ³ . A portion of Parcel 25.2 is an early removal candidate. In September 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 26.1 - Open land area surrounding Building 970	Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated no levels that exceeded BCT screening criteria ³ . However, in October 1997 the BCT agreed that this parcel remain an ECP Category 7 until surface soils could be further evaluated. Appropriate health and safety measures will be implemented during all remediation activities to

Enclosure 4

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

			ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 26.2 - Building 970	Heating oil	Exact start date unknown assumed building construction in 1942 No specific spill dates for generator oil leaks.	Building 970 contained an oil fired generator that had leaked oil onto the concrete foundation. 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 agreed this parcel should change from an ECP Category 7 to a Category 2. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 27.1 - Open land area surrounding Building 972	Waste oil containing PCP/PAHs Spills Hydraulic fluid Diesel fuel	Exact start date unknown assumed facility activation in 1942 Spill dates: October 5, 1993 March 14, 1995	This parcel contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. Petroleum product spills were documented for this parcel (34 gallons of hydraulic fluid, 3 gallons of diesel fuel). In 1997, samples were collected and results indicated levels of chromium ⁴ , PAHs and chlorinated pesticides in surface soils and chromium and lead ⁴ in subsurface soils that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997 the BCT agreed that this parcel remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 28.1 - Open storage area X04 and open land area extending to Perry Road	Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel contains an open storage area and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas sprayed with herbicides and pesticides. According to Depot personnel, this area did not store hazardous substances. Samples were collected and results indicated aluminum and iron ⁴ in surface soil near the range of the BCT screening criteria ³ . The Preliminary Risk Evaluation indicated that noncarcinogenic risks were above one in a million due to aluminum and iron ⁴ , but the concentrations of these constituents in surface soils did not pose significant health risks. In October 1997, the

Enclosure 4

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

			BCT agreed this parcel should change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 28.2 - Building 1089 and surrounding open land area extending to Perry Road	Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel is associated with Screening Site 89 (Acids - Building 1089). Building 1089 was used to store acids, paints and cleaning solvents. This parcel 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. In 1997 samples were collected and results indicated lead, arsenic and chromium ⁴ levels that exceeded BCT screening criteria ³ . Monitoring well 21 (MW-21) is also associated with this parcel. Groundwater samples taken from MW-21 detected VOCs and metals. These issues will be further defined during the current Main Installation Groundwater Investigation. In October 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6 as the area surrounding Building 1089 has been selected for a removal action. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 29.2 - Open storage areas X27 and X30	Waste oil containing PCP Spills: Hydraulic fluid Hydraulic fluid	Exact start date unknown assumed facility activation in 1942 Spill dates: May 13, 1994 April 19, 1994	This parcel contains railroad tracks, open storage areas and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. Petroleum product spills documented for this parcel included 25 gallons of hydraulic fluid and 5 gallons of hydraulic fluid. In 1997, samples were collected and results indicated levels of chromium ⁴ , dieldrin, DDT and methylene chloride in surface soils that exceeded BCT screening criteria ³ . In October 1997 the BCT agreed that this parcel remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 4

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

Parcel 30.3 - Open storage area X23 and open land area surrounding Buildings 925 and 949	Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel is associated with open storage area X23 and former open storage area X25 where drums of flammable materials were stored. Buildings 925 and 949 were constructed on former open storage area X25. This parcel contains railroad tracks, open storage areas and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. No sampling has occurred at this parcel; however, pesticides and PAHs have been detected near railroad tracks at several Depot locations and will be evaluated in an upcoming sitewide risk evaluation. In September 1997, the BCT agreed this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 31.1 - Open storage areas X17, X19, X20 and X21	Petroleum products including oils, greases, lubricants and fuels Trans- formers containing non-PCB and PCB mineral oil Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel contains railroad tracks and open storage areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of arsenic, antimony, chromium, lead ⁴ , dieldrin, dibenz(ah)anthracene and PCBs that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 32.3 - Open storage area X02, Building 865 and the surrounding open land area	Petroleum products including oils, greases lubricants and fuels Gasoline Diesel	Exact start date unknown assumed building construction in 1988 and facility activation in 1942	This parcel is associated with Screening Site 28 (Building 865, the Recoup Area Building). Building 865 is a handling area used to transfer hazardous substances/wastes or petroleum products/wastes from damaged or leaking containers into undamaged containers. This parcel also includes an open storage area and other gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of arsenic and lead ⁴ that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October

Enclosure 4

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

			1997, the BCT agreed this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 33.6 - Spill area west of Building 737	Mineral oil (<1 ppm PCB)	November 9, 1995	A 50-gallon mineral oil (<1 ppm PCB) spill was reported on November 9, 1995 outside of Building 737. The Spill Team responded, excavated contaminated material and disposed of the residue in accordance with federal, state and local regulations. The November 1996 Environmental Baseline Survey categorized this parcel 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 agreed Category 4 was not appropriate, as the release involved a petroleum product, and agreed the parcel should change from an ECP Category 4 to a Category 2. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 33.7 - Former aboveground storage tank east of Building 770	Waste oil containing PCP/PAHs Fuel oil	Exact start date unknown assumed facility activation in 1942 until 1994	This parcel is associated with Screening Site 81 (Fuel Oil Building 765), a 12,000-gallon fuel oil aboveground storage tank that was removed in 1994. This parcel also contains a gravel area that was historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of PAHs that exceeded BCT screening criteria ³ . This parcel requires further investigation. In October 1997, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 4

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

Parcel 33.8 is Building 863	Oils Greases Lubricants	Exact start date unknown assumed building construction in 1943 No exact dates or substances for releases from leaking equipment	The 1996 EBS visual inspection of this building identified several oil stains on the concrete floor of this building. In January 1998, two surface soil samples were collected from a nearby stormwater drainage area to determine if any metals were released due to battery charging operations. Sample results indicated no levels that exceeded BCT screening criteria ³ . In February 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
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	Petroleum products including oils, greases, lubricants and fuels Gasoline Diesel Trans- formers containing non-PCB and PCB (PCB-1260) mineral oil Waste oil containing PCP/PAHs Spills: Lube oil Lube oil	Exact start date unknown assumed Building 720 construction date and facility activation in 1942 Spill dates: March 17, 1992 January 13, 1994	This parcel is associated with Screening Site 42 (Former Pentachlorophenol (PCP) Dip Vat Area), Screening Site 43 (Former Underground PCP Tank Area), Screening Site 46 (Pallet Drying Area) and Screening 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 parcel contains railroad tracks and gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. This parcel 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 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. Petroleum product spills were documented for X11 behind Building 860 (several quarts of lube oil and 3 gallons of lube oil). In 1997, samples were collected and results indicated levels of lead, chromium, arsenic ⁴ , PAHs, dieldrin and PCB-1260 that exceeded BCT screening criteria ³ . This parcel requires further investigation. In February 1999, the BCT agreed that this parcel should remain an ECP Category 7. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection

Enclosure 4

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

			of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment ¹
Parcel 34.2 - Open land area surrounding Building 360	Waste oil containing PCP	Exact start date unknown assumed facility activation in 1942	This parcel contains railroad tracks that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were historically sprayed with pesticides and herbicides. A sample was collected and results indicated chlordane at levels that exceeded the BCT screening criteria ³ . In October 1997, the BCT agreed this parcel should change from an ECP Category 7 to a Category 3. The performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment.
Parcel 35.1 - Building 1090	Lubricating oil P-19 preservation oil	Exact start date unknown assumed building construction in 1952	Petroleum products stored in Building 1090 included lubricating oil and P-19 preservation oil. No evidence of release. In February 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6 as the area surrounding this building has been selected for early removal actions. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 35.2 - Building 1084, Building 1085 concrete foundation and surrounding open land area	Hydraulic fluid Waste oil Greases Oils Lubricants Waste oil containing PCP	Exact start date unknown assumed building construction in 1952 and facility activation in 1942	This parcel includes Early Removal Site 88 (Petroleum, Oils and Lubricants at Building 1085) which was a vehicle grease rack removed by 1988; Early Removal Site 29 (Former Underground Waste Oil Storage Tank) that was associated with Building 1085 and was removed in 1988, and Early Removal Site 87 (Pesticide/DDT Storage in Building 1084). This parcel also contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of arsenic, chromium, lead, cadmium ⁴ , dieldrin and petroleum that exceeded BCT screening criteria ³ . In February 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6 as this parcel has been selected for early removal actions. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the

Table 3 - Notification of Petroleum Product Storage, Release or Disposal

			environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 35.4 - Building 1087, a metal-roofed shed south of Building 1088 and the open land area surrounding the south ends of these buildings	Waste oil containing PCP/PAHs	Exact start date unknown assumed facility activation in 1942	This parcel includes Screening Site 31 (Building 1087, Former Spray Paint Booth) and Screening Site 33 (Sandblasting Waste Drum Storage Area South of Building 1088). This parcel also includes gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP. In 1997, samples were collected and results indicated levels of PAHs, methylene chloride, dieldrin, DDT, lead, chromium, cadmium, arsenic and antimony ⁴ that exceeded BCT screening criteria ³ . In February 1999, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6 as this parcel has been selected for early removal actions. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹
Parcel 35.5 - Building 1088 (sand blast facility), Building 1091 and surrounding open land area extending to Perry Road	Lubricating oil P-19 Preservation oil Waste oil containing PCP/PAHs	Exact start date unknown assumed Building 1091 construction in 1953 and facility activation in 1942	Building 1088 is associated with Remedial Investigation Site 32 (Sandblasting Waste Accumulation Area) Petroleum products stored in Building 1091 included lubricating oil and P-19 preservation oil. No evidence of release. This parcel also contains gravel areas that were historically sprayed with pesticides, herbicides and waste oil containing PCP and grassed areas that were sprayed with herbicides and pesticides. Samples were collected and results associated with Site 32 indicated levels of chromium, lead, arsenic ⁴ and PAHs that exceeded BCT screening criteria ³ . This parcel has been selected for early removal. In October 1997, the BCT agreed that this parcel should change from an ECP Category 7 to a Category 6 as the parcel has been selected for early removal. Appropriate health and safety measures will be implemented during all remediation activities to ensure the protection of human health and the environment. Therefore, the performance of industrial and/or commercial operations at this site in accordance with the Lease Restrictions will not pose an unacceptable risk to human health or the environment. ¹

Enclosure 4**Table 3 - Notification of Petroleum Product Storage, Release or Disposal**

¹ Provided the lessee strictly adheres to the Environmental Protection Provisions (Enclosure 5), including but not limited to Provision 14 - No subsurface disturbance, excavation, drilling or digging without prior written approval from the Government.

² Records indicate that many buildings that stored perishables or textiles during the Depot's history may have been fumigated to control pests. Also, buildings that stored hazardous materials may have residual impacts from releases. The BCT determined that a representative number of buildings should be sampled for hazardous substances in the air. The BCT reviewed these air sampling results at the December 1997 BCT meeting and determined that no further action was warranted or required.

³ BCT screening criteria were established by the BCT during the August 1997 BCT meeting and basically consist of the EPA Region III Risk Based Concentration table and, for some metals, regional background levels.

⁴ Certain substances such as arsenic, chromium, cadmium, antimony and lead occur naturally. Even though analytical results indicated these levels exceeded BCT screening criteria, these levels appear fairly consistently across the Depot and are being regarded as naturally occurring.

Enclosure 5

Environmental Protection Provisions

The following conditions will be placed in the lease to ensure there will be no unacceptable risk to human health or the environment and no interference to the ongoing Memphis Depot Caretaker installation restoration program (IRP) and to ensure regulatory requirements for the IRP and other compliance programs administered by the Army are met.

1. The sole purpose(s) for which the leased premises and any improvements thereon may be used, in the absence of prior written approval of the Government for any other use, is for uses similar or comparable to past or current activities of the Depot. These include light industry, storage, sorting operations, receiving, packaging and shipping, support activities, mechanical shop to support material handling equipment, training, education, general office and recreation.
2. The Lessee shall neither transfer nor assign this Lease or any interest therein or any property on the leased premises, nor sublet the leased premises or any part thereof or any property thereon, nor grant any interest, privilege, or license whatsoever in connection with this Lease without the prior written consent of the Government. Such consent shall not be unreasonably withheld or delayed. Every sublease shall contain the Environmental Protection Provisions herein.
3. The Lessee and any sublessee shall comply with the applicable federal, state, and local laws, regulations, and standards that are or may become applicable to Lessee's or sublessee's activities on the Leased Premises.
4. The Lessee and any sublessee shall be solely responsible for obtaining at its cost and expense any environmental permits required for its operations under the Lease, independent of any existing permits.
5. The Government's rights under this Lease specifically include the right for Government officials to inspect upon reasonable notice the Leased Premises for compliance with environmental, safety, and occupational health laws and regulations, whether or not the Government is responsible for enforcing them. Such inspections are without prejudice to the right of duly constituted enforcement officials to make such inspections. The Government normally will give the Lessee or sublessee twenty-four (24) hours prior notice of its intention to enter the Leased Premises unless it determines the entry is required for safety, environmental, operations, or security purposes. The Lessee shall have no claim on account of any entries against the United States or any officer, agent, employee, or contractor thereof.
6. The Government acknowledges that Defense Distribution Depot Memphis, Tennessee has been identified as a National Priorities List (NPL) Site under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended. The Lessee acknowledges that the Government has provided it with a copy of the Defense Distribution Depot Memphis, Tennessee Federal Facilities Agreement (FFA) entered into by the United States Environmental Protection Agency (EPA) Region 4, the State of Tennessee, and the Defense Logistics Agency effective March 1995, and will provide the Lessee with a copy of any amendments thereto. The Lessee agrees that should any conflict arise between the terms of such agreement as it presently exists or may be amended and the provisions of this Lease, the terms of the FFA will take precedence. The Lessee further agrees that notwithstanding any other

Enclosure 5

Environmental Protection Provisions

provisions of the Lease, the Government assumes no liability to the Lessee or its sublessees or licenses should implementation of the FFA interfere with the Lessee's or any sublessee's or licensee's use of the Leased Premises. The Lessee shall have no claim on account of any such interference against the United States or any officer, agent, employee or contractor thereof, other than for abatement of rent.

7. The Government, EPA and TDEC and their officers, agents, employees, contractors and subcontractors, have the right, upon reasonable notice to the Lessee and any sublessee, to enter upon the Leased Premises for the purposes enumerated in these subparagraphs, and for such other purposes consistent with any provision of the FFA:

(a) to conduct investigations and surveys, including, where necessary, drilling, soil and water sampling, test-pitting, testing soil borings and other activities related to the Defense Distribution Depot Memphis, Tennessee installation restoration program (IRP) or FFA,

(b) to inspect field activities of the Government and its contractors and subcontractors in implementing the Defense Distribution Depot Memphis, Tennessee IRP or FFA;

(c) to conduct any test or survey required by the EPA or TDEC relating to the implementation of the FFA or environmental conditions at the Leased Premises or to verify any data submitted to the EPA or TDEC by the Government relating to such conditions;

(d) to construct, operate, maintain, or undertake any other response or remedial action, as required or necessary under the Defense Distribution Depot Memphis, Tennessee IRP or FFA, including, but not limited to, monitoring wells, pumping wells and treatment facilities;

(e) to conduct Environmental Compliance Assessment System Surveys (ECAS).

8. The Lessee and any sublessee shall comply with the provisions of any health and safety plan in effect under the IRP or the FFA during the course of any of the above described response or remedial actions. Any inspection, survey, investigation, or other response or remedial action will, to the extent practicable, be coordinated with a representative designated by the Lessee and any sublessee. The Lessee and any sublessee shall have no claim on account of such entries against the United States or any office, agent, employee, contractor, or subcontractor thereof. In addition, the Lessee and any sublessee shall comply with all applicable Federal, state and local occupational safety and health regulations.

9. The Lessee further agrees that in the event of any assignment or sublease of the Leased Premises, it shall provide to the EPA and TDEC by certified mail a copy of the agreement or sublease of the Leased Premises (as the case may be) within fourteen (14) days after the effective date of such transaction. The Lessee may delete the financial terms and any other proprietary information from the copy of any agreement of assignment or sublease furnished pursuant to this condition. The Lessee, as directed by the Army, maintains a copy of all assignments or subleases and makes these documents available to the public upon request.

482 443

Enclosure 5
Environmental Protection Provisions

10. The Lessee shall strictly comply with the hazardous waste requirements under the Resource Conservation and Recovery Act (RCRA) or its Tennessee equivalent. Except as specifically authorized by the Government in writing, the Lessee must provide at its own expense hazardous waste management facilities, complying with all laws and regulations. Government hazardous waste management facilities will not be available to the Lessee. Any violation of the requirements of this condition shall be deemed a material breach of this Lease.

11. Defense Distribution Depot Memphis, Tennessee accumulation points for hazardous and other wastes will not be used by the Lessee or any sublessee. Neither will the Lessee or sublessee permit its hazardous wastes to be commingled with hazardous waste of the Department of the Army.

12. The Lessee shall prepare and maintain a Government-approved plan for responding to hazardous waste, fuel and other chemical spills prior to commencement of operations on the leased premises. Such a plan shall be independent of the Memphis Depot Caretaker plan and, except for initial fire response and/or spill containment, shall not rely on installation personnel or equipment. Should the Government provide any personnel or equipment, whether for initial fire response and/or spill containment, or otherwise on request of any Government officer conducting timely cleanup actions, the Lessee agrees to reimburse the Government for its costs.

13. The Lessee shall not construct or make or permit its sublessees or assigns to construct or make any alterations, additions, or improvements to, or installations upon or otherwise modify or alter the leased premises in any way which may adversely affect the Memphis Depot Caretaker environmental program, environmental cleanup, human health, or the environment, without the prior written consent of the Government. Such consent may include a requirement to provide the Government with a performance and payment bond satisfactory to it in all respects and other requirements deemed necessary to protect the interests of the Government. For construction or alterations, additions, modifications, improvements, or installations (collectively "work") in the proximity of operable units that are a part of a National Priorities List (NPL) site, such consent may include a requirement for written approval by the Government's BRAC Environmental Coordinator. Except as such written approval shall expressly provide otherwise, all such approved alterations, additions, modifications, improvements and installations shall become Government property when annexed to the Leased Premises.

14. The Lessee shall not conduct or permit its sublessees to conduct any subsurface excavation, digging, drilling, or other disturbance of the surface without the prior written approval of the Government.

15. The Lessee shall strictly comply with the hazardous waste permit requirements under the Resource Conservation and Recovery Act (RCRA), or its state equivalent, and any other applicable laws, rules or regulations. The Lessee must provide at its own expense such hazardous waste storage facilities that comply with all laws and regulations as it may need for such storage. Any violation of the requirements of this provision shall be deemed a material breach of this Lease.

Enclosure 5 Environmental Protection Provisions

16. LEAD-BASED PAINT WARNING AND COVENANT

(a) The Leased Premises do not contain residential dwellings and are not being leased for residential or child care purposes. The Lessee is notified that the Leased Premises contain buildings built prior to 1978 that contain lead-based paint.

(b) Available information concerning known lead-based paint and/or lead-based paint hazards, the location of lead-based paint and/or lead-based paint hazards, and the condition of painted surfaces is contained in the Environmental Baseline Survey that has been provided to the Lessee. Additionally, the following report pertaining to lead-based paint and/or lead-based paint hazards has been provided to the Lessee: Lead Based Paint Risk Assessment for DDMT (Barge, Waggoner, Sumner, and Cannon, December 1995, revised April 1996). Additionally, the Lessee has been provided with a copy of the federally-approved pamphlet on lead poisoning prevention. The Lessee hereby acknowledges receipt of all of the information described in this subparagraph

(c) The Lessee acknowledges that it has received the opportunity to conduct a risk assessment or inspection for the presence of lead-based paint and/or lead-based paint hazards prior to execution of this Lease

(d) The Lessee shall not permit use of any buildings or structures on the Leased Premises for residential habitation without first obtaining the written consent of the Government. As a condition of its consent, the Government may require the Lessee to (i) inspect for the presence of lead-based paint and/or lead-based paint hazards in and around buildings and structures on the Leased Premises; (ii) abate and eliminate lead-based paint hazards in accordance with all applicable laws and regulations; and (iii) comply with the notice and disclosure requirements under applicable federal, state, and local laws or regulations. The Lessee agrees to be responsible for any future remediation of lead-based paint found to be necessary on the Leased Premises.

(e) The Government assumes no liability for remediation or damages for personal injury, illness, disability, or death, to the Lessee, its successors or assigns, sublessees or to any other person, including members of the general public, arising from or incident to possession and/or use of any portion of the Leased Premises containing lead-based paint as residential housing. The Lessee further agrees to indemnify and hold harmless the Government, its officers, agents and employees, from and against all suits, claims, demands or actions, liabilities, judgments, costs and attorneys' fees arising out of, or in any manner predicated upon, personal injury, death or property damage resulting from, related to, caused by or arising out of the possession and/or use of any portion of the Leased Premises containing lead-based paint as residential housing. This section and the obligations of the Lessee hereunder shall survive the expiration or termination of this Lease and any conveyance of the Leased Premises to the Lessee. The Lessee's obligation hereunder shall apply whenever the United States of America incurs costs or liabilities for actions giving rise to liability under this section.

Enclosure 5
Environmental Protection Provisions

17 NOTICE OF THE PRESENCE OF ASBESTOS AND COVENANT

(a) The Lessee is hereby informed and does acknowledge that friable and non-friable asbestos or asbestos-containing materials (ACM) has been found on the Leased Premises, as described in the final base-wide EBS. The ACM on the Leased Premises does not currently pose a threat to human health or the environment. All friable asbestos that posed a risk to human health was either removed or encapsulated.

(b) The Lessee covenants and agrees that its use and occupancy of the Leased Premises will be in compliance with all applicable laws relating to asbestos; and that the Government assumes no liability for future remediation of asbestos or damages for personal injury, illness, disability, or death, to the Lessee, its successors or assigns, sublessees, or to any other person, including members of the general public, arising from or incident to the purchase, transportation, removal, handling, use, disposition, or other activity causing or leading to contact of any kind whatsoever with asbestos on the Leased Premises described in this Lease, whether the Lessee, its successors or assigns have properly warned or failed to properly warn the individual(s) injured. The Lessee agrees to be responsible for any future remediation of asbestos found to be necessary on the Leased Premises

18. NOTICE OF POLYCHLORINATED BIPHENYLS (PCBs) EQUIPMENT AND COVENANT.

(a) The Lessee is hereby informed and does acknowledge that equipment containing polychlorinated biphenyls (PCBs) might exist (overhead fluorescent light ballasts) on the Leased Premises, as described in the final base-wide EBS. All PCB-containing equipment has been properly labeled in accordance with applicable law and regulation. Any PCB contamination or spills related to such equipment has been properly remediated prior to execution of the Lease. The PCB equipment does not currently pose a threat to human health or the environment. In December 1993, 4 to 6 ounces of PCB-containing fluid was spilled on the south wall of Building 469 and soaked into the sheet rock wall and concrete. The BRAC Cleanup Team has reviewed the situation and has determined that no remedial action is necessary as the effected sheet rock and concrete were removed during sampling procedures immediately following the spill and no visual evidence remains.

(b) Upon request, the Army agrees to furnish to the Lessee any and all records in its possession related to such PCB equipment necessary for the continued compliance by the Lessee with applicable laws and regulations related to the use and storage of PCBs or PCB-containing equipment.

(c) The Lessee covenants and agrees that its continued possession, use and management of any PCB-containing equipment will be in compliance with all applicable laws relating to PCBs and PCB-containing equipment, and that the Army assumes no liability for the remediation of PCB contamination or damages for personal injury, illness, disability or death to the Lessee, its successors or assigns, sublessees or to any other person, including members of the general public arising from or incident to use, handling, management, disposition, or other activity causing or

Enclosure 5 Environmental Protection Provisions

leading to contact of any kind whatsoever with PCBs or PCB-containing equipment, whether the Lessee, its successors or assigns have been properly warned or failed to properly warn that individual(s) insured. The Lessee agrees to be responsible for any remediation of PCBs or PCB-containing equipment found to be necessary from its use and possession during the term of the Lease. This section and the obligations of the Lessee hereunder shall survive the expiration and termination of this Lease and any conveyance of the Leased Premises to Lessee.

19. The Lessee shall not use the Leased Premises for the storage or disposal of non-Department of Defense owned hazardous or toxic materials, as defined in 10 U.S.C. 2692, unless authorized under 10 U.S.C. 2692 and properly approved by the Government.

20. The Lessee shall notify recreational users of the Golf Course area that pesticides and herbicides were historically applied to this property. This notification will be written (i.e. signs placed in common areas and/or printed handouts/flyers). Notifications will include a statement that further information is available from the Memphis Depot Caretaker located at 2163 Airways Boulevard, Building 144, or by calling (901) 544-0613. This provision applies to the following parcels of property: Parcels 3.6, 3.7, 3.8, 3.9, 3.10, 3.11 and that portion of Parcel 3.5 known as the Golf Course bounded on the south by N Street, on the west by 3rd Street, on the east by 1st street and on the north by J Street and K Street.

21. The Army may impose any additional environmental protection conditions and restrictions during the terms of this lease that it deems necessary by providing written notice of such conditions or restrictions to the Lessee.

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 8

Please find comments from the Environmental Protection Agency (EPA) and the Department of Army and responses from the Memphis Depot Caretaker for FOSL 8. The draft Finding of Suitability to Lease (FOSL) was initially distributed for review to the Army Materiel Command (AMC), the Defense Logistics Agency (DLA), the Tennessee Department of Environment and Conservation (TDEC) and the EPA for review and comment on December 31, 1998. Comments from the AMC, DLA and the EPA were received and comment responses provided in the draft final FOSL on March 25, 1999. The EPA offered further discussion on four of their original comments and the TDEC offered no comments.

EPA Region 4 (T. Ballard)

1. Region 4 is providing these comments on the FOSL expressly contingent upon final documents being provided to Region 4 by DoD. Lease terms are required to be provided together with attendant lease restrictions. In the instant case, lease restrictions have been attached to the FOSL, but the remaining lease terms have not been provided. We request a copy of the lease inclusive of all lease terms and lease restrictions both prior to and after the lease's execution to properly augment EPA Records and ensure the inclusion of any unresolved regulatory comments. We reserve the right to alter our opinion of the FOSL upon receipt of the entire lease.

COMMENT NOTED. The Depot Redevelopment Corporation will provide EPA a copy of all leasing documents as they are produced for the parcels included in this FOSL. Interim Master Lease No. DACA01-445 was entered into by the City of Memphis and the Department of Army. It has been provided to the EPA and contains lease terms.

2. Section 1 - Purpose. The notification by the DoD to the State should include the length of the lease. Please provide this information.

COMMENT NOTED. The information is contained in the Interim Master Lease No. DACA01-445 and has been provided to the State. The Interim Master Lease term began on September 1, 1997 and will end August 31, 2002. The lease allows the Lessee the option to renew the lease for three (3) successive 5-year terms. EPA has been provided a copy of this Interim Master Lease.

3. Section 2 - Property Description. The document was transmitted electronically, and the Site maps did not accompany the text. Please ensure that copies of the site maps will be included as Enclosure 1 when transmitting the final document.

COMMENT NOTED. Enclosure 1 site maps will be provided.

4. Section 3.5 - Asbestos. This section states that asbestos-containing material (ACM) is present in the listed buildings. It, further, states that "all friable asbestos that posed an unacceptable risk to human health has been removed or encapsulated." It would be more informative to specify, parcel by parcel, whether the ACM that remains on the property is non-friable, friable (good condition) or friable (encapsulated).

COMMENT INCORPORATED.

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 8

5. Section 4 - Remediation. This section states, "Regulators have concurred with the Depot that the areas and buildings included in this Finding of Suitability to Lease 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." There are areas covered by this FOSL (e.g., Parcel 3) on which the Base Closure Team (BCT) continues to hold discussions about risk, exposure, etc. Therefore, EPA does not concur with this statement at this time. Please remove references that state or imply USEPA concurrence.

COMMENT NOTED. Results from the Final Streamlined Risk Assessment Parcel 3 Technical Memorandum (CH2M Hill, January 1999) will be included in Section 3.2 - Storage, Release or Disposal of Hazardous Substances. According to the assessment, which has been reviewed and accepted by the BRAC Cleanup Team, risks associated with Parcel 3 are either within or below acceptable exposure levels as defined by 40 CFR 300.430 (e)(2)(i)(A)(2). Information from the draft Baseline Risk Assessment for Golf Course Impoundments (Radian, December 1997) will also be included in Section 3.2. The BRAC Cleanup Team anticipates finalizing this assessment in the spring of 1999. This assessment indicates risks associated with consuming aquatic animals from either Lake Danielson or the Golf Course Pond were either within or below acceptable exposure levels as defined by 40 CFR 300.430 (e)(2)(i)(A)(2).

Upon further discussion of this comment, EPA will concur, for leasing purposes only, that the designated parcels are suitable for lease for uses consistent with the final Depot Redevelopment Plan. Any further EPA concurrence will have to be predicated on receipt and review of the final Main Installation baseline risk assessments scheduled to be completed by June 2000.

6. Section 8 - Finding of Suitability to Lease. CERCLA §120(h) allows the Army to out lease property on which hazardous substances have been stored, released or disposed without the Army's grant of the covenants mandated by §120(h)(3)(A)(ii), but only insofar as the Army, in consultation with the Administrator of the EPA, determines before leasing the property "that the uses contemplated for the lease are consistent with protection of human health and the environment, and that there are adequate assurances that the [Army] will take all remedial action referred to in subparagraph (A)(ii) that has not been taken on the date of the lease." (Emphasis added.) Please provide a statement that satisfies the requirement for "adequate assurances."

COMMENT NOTED. As provisions included in the Master Interim Lease and the Environmental Protection Provisions provided in this FOSL indicate, the Defense Logistics Agency has entered into a Federal Facility Agreement with the Environmental Protection Agency and the State of Tennessee dictating the completion of environmental restoration at this facility. Also, to transfer this property, which Congress has mandated for this property and which the Army has negotiated an economic development conveyance price with the Depot Redevelopment Corporation, all remedial actions must be in place or approved by the EPA Administrator. Congress, Department of Defense and Defense Logistic Agency have allocated funds to complete environmental restoration at this property.

Enclosure 6

Regulatory/Public Comments and Responses for FOSL 8

7. Enclosure 2 - Table 1, Description of Property. Parcel 3.10 (ECP Category 7) is described as "Suspected pistol range near Hole 9." Column 4 states, "In the late 1940s, this parcel was used as a pistol range." Please clarify whether the site is a suspected or confirmed pistol range. Please make a similar correction for this parcel as it appears in Tables 2 and 3.

COMMENT INCORPORATED. Will change the name of this parcel to "former pistol range near Hole 9." Information regarding this parcel was obtained via interviews with former employees and historical records. Sampling neither confirmed nor denied the presence of the pistol range.

8. Enclosure 2 - Table 1, Description of Property. Parcel 3.11 (ECP Category 7) is described as "Suspected flamethrower test site west of Hole 9." Column 4 states, "This area was used to test flamethrowers and fuel and to practice firefighting techniques after ignition of the fuel." Please clarify whether the site is a suspected or confirmed flamethrower test site. Please make a similar correction for this parcel as it appears in Tables 2 and 3.

COMMENT INCORPORATED. Will change the name of this parcel to "former flamethrower test site west of hole 9." Information regarding this parcel was obtained via interviews with former employees and historical records. Sampling neither confirmed nor denied the presence of the flamethrower test site.

9. Enclosure 2 - Table 1, Description of Property. Parcel 30.2 (ECP Category 7) is described as "Spill area between Buildings 925 and 949." Column 4 indicates that Building 925 was constructed over a portion of the spill area. These statements appear to be inconsistent. Please clarify. Please make a similar correction for this parcel as it appears in Tables 2 and 3.

COMMENT INCORPORATED. It should be noted that the environmental condition of property designation for Parcel 30.2 has been changed to a category 4. This can now be found on page 8 of Enclosure 2, as well as page 17 of Enclosure 3.

10. Enclosure 3 - Table 2, Notification of Hazardous Substance Storage, Release or Disposal. Whenever the United States enters into any contract for the sale or other transfer of real property which is owned by the United States and on which any hazardous substances was stored for one year or more, known to have been released, or disposed of, notice must be given of the type and quantity and such hazardous substance and of the time at which such storage, release or disposal took place, to the extent such information is available on the basis of a complete search of agency files. Further, the notice required by 40 CFR 373.1 must contain the following information:

a) The name of the hazardous substance; the Chemical Abstracts Services Registry Number (CASRN) where applicable; the regulatory synonym for the hazardous substance, as listed in 40 CFR 302.4, where applicable; the RCRA hazardous waste number specified in 40 CFR 261.30, where applicable; the quantity in kilograms and pounds of the hazardous substance that has been stored for one year or more, or known to have been released, or disposed of, on the property, and the date(s) that such storage, release, or disposal took place

Enclosure 6

Regulatory/Public Comments and Responses for FOSL 8

b) The following statement, prominently displayed "The information contained in this notice is required under the authority of regulations promulgated under 120(h) of the Comprehensive Environmental Response, Liability, and Compensation Act (CERCLA or "Superfund") 42 U.S.C. section 9620(h)."

Table 2 does not contain all the information required by 40 CFR 373. Please complete and/or provide an explanation why such information, including the CASRN, is not applicable.

COMMENT NOTED AND UNRESOLVED. This document is for the lease, not transfer or sale, of property. The transfer documents will contain the necessary information required by 40 CFR 373 regarding hazardous substances (as defined by CERCLA 101(14) and that appear at 40 CFR 302.4) including storage in quantities more than or equal to 1000 kilograms or the CERCLA reportable quantity as found in 40 CFR 302.3 and release or disposal of hazardous substances in quantities equal to or greater than the CERCLA reportable quantity as found in 40 CFR 302.3

11. Enclosure 3 - Table 2, Notification of Hazardous Substance Storage, Release or Disposal. Column 2 (Name of Hazardous Substances) does not, in every instance, contain a listing of the hazardous substances that are described in Column 4 (Remedial Actions). Please ensure that Column 2 includes all of the hazardous substances identified in Column 4, as Column 2 is an easy reference for the more detailed textual material contained in Column 4. For example, Column 4 of Parcel 35.4 states, "results indicated levels of PAHs, methylene chloride, dieldrin, DDT, lead, chromium, cadmium, arsenic and antimony that exceed BCT screening criteria," while Column 2 lists only Paint and Paint-related products. Column 2 should contain all the hazardous substances referenced in Column 4. Errors of this nature are noted, in the order in which they appear in Table 2, for Parcels 23.10, 34.2, 25.1, 24.1, 15.5, 25.2, 28.2, 35.5, 3.5, 3.6, 3.7, 3.9, 3.10, 3.11, 13.5, 14.2, 15.3, 15.4, 15.6, 19.3, 20.5, 20.6, 21.5, 22.1, 22.2, 23.7, 23.11, 24.2, 27.1, 29.2, 29.3, 30.3, 30.5, 31.1, 32.3, 33.9, 35.1, 35.2, 35.3 and 35.4.

COMMENT INCORPORATED. Waste oil contaminants have been incorporated into Column 2, except where PAH levels appear to be the result of vehicle exhaust from nearby street. As such, they will not be included in Column 2 and a footnote will be added regarding these substances. Some substances such as arsenic, cadmium, chromium, lead and antimony found in sample results were not necessarily the result of storage, release or disposal, but are interpreted as naturally occurring levels. As such, they will not be included in Column 2 and a footnote will be added regarding these substances.

12. Enclosure 3 - Table 2, Notification of Hazardous Substance Storage, Release or Disposal. Parcels 15.5, 25.1, 25.2 should be added to Table 2. Information regarding these parcels is included in Tables 1 and 3, but because of containing reference to a storage, release or disposal of hazardous substance on one or both of those tables, should be included in Table 2.

COMMENT NOTED. All three parcels were included in Table 2. Parcels in Tables 2 and 3 have been put into numerical order.

Enclosure 6

Regulatory/Public Comments and Responses for FOSL 8

13 Enclosure 4 - Table 3, Notification of Petroleum Product Storage, Release or Discharge
Please correct the title of this table to read, "Notification of Petroleum Storage, Release or Disposal."

COMMENT NOTED/INCORPORATED. Department of Defense FOSL policy requires notification of petroleum and petroleum product activities. Army FOSL guidance indicates the name of this table is "Petroleum Product Storage, Release or Disposal". Will change "Discharge" to "Disposal."

14. Enclosure 4 - Table 3, Notification of Petroleum Product Storage, Release or Discharge.
Parcel 35.2 omits from Column 2 the following petroleum products described in Column 4:
Vehicle grease and lubricant.

COMMENT INCORPORATED.

15. Enclosure 4 - Table 3, Notification of Petroleum Product Storage, Release or Discharge.
Parcels 15.6, 19 1, 19 2 and 19.3 should be added to Table 3, since they were subjected to a storage, release or disposal of petroleum products. See Tables 1 and 2 for this information

COMMENT NOTED. All four parcels were in Table 3. Parcels in Tables 2 and 3 have been placed in numerical order

16. Enclosure 5 - Environmental Protection Provisions. Paragraph 9 specifies that upon any assignment or sublease of the Leased Premises, the Lessee will provide to EPA and TDEC a copy of the agreement. While this language mirrors language in the Model Lease Provisions from the MOU, EPA suggests adding the Department of the Army to the list of recipients of sublease or assignment notification, in satisfaction of §IV(G) of the MOU, which states, "Copies of all subleases will be provided to the DoD Components with jurisdiction over the parcel, retained in the transaction file and made available to the public upon request " EPA, further, suggests that a sentence be added to the end of Paragraph 9, which reads, "Copies of any assignment or sublease of the Leased Premises will be retained in the Department of the Army transaction file and will be made available to the public upon request."

COMMENT NOTED/INCORPORATED. A sentence regarding the location of the "transaction file" will be added to Paragraph 9. The agency performing the Army's real estate management function for this property is the Mobile District of the U.S. Army Corps of Engineers. The Corps maintains their functional copy of all subleases in the Depot Redevelopment Corporation office on the Memphis Depot property. The Depot Redevelopment Corporation makes them available to the public for review during regular business hours.

17. Parcel 3.6, Lake Danielson, is classified ECP Category 7. To date, metals, pesticides and poly aromatic hydrocarbons (PAHs) have been identified in surface soils surrounding the lake, in storm water entering the lake and in lake sediments. Table 1 - Description of the Property said that efforts have been made to sample the tissue of edible fish, and that, to date, only inedible species have been found. A restriction against fishing in the lake until such time as sampling

Enclosure 6

Regulatory/Public Comments and Responses for FOSL 8

confirms that eating fish tissue does not pose a risk to human health or the environment should be placed in the Environmental Protection Provisions. It is unclear whether swimming or wading in the lake is inadvisable, if so, restriction on this and related types of activity should also be ensured. This restriction should remain in place until such time as it can be determined that past or future application of pesticides do not result in contamination of edible species.

COMMENT NOTED. Results from the Final Streamlined Risk Assessment Parcel 3 Technical Memorandum (CH2M Hill, January 1999) will be included in Section 3.2 - Storage, Release or Disposal of Hazardous Substances. According to the assessment, which has been reviewed and accepted by the BRAC Cleanup Team, risks associated with Parcel 3 are either within or below acceptable exposure levels as defined by 40 CFR 300.430 (e)(2)(i)(A)(2). Information from the draft Baseline Risk Assessment for Golf Course Impoundments (Radian, December 1997) will also be included in Section 3.2. The BRAC Cleanup Team anticipates finalizing this assessment in the spring of 1999. This assessment indicates risks associated with consuming aquatic animals from either Lake Danielson or the Golf Course Pond were either within or below acceptable exposure levels as defined by 40 CFR 300.430 (e)(2)(i)(A)(2).

Currently, a ban on fishing and swimming is in place and posted for Lake Danielson and the Golf Course Pond. The ban was implemented due to initial analytical results, concerns of possible injuries from unsupervised swimming as well as fishing on golf course fairways. Information regarding the current ban has been included with the above mentioned risk assessment information in Section 3.2.

18. The FOSL is acceptable as drafted save for its draft status and the incorporation of EPA comments. In summary, if the military chooses not to respond to these comments, USEPA's comments should be characterized as "unresolved regulatory comments" pursuant to DoD policy on FOSLs, and have said comments placed as an attachment to the lease agreement. EPA requests executed leases by the lessee to ensure the inclusion of any unresolved regulatory comments and in order to properly augment our records. Lastly, DoD should be aware that failure to comply with the above-delineated CERCLA requirements (under comments 10 and 11), may subject the Facility to citizen suits under CERCLA § 310 for "...failure to perform specified, non-discretionary duties.

EPA's comment on whether the uses contemplated for the lease are consistent with protection of human health and the environment assumes that nothing in the remainder of the lease will contradict the lease terms provided during this review. EPA is in possession of the Interim Master Lease between the Department of the Army and the City of Memphis and Shelby County, Tennessee (assigned to DRC). If the Interim Master Lease is the controlling Master Lease over this leasing transaction, a statement to this effect should be made in the FOSL. EPA expects to attach any of its comments, to the extent it considers them significant and they have not been incorporated into or addressed by the final FOSL and/or Lease, as an appendix to the documents.

Enclosure 6
Regulatory/Public Comments and Responses for FOSL 8

COMMENT NOTED. All comments received and response to comments are attached to this FOSL at Enclosure 6. A statement regarding the Interim Master Lease will be included in Section 1 - Purpose.

Enclosure 7

References

I The statutory and regulatory requirements relating to FOST/FOSLs are as follows:

CERCLA §120(h), 42 U S C §9620(h) - Property Transferred by Federal Agencies

10 U S C. § 2667(f) as amended by section 2906 of the FY 94 Defense Authorization Act requiring DOD and EPA to consult on FOSL procedures

40 CFR PART 373 - Reporting Hazardous Substance Activity when Selling or Transferring Federal Real Property.

II. The DOD Guidance relating to FOST/FOSLs is as follows..

DOD Guidance on the Environmental Review Process to Reach a Finding of Suitability to Transfer (FOST) for Property Where Release or Disposal has Occurred,
dated 1 June 1994

DOD Guidance on the Environmental Review Process to Reach a Finding of Suitability to Transfer (FOST) for Property Where No Release or Disposal has Occurred,
dated 1 June 1994.

DOD Policy on the Environmental Review Process to Reach a Finding of Suitability to Lease (FOSL), dated 18 May 1996

DOD Fast Track to FOST - A Guide to Determining if Property is Environmentally Suitable to Transfer , July 1997

DOD Fact Sheet - A Field Guide to FOSL, Fall 1996

DOD Memorandum, Subject: Clarification of "Uncontaminated" Environmental Condition of Property at Base Realignment and Closure (BRAC) Installations,
dated 21 October 1996

DOD Memorandum, Subject: Asbestos, Lead paint and Radon Policies at BRAC Properties, dated 31 October 1994

III. U.S. Environmental Protection Agency (EPA) Guidance

Guidance for Evaluation of Federal Agency Demonstrations that Remedial Actions are Operating Properly and Successfully Under CERCLA Section 120(h)(3), (Interim)
dated August 1996

EPA Memorandum, Subject: Military Base Closures: Guidance on EPA concurrence in the Identification of Uncontaminated Parcels under CERCLA Section 120(h)(4), re-issued March 27, 1997

Enclosure 7 References

IV Department of the Army Guidance

AR 200-1, Environmental Protection and Enhancement, dated 21 February 1997

DAIM-BO Memorandum, Subject. Clarification of Meaning of Uncontaminated Property for Purposes of Transfer by the United States, dated 9 December 1996

V. WWW BRAC Sites

1. DOD Sites –

DOD Base Closure and Transition Office –
<http://emissary.acq.osd.mil/bctoweb/bctohome.nsf>

DOD Environmental Base Realignment and Base Closure (BRAC) Program
<http://www.dtic.mil/envirodod/envbrac.html>

DOD Base Closure and Community Reinvestment
<http://www.acq.osd.mil/iai/bccr.htm>

DOD Office of Economic Adjustment
<http://www.acq.osd.mil/oea/index.html>

2. Environmental Protection Agency

EPA OSWER Federal Facilities Base Realignment and Closure
<http://www.epa.gov/swerffrr/brac.htm>

3. Department of the Army

Army Base Realignment and Closure Office
<http://www.hqda.army.mil/acsimweb/brac/brac3.htm>

CERL BRAC/NEPA "How To" Manual
<http://www.cecer.army.mil/facts/sheets/PL19.html>

Corps of Engineers Base Realignment and Closure (Camp Bonneville)
- Good Slide Presentation of Process.
<http://www.nps.usace.army.mil/geotech/bnvl/brac95/index.htm>

Presidio of San Francisco BRAC Environmental Restoration Program
- General information as well as facts on Presidio Cleanup and Conversion
<http://www.presidiosanfran.com>

482 456

Enclosure 7
References

4 Department of the Air Force

Air Force Base Conversion Agency
<http://www.afbca.hq.af.mil>

5. Department of the Navy

Navy NAVFAC Base Closure Site
<http://164.224.238.53:81/csohome.nsf>

Navy Facilities Engineering Command - information on Navy BRAC sites
http://www.ncts.navy.mil/homepages/navfac_es/bcp.htm

Navy Environmental BRAC News
<http://www.navy.mil/homepages/navfac/env/newslet.html>



DEFENSE LOGISTICS AGENCY
DEFENSE DEPOT SUSQUEHANNA, PENNSYLVANIA
MEMPHIS DEPOT CARETAKER DIVISION
2163 AIRWAYS BOULEVARD
MEMPHIS, TENNESSEE 38114-5210

482 457

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

482 458

DDSP-F

August 26, 1999

Jordan English
Tennessee Department of Environment and Conservation
Division of Superfund
2510 Mt. Moriah Road, Suite E-645
Memphis, TN 38115-1520

Dear Mr. English;

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

482 459

received

967-27-1996



**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).

482 460

If you have any questions, please contact Ms. Hymelia Craig of my staff at (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)

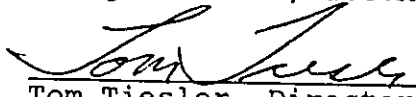
Permitted Capacity: 154,440 gallons

Permit Number: TNHW-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: TNHW - 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

File:

D.C. 660.420.000



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

482 463

U.S. NUCLEAR REGULATORY COMMISSION

PAGE 1 OF 5 PAGE: Amendment No. 1

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

<p>Licensee</p> <p>Defense Logistics Agency Defense Distribution Center</p> <p>DDC-T (Safety Office) 2001 Mission Drive New Cumberland, Pennsylvania 17070-5001</p>	<p>In accordance with the letter received August 3, 1998</p> <p>3. License number 37-30062-01 is amended in its entirety to read as follows:</p> <p>4. Expiration date February 28, 2005</p> <p>5. Docket No. 030-33261 Reference No.</p>
<p>Byproduct, source, and/or special nuclear material</p> <p>1. Any byproduct material with Atomic Numbers 3 through 83</p> <p>2. Any byproduct material with Atomic numbers 84 through 98</p> <p>3. Hydrogen 3</p> <p>4. Hydrogen 3</p> <p>5. Cobalt 60</p> <p>6. Cesium 137</p> <p>7. Iridium 192</p> <p>8. Thorium 230</p> <p>9. Thorium 232</p>	<p>Chemical and/or physical form</p> <p>A. Sealed sources</p> <p>B. Sealed sources</p> <p>C. Sealed light sources, parts containing luminous paint, and foils or plated sources</p> <p>D. Liquid standards</p> <p>E. Sealed sources</p> <p>F. Sealed Sources</p> <p>G. Sealed Sources</p> <p>H. Foil or plated sources and sealed sources</p> <p>I. Solid metal alloys, and solid thorium fluoride coating on optical systems</p> <p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. 1 curie per source and 10,000 curies total</p> <p>B. 1 curie per source and 1,000 curies total</p> <p>C. 75 curies per source and 900,000 curies total</p> <p>D. 0.5 millicurie per standard and 1 curie total</p> <p>E. 15 curies per source and 15,000 curies total</p> <p>F. 150 curies per source and 4,000 curies total</p> <p>G. 150 curies per source and 4,000 curies total</p> <p>H. 10 microcuries per source and 0.5 curies total</p> <p>I. 0.1 curie per source and 1,000 curies total</p>

NRC FORM 374A

U.S. NUCLEAR REGULATORY COMMISSION

482 464

PAGE 2 of 5 PAGES

MATERIALS LICENSE SUPPLEMENTARY SHEET

License Number

37-30062-01

Docket or Reference Number

030-33261

Amendment No. 5

- | | | |
|---|---|--|
| 6. Byproduct, source, and/or special nuclear material | 7. Chemical and/or physical form | 8. Maximum amount that licensee may possess at any one time under this license |
| J. Thorium 232 | J. Foils or plated sources and sealed sources | J. 10 microcuries per source and 0.5 curie total |
| K. Depleted Uranium | K. Solid | K. 10,000 kilograms |
| L. Depleted Uranium | L. Solid, heavy armor in Abram's tanks | L. As needed |
| M. Uranium 238 | M. Sealed sources | M. 10 millicuries per source and 0.5 curie total |
| N. Plutonium 238 | N. Plated sources, resins and sealed sources | N. 1 millicurie per source and 200 grams total |
| O. Plutonium 239 | O. Plated sources, resins and sealed sources | O. 1 millicurie per source and 200 grams total |

Authorized use:

- through O. Receipt, storage and packaging of serviceable Department of Defense commodity items containing licensed material and distribution of these items to any Department of Defense persons authorized to receive the licensed material, pursuant to the items and conditions of specific licenses issued by the U.S. Nuclear Regulatory Commission; and for use in calibration and verification of the licensee's instruments.

CONDITIONS

1. Licensed material may be used at the licensee's facilities located at Defense Distribution Center Depots at:

A. Anniston, Alabama:
Anniston Army Depot

K. Chambersburg, Pennsylvania:
Letterkenny Army Depot

B. Barstow, California:
Marine Corps Logistics Base
Yermo Facilities
Marine Corps Logistics Center
Nebo Facility

L. New Cumberland, Pennsylvania:
Defense Distribution Depot Susquehanna

C. Sacramento, California:
McClellan Air Force Base

M. Tobyhanna, Pennsylvania:
Tobyhanna Army Depot

NRC FORM 374A

U.S. NUCLEAR REGULATORY COMMISSION

PAGE 3 of 5 PAGES

482 465

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number
37-30062-01

Docket or Reference Number
030-33261

Amendment No. 5

D. San Diego, California:
San Diego Naval Air Station
North Island Facility

N. Corpus Christi, Texas:
Corpus Christi Naval Air Station
Leopard Street Warehouse

E. San Joaquin, California:
Sharpe Facility, Lathrop, California
Rough and Ready Island Facility
Stockton, California
Tracy Facility, Tracy, California

O. Texarkana, Texas:
Red River Army Depot

F. Jacksonville, Florida:
Jacksonville Naval Air Station

P. Ogden, Utah:
Hill Air Force Base
Ogden Depot

G. Albany, Georgia:
Marine Corps Logistics Base

Q. Norfolk, Virginia:
Norfolk Naval Shipyard

H. Warner Robins, Georgia:
Robins Air Force Base

R. Richmond, Virginia:
Defense Supply Center Richmond

I. Cherry Point, North Carolina:
Cherry Point Naval Air Station

S. Bremerton, Washington:
Puget Sound Naval Shipyard

J. Oklahoma City, Oklahoma:
Tinker Air Force Base, Oklahoma

1. A. Licensed material shall be used by, or under the supervision of, individuals designated in writing by the Radiation Safety Committee, Phyllis C. Campbell, Chairperson.

B. The Radiation Safety Officer for this license is Allen E. Hilsmeier.

2. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material at a single location to quantities below the limits specified in 10 CFR 30.32 i.1(i) and the limits specified in the letter dated July 9, 1998, items 27 and 28 and the attachment "emergency preparedness dose calculations," which require consideration of the need for an emergency plan for responding to a release of licensed material.

3. Licensed material shall not be used in or on human beings.

4. The licensee shall not use licensed material in field applications where activity is released except as provided otherwise by specific condition of this license.

NRC FORM 374A

U.S. NUCLEAR REGULATORY COMMISSION

PAGE 4 of 5 PAGES

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

37-30062-01

Docket or Reference Number

030-33261

Amendment No. 5

15. A. Sealed sources and detector cells containing licensed material shall be tested for leakage and/or contamination at intervals not to exceed six months or at such other intervals as are specified by the certificate of registration referred to in 10 CFR 32.210, not to exceed three years.
- B. Notwithstanding Paragraph A of this Condition, sealed sources designed to emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed three months.
- C. In the absence of a certificate from a transferor indicating that a leak test has been made within six months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
- D. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to any use or transfer as a sealed source.
- E. Sealed sources and detector cells need not be leak tested if:
- (i) they contain only hydrogen-3; or
 - (ii) they contain only a radioactive gas; or
 - (iii) the half-life of the isotope is 30 days or less; or
 - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or
 - (v) they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transfer to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
- F. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission and the source or detector cell shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within five days of the date the leak test result is known with the appropriate U. S. Nuclear Regulatory Commission, Regional Office referenced in Appendix D of 10 CFR Part 20. The report shall specify the source or detector cell involved, the test results, and corrective action taken.
- G. The licensee is authorized to collect leak test samples for analysis by the licensee. Alternatively, tests for leakage and/or contamination may be performed by persons specifically licensed by the Commission or an Agreement State to perform such services.

ORM 374A

U.S. NUCLEAR REGULATORY COMMISSION

482 467

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number
37-30062-01

Docket or Reference Number
030-33261

Amendment No. 5

While in storage, the Plutonium 239 alpha sources contained in the AN/UDM-7C Radiac Calibrator sets need not be leak tested at the frequency stated in Condition 15.B., but shall be leak tested at intervals not to exceed 3 years. However, when they are removed from storage for use or transfer to another person, and have not been tested within the leak test interval as required by Condition 15.B., the sources shall be tested before use or transfer.

Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.

The licensee shall not acquire licensed material in a sealed source or device unless the source or device has been registered with the U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.210 or equivalent regulations of an Agreement State.

The licensee shall conduct a physical inventory every twelve months, or at other interval approved by NRC, to account for all sealed sources and/or devices received and possessed under the license.

The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Application dated February 10, 1998
- B. Letter dated July 9, 1998
- C. Letter dated August 25, 1998

For the U.S. Nuclear Regulatory Commission

Date April 15, 1999

By

Pamela J. Henderson
Pamela J. Henderson
Nuclear Materials Safety Branch 2
Division of Nuclear Materials Safety
Region I
King of Prussia, Pennsylvania 19406

858689

APPENDIX E

TABLE E-1
ASBESTOS IDENTIFICATION SURVEY RESULTS

482 469

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
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	Storage	1943	A
15.6	T417	Storage	1943	A
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

482 471

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	Underground Bunker (Shop Space)	1942	A
23.3	787	Warehouse (Banding Facility)	1988	N
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	Office	1944	A
33.8	863	Office	1943	A
32.3	865	Hazardous Recoup Facility	1988	N
25.1	873	Open Storage	1942	A
25.2	875	Open Storage	1942	A
26.2	970	Open Storage	1942	A
27.2	972	Open Storage	1942	A
35.2	1084	Office	1953	A
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
Buildings not included in the Asbestos Identification Survey				
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	459	DEMOLISHED	1990	NA
19.1	467	DEMOLISHED	1987	NA
25.2	874	Sewage Pump Station	1949	A(P)
30.4	949	Open Warehouse Facility	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)

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE