

# **Base Realignment and Closure (BRAC) Project Management Plan (PMP) Camp Pedricktown, New Jersey**

**December 27, 2001**

**REVISION 9**

**Pilot Demonstration of the Clean Base Program at Camp Pedricktown  
GSA Contract No. GS-10T-99-EBD-0005  
Task No. ABH219844**

Prepared by:

Concurrent Technologies Corporation  
100 CTC Drive  
Johnstown, PA 15904-1935

## EXECUTIVE SUMMARY

### Introduction

This Base Realignment and Closure (BRAC) Project Management Plan (PMP) describes the status, management, and response strategy related to the ongoing BRAC environmental restoration program for the U. S. Army Base at Oldmans Township, New Jersey (Camp Pedricktown). This PMP supports the environmental restoration and ultimate transfer of the property at Camp Pedricktown that is designated for closure by the BRAC Commission. The goal of this program is to meet the regulatory requirements for no further environmental action or environmental closure of the BRAC property at Camp Pedricktown. The scope of the PMP is based on requirements derived from: the BRAC Act; the National Environmental Policy Act (NEPA); the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Community Environmental Response Facilitation Act (CERFA); the Resource Conservation and Recovery Act (RCRA); New Jersey Administrative Code 7:26E; and, other applicable federal, state, and local laws and regulations.

The Camp Pedricktown facility is located north of Penns Grove, in Oldmans Township, Salem County (population approximately 65,294), New Jersey on the northwestern side of New Jersey State Highway Route 130, approximately 0.5-miles east of the Delaware River. The site is adjacent to the Pedricktown dredged material storage areas, which are diked areas used for storage of dredged sediments from the Delaware River.

Oldmans Township is located in the Atlantic Coastal Plain Physiographic Province, which lies southeast of the Fall Line, a demarcation of the transition from the Atlantic Coastal Province to the Piedmont Province. Camp Pedricktown is located in an area that is bordered by the Delaware River and dredged river materials to the west, wetlands and rural farmlands to the east, dredged river materials to the north, and a Department of Defense Wildlife Management Area and residential area to the south. Route 130 parallels the eastern property boundary of the installation. The nearest heavily populated area, Penn Grove, is located approximately one mile south of the site. Topographic relief at the site is on the order of 10 to 15 feet.

Concurrent Technologies Corporation (*CTC*) is executing Task Order ABH219844 entitled "Pilot Demonstration of the Clean Base Program at Camp Pedricktown," under the General Services Administration Contract Number GS-10T-99-EBD-0005. This is a unique project in the area of environmental restoration since the approach and objective of the Clean Base Program (CBP) is the guaranteed remediation of the site for a fixed price that will ensure regulatory closure or attainment of no further action standards (as defined herein) of the site within an agreed upon timeframe.

The Camp Pedricktown PMP is intended to be a dynamic planning and execution document, developed during initial task execution with input from the BRAC Project Team which consists of:

- U.S. Army Fort Dix, BRAC Environmental Coordinator (BEC)
- Fort Dix Garrison Commander
- Technical Manager/Quality Assurance (TM/QA) representative

- FORSCOM BRAC Environmental Manager (BEM)
- FORSCOM BRAC Chief
- General Services Administration (GSA)
- New Jersey Department of Environmental Protection
- U.S. Environmental Protection Agency (EPA) Region II
- Camp Pedricktown Restoration Advisory Board (RAB)
- Camp Pedricktown Local Reuse Authority (LRA)
- CTC
- ARCADIS Geraghty & Miller (AGM).

The PMP will be updated regularly to reflect the current status and strategies of the remedial actions, compliance programs, and disposal and reuse planning.

### **Status of Environmental Restoration Program**

Several surveys and assessments of the Camp Pedricktown BRAC property have been conducted to identify contaminants and contaminant sources, and several interim remedial actions have been conducted to remove sources of contamination (see Table 3-3 for a complete listing). A site-wide Environmental Baseline Survey (EBS) was conducted in 1997, as required under CERFA. During 1997 - 1999, additional surveys were directed at asbestos, underground storage tanks, and transformer areas. The Preliminary Site Assessment (PSA) was conducted in 1991 and an Expanded Site Investigation was conducted in 1993.

The previous site investigation activities identified ten physical areas of concern on the site requiring further evaluation or action. In addition, there are five facilities identified that will require asbestos abatement. For purposes of this project, the ten areas requiring further evaluation or action and the five facilities requiring abatement of asbestos have been grouped into three environmental categories: Groundwater, Soil and Asbestos Containing Material (ACM). The remedial investigations and/or remedial actions conducted as part of this project will be performed concurrently for both groundwater and soil. ACM abatement actions will be conducted in the earlier stages of the project, independent from groundwater and soil remediation activities.

### **Installation History and Mission**

Camp Pedricktown, located in northwestern Oldmans Township, Salem County, New Jersey, is a U.S. Government property selected for partial closure by the BRAC 95 Commission. The site is located about 50 miles southwest of Trenton, New Jersey. Camp Pedricktown consists of approximately 85 acres and 260,000 square feet of facilities. The site is part of the Sievers-Sandberg U.S. Army Reserve Center (USARC). The site and the surrounding lands were locally-owned farms prior to World War I. In 1918, the Camp Pedricktown site was acquired by the U.S. Army and used to establish the Delaware Ordnance Depot. The depot remained in operation until 1958 as the final assembly and storage point for munitions prior to off-site shipment. The site also served as a back-up storage facility for the Picatinny and Frankford Arsenals and the Aberdeen Proving Grounds. From 1960 until 1965, Camp Pedricktown served as the headquarters for the 42nd and 43rd Artillery that commanded the Nike missile sites in the

Philadelphia area. Between 1965 and 1969, a total of 42 of the installation's facilities were turned over to the Salem County Technical Institute. The Salem County Technical Institute used the facilities until the school was displaced by the arrival of the 21st Corps, 79th Army Reserve Command (ARCOM) in the late 1960s. In 1974, the 21st Corps was replaced by the 78th Division of the Army Reserve. An eastern portion of the original installation is currently owned by Salem County Community College and used for recreational purposes.

The 1995 BRAC Commission recommended that Camp Pedricktown be closed, except for a Reserve Enclave to serve the Sievers-Sandberg USARC, providing essential facilities, and other areas required for Reserve Component training. On September 30, 1997 Camp Pedricktown was closed, except for a 39-acre Reserve Enclave. The closure of Camp Pedricktown will save base operation and maintenance funds, and provide reuse opportunities for approximately 46 acres of the 85-acre site.

The Camp Pedricktown site was transferred from the Defense Supply Agency to Fort Dix in July 1962. At this time the BRAC parcel is no longer used for any military related activities. The Reserve enclave is used by medical units to support reserve missions and for training, vehicle storage, and repair. During two weeks of each year, and for two days each month, the Reserve Enclave is heavily populated by military personnel who conduct military exercises in the immediate vicinity.

## Revision Log

The Camp Pedricktown PMP will be updated periodically throughout the project. All updates will be by section and an update may include only specific sections. To facilitate the management of updates, each page includes the date of publication in the upper right hand corner, while a revision number is included in the lower right hand corner of each page. This Revision Log provides information of the revisions and dates of each section. (\* Indicates that no revisions were made to that section of the PMP)

<b>Revision</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
<b>Date</b>	3 May 00	18 Jul 00	16 Aug 00	22 Aug 00	8 Sep 00	7 Oct 00	28 Feb 01	9 Aug 01	27 Dec 01	27 Dec 01
<b>Executive Summary</b>	3 May 00	*	*	*	*	*	*	*	*	*
<b>Table of Contents</b>	3 May 00	18 Jul 00	16 Aug 00	*	*	*	*	9 Aug 01	*	*
<b>Section 1</b>	3 May 00	*	*	*	*	*	28 Feb 01	*	*	*
<b>Section 2</b>	3 May 00	18 Jul 00	16 Aug 00	*	8 Sep 00	7 Oct 00	28 Feb 01	9 Aug 01	27 Dec 01	27 Dec 01
<b>Section 3</b>	3 May 00	18 Jul 00	16 Aug 00	22 Aug 00	8 Sep 00	*	*	9 Aug 01	27 Dec 01	27 Dec 01
<b>Section 4</b>	3 May 00	*	*	*	*	*	*	*	*	*
<b>Section 5</b>	3 May 00	*	*	*	*	*	*	*	*	*
<b>Section 6</b>	3 May 00	*	*	*	*	*	*	*	*	*
<b>Appendix A</b>	3 May 00	18 Jul 00	*	*	*	*	*	*	*	*
<b>Appendix B</b>	3 May 00	*	*	*	*	*	*	*	*	*
<b>Appendix C</b>	3 May 00	*	*	*	*	*	*	*	*	*
<b>Appendix D</b>	N/A	N/A	16 Aug 00	22 Aug 00	8 Sep 00	7 Oct 00	28 Feb 01	9 Aug 01	27 Dec 01	27 Dec 01
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<b>Table 1-3</b>	3 May 00	*	*	*	*	*	*	*	*	*
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<b>Table 3-2</b>	3 May 00	18 Jul 00	*	*	*	*	28 Feb 01	9 Aug 01	27 Dec 01	27 Dec 01
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<b>Table 4-1</b>	3 May 00	18 Jul 00	16 Aug 00	*	*	*	28 Feb 01	9 Aug 01	27 Dec 01	27 Dec 01
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## LIST OF ACRONYMS

ACM	Asbestos Containing Material
AGM	ARCADIS Geraghty & Miller
AOC	Areas of Concern
ARCOM	Army Reserve Command
ASR	Archive Search Report
AST	Aboveground Storage Tank
BCP	BRAC Cleanup Plan
BCT	BRAC Cleanup Team
BEC	BRAC Environmental Coordinator
BEM	BRAC Environmental Manager
bgs	Below Ground Surface
BRAC	Base Realignment and Closure
BRACO	Base Realignment and Closure Office
CBP	Clean Base Program
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEA	Classification Exception Area
CERFA	Community Environmental Response Facilitation Act
CHPPM	Center for Health Promotion and Preventative Medicine
CI	Commercial Industrial
C.O.	Commanding Officer
<i>CTC</i>	Concurrent Technologies Corporation
DEH	Department of Environmental Health
DER	Declaration of Environmental Restriction
DOD	Department of Defense
DPW	Department of Public Works
DSMOA/CA	Defense and State Memorandum of Agreement/Cooperative Agreement
DSERTS	Defense Site Environmental Restoration Tracking System
EA	Environmental Assessment
EDC	Economic Development Conveyance
EBS	Environmental Baseline Survey
EI/AA	Environmental Investigation/Alternatives Analysis
EI	Environmental Investigation
EE/CA	Engineering Evaluation and Cost Analysis
EOD	Emergency Ordnance Disposal
EPA	Environmental Protection Agency
ESI	Expanded Site Investigation
°F	Degree Fahrenheit
FORSCOM	Forces Command
FOSL	Finding of Suitability to Lease

FOST	Finding of Suitability to Transfer
FS	Feasibility Study
GPR	Ground Penetrating Radar
GSA	General Service Administration
GW	Groundwater
GWQS	Groundwater Quality Standards
HQDA BRACO	Headquarters, Department of the Army, Base Realignment and Closure Office
HQ FORSCOM	Headquarters, Forces Command
HRS	Hazard Ranking System
ITM	Information Technical Manager
LBP	Lead-Based Paint
LRA	Local Redevelopment Authority
LTM	Long-Term Monitoring
MOGas	Mobility Gasoline
NEPA	National Environmental Policy Act
NFA	No Further Action
NJAC	New Jersey Administrative Code
NOI	Notice of Interest
NORAD	North American Air Defense Command
NJDEP	New Jersey Department of Environmental Protection
NJPDES	New Jersey Pollutant Discharge Elimination System
NRC	Nuclear Regulatory Commission
NWI	National Wetlands Inventory
ODEP	Office of the Directorate of Environmental Programs
PAH	Polyaromatic Hydrocarbon
PA/SI	Preliminary Assessment and Site Inspection
PCB	Polychlorinated Biphenyls
PCE	Perchloroethylene
PMP	Project Management Plan
ppm	Part Per Million
PSA	Preliminary Site Assessment
RA	Remedial Action
RAB	Restoration Advisory Board
RAP	Remedial Action Plan
RAW	Remedial Action Workplan
RAWA	Remedial Action Workplan Addendum
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design

RI	Remedial Investigation
RI/FS	Remedial Investigation and Feasibility Study
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SHPO	State Historic Preservation Officer
SI	Site Inspection
SMP	Site Management Plan
SOW	Statement of Work
STP	Sewage Treatment Plant
TM/QA	Technical Manager/Quality Assurance
UXO	Unexploded Ordnance
USACHPPM	US Army Center for Health Promotion and Preventive Medicine
USACE	United States Army Corps of Engineers
USAEC	United States Army Environmental Center
USAR	United States Army Reserve
USARC	United States Army Reserve Command
UST	Underground Storage Tank
U/TBD	Unknown/to be determined
VOC	Volatile Organic Compound

## **SECTION 1.0 INTRODUCTION AND BACKGROUND**

This section presents an overview of the history and past operations at Camp Pedricktown and a discussion of environmental contamination associated with these operations. It provides a description of the installation facilities, addresses past waste management practices, and identifies other potential sources of environmental contamination. This section also provides a description of the physical location of the property and its geographical setting.

### **1.1 Installation History and Mission**

Information regarding historic land uses of Camp Pedricktown was collected through record searches, interviews, and map reviews. Table 1-1 provides information on the history of Camp Pedricktown (EBS 1997).

### **1.2 Description of Facilities**

Table 1-2 lists current and past facilities at Camp Pedricktown with their last known usage. The information in Table 1-2 was obtained from installation maps and installation real property records. Occasionally, the year a facility was built was determined by the presence of the facility on an installation map. Estimates made in this manner are indicated by parentheses "( )" around the date in the "Year Built" column of Table 1-2 (EBS 1997).

### **1.3 Facility Support Activities**

The Camp Pedricktown BRAC parcel is militarily inactive and the majority of buildings on site have had their contents removed. However, Finding of Suitability to Lease (FOSL) documents have been approved for buildings 100, 184, 188, 197, 322, 380, 474, 480, 495 and the paved area near Building 506. Leasing of building 380 and 480 began in February 1998. And leases for the other facilities began in 1999. Historically, the installation has been used as a final assembly and storage point for munitions prior to off-site shipment and as an Air Defense Command Headquarters. Other former features include several vehicle wash and maintenance areas, coal storage area, a septic system, a garbage grinding facility, and welding shops. A wastewater treatment facility remains in operation and services the Reserve Enclave and the leased facilities in the BRAC property. This section identifies and describes the support facilities and activities that may have or did contribute to environmental impacts. It also summarizes the environmental investigation and interim remediation activities that have occurred to date.

**Table 1-1. Camp Pedricktown Installation History**

<b>Date</b>	<b>Activity</b>
1917	USACE began acquiring locally owned property along the Delaware River.
1918	The Delaware Ordnance Depot was established on a site covering approximately 1,500 acres. The Delaware Ordnance Depot served as a final assembly and storage area for munitions during World War I, World War II, the Korean conflict, and afterwards until June 30, 1958.
1945	The site became the location of an ammunition renovation school.
1946	The Delaware Ordnance Depot became a sub-installation of the Raritan Arsenal in accordance with War Department General Order 146, dated December 5, 1946.
1947	The Camp Pedricktown site became the backup storage facility for the Picatinny and Frankford Arsenals, and the Aberdeen Proving Grounds.
1959	Jurisdiction of the site was transferred to the Chief Engineer of the USACE for civil works purposes.
1959	In November, all property, except the current Camp Pedricktown site, was designated as the Pedricktown Disposal Facility. The Pedricktown Disposal Facility was used as a disposal area for dredged materials from the Delaware River.
1960	The Camp Pedricktown site became the headquarters for the 42nd and 43rd Artillery, whose mission was the command of the Nike missile sites in the Philadelphia area. The site became known as the Philadelphia Air Defense Site. A North American Air Defense Command (NORAD) center was built on the site at this time, and these groups remained until 1965.
1962	The Camp Pedricktown site was transferred from the Defense Supply Agency to Fort Dix in July.
1965	42 facilities at the site were leased to the Salem County Technical Institute.
Late 1960s	The institute moved to a new location with the arrival of the 21st Corps, 79th ARCOM.
1974	The 78th Division (Training) of the U.S. Army Reserve (USAR) replaced the 21st Corps.
1975	Ownership of the approximately 11-acre site currently occupied by the Salem County Technical Institute was transferred to Salem County.
1995	The BRAC Commission recommends closure of Camp Pedricktown, except for a Reserve Enclave.
1997	September 30, Camp Pedricktown is closed except for a 39-acre Sievers Sandberg Reserve Center
Current	The primary mission of the Siever-Sandberg USARC is to provide grounds and buildings to support the administration, supply, training, and maintenance activities of the U.S. Army Reserve.

**Table 1-2. Camp Pedricktown Facilities**

<b>Building Number</b>	<b>Condition of Building</b>	<b>Year Built</b>	<b>Use</b>	<b>Status</b>
100	Good	1941	Gatehouse	Current
120	Unusable	1918	Family Housing, Officers' Quarters	Unoccupied
130	Unusable	1934	Detached Garage	Current
151	Good	1946	Flagpole	Current
170	Good	1987	Waiting Shelter	Current
171	Good	1942	Headquarters Building	Current
173	Good	1961	Officers' Mess, Officers' Club	Current
177	Good	1940	Family Housing, Officers' Quarters	Unoccupied
179	Good	1940	Family Housing, C.O. Quarters	Unoccupied
184	Good	1918	Training Auditorium, Store Room, Garage and Greenhouse; Paint Shop; Motor Repair Shop (use dates unknown)	Current
188	Good	1951	Detached Garage	Current
197	Good	1919	Detached Garage	Current
274	Good	1939	Former Post Hospital	Current
276	Unusable	1939	Family Housing	Unoccupied
277	Unusable	1939	Family Housing	Unoccupied
278	Unusable	1939	Family Housing	Unoccupied
285	Good	1941	Detached Garage	Unoccupied
286	Good	1941	Detached Garage	Unoccupied
287	Good	1941	Detached Garage	Unoccupied
288	Good	1941	Detached Garage	Unoccupied
300	Demolished	(1942)	Storage	Demolished
301	Demolished	(1942)	WPA Time Shed	Demolished
304	Demolished	(1942)	Grandstand	Demolished
314	Demolished	(1942)	Ball field	Demolished
315	Unusable	(1965)	Helicopter Pad	Unoccupied
320	Demolished	(1942)	Laboratory, Storage, Inspectors Workshop, NCO Mess	Demolished
322	Good	1961	Enlisted Open Dining Currently Used by USARC	Current
344	Demolished	(1979)	Grandstand	Demolished
351	Unusable	1961	Enlisted Unaccompanied Housing	Unoccupied

**Table 1-2. Camp Pedricktown Facilities (continued)**

<b>Building Number</b>	<b>Condition of Building</b>	<b>Year Built</b>	<b>Use</b>	<b>Status</b>
354	Demolished	(1945)	Storage, Dog Kennels, Refreshment Stand	Demolished
363	Good	1942	Combination Athletic Courts, Tennis Court	Current
371	Unusable	1961	Enlisted Unaccompanied Housing	Unoccupied
380	Fair needs some work	1938	Magazine Area Change House	Unoccupied
381	Demolished	(1942)	WPA Lunch Room, Storage	Demolished
390	Demolished	(1942)	Magazine and Surveillance Office	Demolished
404	Good	1942	Vehicle Maintenance Activities	Current
413	Unusable	1931	Motor Pool Building, Storage of Waste Oils and Solvents (use dates unknown)	Current
421	Fair needs major work	1960	Access Control Building (Sentry)	Current
422	Poor	1960	Power Plant Building	Current
432	Fair needs some work	1959	Communications Center/Storage General Purpose Installation	Current
434	Fair	1942	Storage General Purpose Installation Currently Used by USARC	Current
435	Demolished	(1942)	U & M Field Office, Storage	Demolished
440	Unusable	1945	Dining Facility	Current
447	Demolished	(1942)	Cold Frame	Demolished
452	Poor	1960	Water Supply/Treatment Building/Pumping Plant	Current
461	Poor	1964	Water Tank	Current
463	Demolished	(1942)	Storehouse, Engineer Warehouse	Demolished
464	Fair	1951	Storage General Purpose Installation Currently Used by USARC	Current
468	Demolished	(1942)	Quarters	Demolished

**Table 1-2. Camp Pedricktown Facilities (continued)**

<b>Building Number</b>	<b>Condition of Building</b>	<b>Year Built</b>	<b>Use</b>	<b>Status</b>
471	Fair	1964	Coal Storage Bins (use dates unknown)	Storage Area
473	Poor	1937	Engineering/Housing Maintenance Shop	Current
474	Poor needs major work	1934	Engineering/Housing Maintenance Shop	Current
475	Fair	1941	Separate Toilet/Shower Facility Currently Used by USARC	Current
480	Good needs minor work	1942	General Purpose Installation Storage, Currently Used by USARC	Current
482	Demolished	(1942)	Old Incinerator	Demolished
484	Unusable	1932	General Purpose Installation Storage, Currently Used by USARC	Current
485	Poor needs major work	1935	Heating Plant Building	Current
491	Demolished	(1942)	Rail Transportation Office	Demolished
493	Demolished	(1942)	Railroad Scale House	Demolished
494	Poor needs major work	1934	Engineer/Housing Maintenance Shop	Current
495	Poor needs major work	1934	Engineer/Housing Maintenance Shop	Current
506	Fair needs some work	1935	General Purpose Installation Storage, Currently Used by USARC	Current
507	Demolished	(1965)	Sewage Plant Pumphouse (use dates unknown)	Demolished
527	Demolished	(1964)	15,000-gallon Septic Tank and Drainage Field	Demolished
530	Poor	1975	Sewage/Waste Treatment Building	Current
531	Poor	1975	Sewage Treatment Plant/Secondary	Current
536	Demolished	(1965)	Wash Platform	Demolished
537	Demolished	(1942)	10,620-gallon Septic Tank and Drainage Field	Demolished
546	Demolished	(1964)	Garbage Grinding Facility	Demolished

**Table 1-2. Camp Pedricktown Facilities (continued)**

<b>Building Number</b>	<b>Condition of Building</b>	<b>Year Built</b>	<b>Use</b>	<b>Status</b>
548	Demolished	(1964)	Grease Rack, Storage Bins	Demolished
556	Demolished	(1964)	Wooden Rack (Automobile Ramp, Grease Rack), Storage Bins	Demolished
569	Demolished	(1964)	Time Alleys A & B, Storage, Engineering Storage	Demolished
538 (FAC1004)	Unusable	(1964)	Storage Shed: with attached wash rack	Current
547(FAC1010)	Demolished	(1945)	Incinerator and Trash Bin	Demolished
590 (FAC1000)	Unusable	Unknown	Vehicle Wash Rack	Current
FAC1001	Unusable	Unknown	Scrap Metal Yard	Current
FAC1002	Fair	Unknown	Military Vehicle Parking Area	Current
FAC1003	Unusable	Unknown	Former Railroad Loading Area	Current
FAC1005	Unusable	Unknown	Railroad Track Leading to Building 495	Current
FAC1006	Unusable		Pump Island to East of Facility 315	Current
FAC1012	Unusable	1931	Abandoned Pump Island in Vicinity of Building 413	Unoccupied
T-270	Demolished	(1942)	Emergency Hospital.	Demolished
T300	Demolished	(1942)	Signal Shop, HQ Air Force, Administration Building	Demolished
T-371	Demolished	(1942)	Storage, Truck Repair Shop	Demolished
T-389	Demolished	(1945)	Rail Trans	Demolished
T-391	Demolished	(1942)	Magazine and Surveillance Time Alley	Demolished
T-426	Demolished	(1942)	Bachelor Officers' Quarters	Demolished
T-478	Demolished	(1942)	Garage	Demolished
T-488	Demolished	(1963)	Unknown	Demolished
T-498	Demolished	(1960)	Unknown	Demolished
T-500	Demolished	(1942)	Storage Shed	Demolished
T-501	Demolished	(1945)	Storage	Demolished
T-503	Demolished	(1942)	Shelter	Demolished
T-514	Demolished	(1942)	Blacksmith and Welding Shop	Demolished
T-525	Demolished	(1942)	Storage Shed	Demolished
T-555	Demolished	(1942)	Horse Shelter	Demolished

Note: Construction dates in parentheses “( )” are the year of the oldest map on which the building or facility appears. The actual construction dates are unknown.

### 1.3.1 Hazardous Materials/Waste Management

Hazardous materials used at Camp Pedricktown were those associated with the repair and maintenance of vehicles, final assembly, storage, and renovation of ammunition. Table 1-3 lists locations where hazardous materials were previously stored or used.

**Table 1-3. Camp Pedricktown Hazardous Materials Use**

<b>Building Number</b>	<b>Activity/Hazardous Materials</b>
USTs	Primarily for fuel oil storage; found throughout the site.
184	Paint shop.
404	Vehicle maintenance activities. (non-BRAC)
413	Service station, storage for solvents and oils Drums containing waste solvents and other materials stored outside. (non-BRAC)
422	Former power plant.
471	Former coal storage bins, storage of drums containing hazardous waste and other non-hazardous waste streams.
473	Paint shop, flammable and solvent storage.
484	Generator and battery shed.
495	Machine shop and a chemical detergent laundry unit, chemical processing plant with laboratory, storage of hazardous materials and oil bearing soil.
506	Battery charging shop and storage.
530	Sewage treatment plant, chemical storage.
538	Small quantities flammable storage.
590	Vehicle wash area and scrap metal dump.

Information obtained from interviews and documentation indicates that, in the past, there have been releases of petroleum from Underground Storage Tanks (USTs) at the site. The records show that these releases resulted from overfilling the tanks and were not caused by tank failures. It has been reported that the Nike Command Center may have disposed of liquid wastes on site, possibly by dumping them into sumps where they soaked into the ground. This would be consistent with the general operational procedures used at Nike sites (EBS 1997). However, specific details regarding waste disposal at the Nike Command Center at Camp Pedricktown were not available.

### 1.3.2 Solid Waste/Landfill Management

Current solid waste disposal practices include the use of trash dumpsters and, as needed, removal by a private contractor to off-site disposal facilities. A document from 1985 indicates that there are no abandoned landfills located within the BRAC boundaries.

### 1.3.3 Underground Storage Tanks/Fuel Pipeline

As indicated within the USACE Final UST Closure Report, all USTs have been removed from the BRAC parcel. Several other unregulated abandoned USTs (e.g., near Buildings 432 and 413) remain in place. Table 1-4 lists the location, capacity, contents, and status of all current/previous storage tanks at Camp Pedricktown

**Table 1-4. Camp Pedricktown Storage Tank Summary**

<b>Building Number Location</b>	<b>Capacity (Gallons)</b>	<b>Contents</b>	<b>Status</b>	<b>Comments</b>
171	1,500	No. 2 Fuel Oil	Active	EBS Survey
173	1,000	No. 2 Fuel Oil	Active	"
173	4,000	No. 2 Fuel Oil (No. 5)	Active	"
179	1,000	No. 2 Fuel Oil	Removed	USACE Final
184	1,000	No. 2 Fuel Oil	Removed	EI/AA
219	275	Fuel Oil	Removed	EBS Survey
220	1,000	No. 2 Fuel Oil	Inactive	"
225	1,000	Fuel Oil	Inactive	"
227	1,000	Fuel Oil	Inactive	"
229	275	Gasoline	Inactive	"
233	Unknown	Unknown	Removed	"
273	1,500	No. 2 Fuel Oil	Active	"
274	1,000	No. 2 Fuel Oil	Active	"
276	550	No. 2 Fuel Oil	Active	"
276	550	No. 2 Fuel Oil	Active	"
277	550	No. 2 Fuel Oil	Active	"
277	550	No. 2 Fuel Oil	Active	"
278	550	No. 2 Fuel Oil	Active	"
278	550	No. 2 Fuel Oil	Active	"
322	5,000	No. 2 Fuel Oil	Removed	USACE Final

**Table 1-4. Camp Pedricktown Storage Tank Summary (continued)**

<b>Building Number Location</b>	<b>Capacity (Gallons)</b>	<b>Contents</b>	<b>Status</b>	<b>Comments</b>
351	1,000	No. 2 Fuel Oil	Removed	USACE Final
351	6,000	No. 5 Fuel Oil	Inactive	AST
351	550	No. 2 Fuel Oil	Removed	USACE Final
371	1,000	No. 5 Fuel Oil	Removed	AST
371	6,000	No. 2 Fuel Oil	Removed	USACE Final
371	550	No. 2 Fuel Oil	Removed	"
380	5,000	No. 2 Fuel Oil (No. 4)	Removed	"
413	14,000 (10,000)	MOGas	Inactive	EBS Survey
413	10,000	Diesel	Inactive	"
413	1,000	Waste Oil	Inactive	"
440	5,000	No. 2 Fuel Oil	Removed	USACE Final
464	1,000	No. 2 Fuel Oil	Active	AST
464	1,000	No. 2 Fuel Oil	Active	AST
464	1,000	No. 2 Fuel Oil	Active	AST
468	275	No. 2 Fuel Oil	Removed	AST
485	6,000	No. 2 Fuel Oil (No. 4)	Abandoned in place	USACE Final
485	275	No. 2 Fuel Oil	Active	AST
547	1,000	Fuel Oil	Removed	USACE Final
100 - west	Unknown	Unknown	Unknown	Located by GPR
100 - west	Unknown	Unknown	Unknown	Located by GPR
130 (120)	1,000	No. 2 Fuel Oil	Removed	USACE Final
177 - south	1,000	No. 2 Fuel Oil	Removed	USACE Final
190 - south (T-270)	Fuel Oil	Unknown	Inactive	EBS Survey
239 - north	Unknown	Unknown	Inactive	Located by GPR
273 - northeast (T - 282)	1,000	Fuel Oil	Inactive	Located by GPR
315 - South of Helicopter Pad	3,000	MOGas	Removed	USACE Final
404 - west (back)	6,000	No. 2 Fuel Oil (No. 4)	Active	EBS Survey
404 - east (front)	500	Waste Oil	Inactive	EBS Survey

**Table 1-4. Camp Pedricktown Storage Tank Summary (continued)**

<b>Building Number Location</b>	<b>Capacity (Gallons)</b>	<b>Contents</b>	<b>Status</b>	<b>Comments</b>
413 - east (Pump Island)	3 Tanks Unknown	Gasoline/Diesel	Inactive	EBS Survey
413 - south	Unknown	Kerosene	Inactive	"
422 - north	2,000	No. 2 Fuel Oil	Removed	USACE Final
422 - southwest	5,000	Diesel	Removed	"
422 - southwest	12,000	Diesel	Removed	"
422 - west	275	Waste Oil	Removed	"
432 - northwest	5 Tanks 19,000	Water	Inactive	Potable water tanks
432 - northwest	8,000	No. 2 Fuel Oil	Removed	USACE Final
432 - northwest	7,000	Compressed Air	Inactive	EBS Survey
432 - northwest	2 Tanks 12,000	Water	Inactive	Fire control tanks
506 - west	550	Fuel Oil	Removed	USACE Final
506 - west	275	Fuel Oil	Inactive	AST in basement
T235	1,000	No. 2 Fuel Oil	Inactive	EBS Survey
T272	3 Tanks Unknown	Unknown	Removed	"
T283	1,000	Fuel Oil	Removed	"
T300	550	Fuel Oil	Removed	"
T426	1,000	No. 2 Fuel Oil	Removed	"
T426	275	Fuel Oil	Removed	"

#### **1.3.4 Injection Wells**

There were no reports of injection wells ever being used on site.

#### **1.3.5 Drinking Water Management**

The Penns Grove Water Supply Company supplies all water (potable and for fire suppression) to Camp Pedricktown. The water is stored in a 125,000 gallon water tower (Facility 239, located in the Reserve Enclave) prior to distribution throughout the post.

#### **1.3.6 Stormwater Management**

A stormwater sewer system collects stormwater runoff from throughout the Camp Pedricktown site and discharges the stormwater without treatment into the Delaware River.

### **1.3.7 Sanitary Sewer Wastewater**

Camp Pedricktown is serviced by an on-site Sewage Treatment Plant (STP), which is located at Building 530 in the western corner of the site. All wastewater is directed to and treated at the on-post STP before being discharged to the Delaware River. No sludge was removed from the STP in 1990 and one load, not considered to be hazardous material, was removed in 1991. It is not known if additional loads of sludge have been removed from the STP since 1991. A laboratory service contract was implemented in July 1991 to provide the New Jersey Pollutant Discharge Elimination System (NJPDDES)-required priority pollutant scan results.

A construction project to connect the existing installation sewer system to the Carneys Point Township Municipal Sanitary System and closure of the STP is recommended in the *BRAC 1995 Implementation Plan* (U.S. Army Forces Command 1995).

Prior to the construction of the STP in 1975, the installation was serviced by a series of septic tanks. Historical maps show septic tanks located within the BRAC property at Buildings 300 (two tanks), 440 (one tank), and 380 (two tanks), as well as two large tanks that were assigned facility numbers 527 and 537 (USACE, Philadelphia District 1962; DEH, Fort Dix 1988).

### **1.3.8 Electrical Power Generation**

Electrical power is provided to the installation by the Atlantic Electric Company (U.S. Army Forces Command 1995). The power was then distributed to the on-site facilities, streetlights, and floodlights by underground and overhead lines. It was reported that alternative electric power generation for the NORAD Command Center was produced by means of two diesel generators which were located in Building 422 from 1960 to 1965 (EBS 1997).

### **1.3.9 Pesticides**

Records indicate that pesticides, herbicides, and fungicides were used at Camp Pedricktown. There is no evidence of storage or mixing of pesticides, herbicides, or fungicides at the site. Current pesticide activities are under the supervision of the Fort Dix Directorate of Facilities Engineering. Materials used in this activity are stored at Fort Dix. Additional records were not found documenting past pesticide application practices

### **1.3.10 Asbestos**

Surveys for asbestos containing material (ACM) were conducted in 1988, 1990, 1993, 1998, 1999 and a final Phase II Survey Report for the BRAC properties at Camp Pedricktown was completed in March 2000. In accordance with DOD policy, any asbestos, which represents a health hazard in facilities scheduled for re-use and redevelopment by the LRA, will be removed prior to transfer. Asbestos that does not pose an imminent health threat will remain in place. Any ACM that may be present on the ground (e.g. shingles) may be removed as part of site cleanup activities if that ACM is present in an area that is destined for soil excavation and removal.

### **1.3.11 Lead-Based Paint**

All buildings that were constructed prior to 1978 are assumed to have Lead-Based Paint (LBP). Since none of the buildings will be reused for residential purposes, in accordance with DOD policy, risk assessment, inspection, and abatement of LBP will not be conducted on the buildings prior to transfer.

### **1.3.12 Gas Distribution**

On-site natural gas boilers are used to provide heat to installation facilities. Natural gas is provided by the South Jersey Gas Company (U.S. Army Forces Command 1995).

### **1.3.13 Fire Training**

Fire-training activities are not known to have taken place at Camp Pedricktown. A portion of Building 404 is listed as the former fire department (Delaware Ordnance Depot 1945), but no records were found detailing fire training activities, if any, at Camp Pedricktown.

### **1.3.14 Unexploded Ordnance**

An Unexploded Ordnance (UXO) archive search review was conducted by the USACE in 1996 and 1997 concluded that there were no UXO concerns at Camp Pedricktown (USACE, St. Louis District 1996).

### **1.3.15 Radon**

Radon monitoring was conducted in 1992 at Buildings 171, 173, 184, 273, 380, 404, and 506. None of these buildings were found to have radon levels exceeding EPA action levels for radon emissions (EBS 1997).

### **1.3.16 Radiological Material**

The 1997 Industrial Radiation Historical Data Review Report for Camp Pedricktown found facilities within the BRAC parcel where Nuclear Regulatory Commission (NRC) licensed commodities have been used and/or stored. Thereafter, a field survey was conducted in 1998 by the United States Army Center for Health Promotion and Preventive Medicine (USACHPPM) on buildings 184, 274, 422, 473, 474, 494, 495, 432 and a small field next to building 432. It was concluded that all areas investigated are in compliance with the Nuclear Regulatory Commission and State of New Jersey guidelines for unrestricted use (Industrial Radiation Survey, 1998).

### **1.3.17 Polychlorinated Biphenyls (PCBs)**

PCBs were detected in one soil sample near Building 506 (EI/AA 2000). This area was identified as requiring limited remedial action.

### **1.3.18 Medical Activities**

Currently, no medical activities are conducted in the Camp Pedricktown BRAC property. Former Building T-270 is listed as having been used as an emergency hospital and Building 274 is listed as formerly being used as the post hospital. Building T-270 has been demolished, and Building 274 is presently part of the USARC. Records were not found that describe the nature of the medical activities that may have been conducted in these buildings (EBS 1997).

### **1.3.19 On-Site Housing**

The records indicate that there have been six family housing units (Buildings 120, 177, 179, 276, 277, and 278), seven associated detached garages (Buildings 130, 188, 197, 285, 286, 287, and 288), and three enlisted personnel housing units (Buildings 273, 351, and 371). It was determined during visual inspections of these areas that none of the housing units located on the BRAC parcel are presently occupied (EBS 1997).

### **1.3.20 Off Base Property/Tenants**

There are no off-base properties or tenants associated with the BRAC property at Camp Pedricktown.

### **1.3.21 Tenant Units & Activities**

Finding of Suitability to Lease (FOSL) documents has been approved for Buildings 100,

184, 188, 197, 322, 380, 474, 480, 495, and the paved area near Building 506. Table 1-5 provides a summary of the lease information for the BRAC property at Camp Pedricktown.

**Table 1-5. Summary of Lease Information for BRAC Property at Camp Pedricktown**

<b>Building/ Facility Number</b>	<b>Property Leased to</b>	<b>Tenant</b>	<b>Date Leased Signed</b>	<b>Status of Occupancy</b>	<b>Nature of Business</b>
100	Oldmans Twp. LRA	Letteiri and Associates	11 May 00	Occupied	Mini-mart/bait store
184	Oldmans Twp. LRA	Wistar Equipment	1 March 00	Occupied	Storage, repair, and assemble of non-hazardous materials and equipment
188	Oldmans Twp. LRA	Letteiri and Associates	1 Oct. 99	Occupied	Storage of non-hazardous materials and equipment
197	Oldmans Twp. LRA	Oldmans TwpDPW	1 Oct. 99	Occupied	Store Oldmans Twp. Non- hazardous equipment e.g., snow plow
322	Oldmans Twp. LRA	Letteiri and Associates	1 March 00 Amended 17 Aug 00	Occupied	Office and storage
380/480	Oldmans Twp. LRA	BJB Enterprises	29 Jan. 98	Occupied	Office, warehouse and parking
474	Oldmans Twp. LRA	Pioneer Glass Inc.	13 Sep. 99	Occupied	Storage and assembly specialized window frames
474 – Parking Area	Oldmans Twp. LRA	Pioneer Glass Inc.	3 July 00	Occupied	Vehicle parking
495	Oldmans Twp. LRA	WJV Builders	1 March 00	Occupied	Vehicle storage
PPKL05 <sup>1</sup>	Oldmans Twp. LRA	Wistar Equipment	11 May 00	Occupied	Storage of industrial compressors and generators

**Notes:** 1 = Parking lot area east of Bldg. 506  
LRA = Local Redevelopment Authority  
Twp. = Township  
DPW = Department of Public Works

## **1.4 General Geographic and Environmental Settings**

Camp Pedricktown is located in Oldmans Township, Salem County, New Jersey. The site is approximately 25 miles southwest of Philadelphia. The installation encompasses 85 square acres. The site is located in an area that is bordered by the Delaware River and dredged river materials to the west, wetlands and rural farmlands to the east, dredged river materials to the north, and the DOD Wildlife Management Area and residential area to the south. Route 130 parallels the eastern property boundary of the installation.

### **1.4.1 Demographics**

According to the 1990 census, Salem County, New Jersey had a population of 65,294. Since 1960, the population of the county has increased 11.5 percent. The county is divided into fifteen civil divisions, including one city, three boroughs, and eleven townships. There are approximately 20 people residing within a quarter-mile of Camp Pedricktown; 70 people within a half-mile; 434 people within one mile; 4,508 people within two miles; and 28,374 people within four miles.

In 1993, Camp Pedricktown supported a resident population of 29 people that consisted of military personnel and their families. Currently, no one resides in either the Reserve Enclave or the Camp Pedricktown BRAC property. During two weeks of each year and for two days each month, the facility is heavily populated by military personnel who conduct military exercises in the immediate vicinity (Versar 1993). The average personnel strength during training periods in 1985 was 155 (U.S. Army Reserve Center 1985).

### **1.4.2 Physical Setting**

Oldmans Township is located in the Atlantic Coastal Plain Physiographic Province, which lies southeast of the Fall Line, a demarcation of the transition from the Atlantic Coastal Province to the Piedmont Province (Versar 1993). Camp Pedricktown is located in an area that is bordered by the Delaware River and dredged river materials to the west, wetlands and rural farmlands to the east, dredged river materials to the north, and a DOD Wildlife Management Area and residential area to the south. Route 130 parallels the eastern property boundary of the installation. The nearest heavily populated area, Penn Grove, is located approximately one mile to the south of the site (Versar 1993).

Topographic relief on the order of 10 to 15 feet characterizes the Camp Pedricktown site. Surrounding areas include low-lying marshes, tidal flats, estuary streams, and manmade dikes. The Delaware River is located about 0.5-miles to the west of the site.

### **1.4.3 Climate**

The climate of Salem County is generally typified by mild winters; warm, humid

summers; and moderate precipitation throughout the year. January is generally the coldest month with an average daily minimum temperature of 25.6 degrees Fahrenheit (°F). The period from December through February is usually the coldest part of the year. With an average daily maximum temperature of 87.4°F, July is usually the hottest month of the year. The average date of the last frost is April 23, and the average date of the first frost is October 19. The county receives 37 inches of annual rainfall and 17 inches of annual snowfall. During the growing season, rainfall is not uniformly distributed, and long wet and dry spells can occur. Prevailing winds are from the southwest, except in winter when west to northwest winds are dominant (New Jersey State Climatologist, 2000)

#### **1.4.4 Hydrology**

Surface water features at the Installation and nearby surrounding areas include two unnamed streams or swales along the northern and western site boundaries. The Penns Grove Project Area, which is a manmade lake, lies immediately southwest of the site and the Delaware River is about one-half mile west of the site. Surface water runoff from Camp Pedricktown generally follows site topography, which slopes gently to the north. The drainage swale along the northern boundary of the installation flows to the northwest into the Delaware River from the northeast corner of the site. This swale is intersected at the northwest corner of the site by the west swale, which flows to the northwest from the south corner of the site.

Flood potential in the low elevation areas of the site is high, and it is likely that the area along the Delaware River is located within the 50-year floodplain (EBS 1997).

#### **1.4.5 Geology and Soils**

Three distinct formations ranging in age from the Precambrian to Pleistocene underlie Camp Pedricktown. The deepest and oldest of these formations is the Precambrian Wissahickon bedrock unit, which lies about 310 feet below the site. Unconformably overlying this formation is the Cretaceous age Potomac-Raritan-Magothy Formation. This lies about 27 to 30 feet Below Ground Surface (bgs) at the site. This formation dips to the southeast at approximately 100 feet per mile at the base of the Potomac Group. The Pleistocene age Cape May Formation unconformably overlays the Potomac-Raritan-Magothy Formation. The Cape May Formation at Camp Pedricktown is about 27 to 30 feet thick (Versar 1993).

The Wissahickon Formation is a bedrock-confining layer consisting of late Precambrian age metamorphic schist and gneiss. The Potomac-Raritan-Magothy Formation consists of three separate formations that are combined into one mappable unit because of their lithologic similarities and difficulties in distinguishing each individual formation. Both the Potomac and Raritan Formations are continental in origin, while the Magothy Formation is continental and marine in origin. The Potomac Formation is the oldest of the three, and it consists of interbedded sand, gravely sands, clay, and coarse lignitic

material. The intermediate age Raritan Formation includes sand, gravel, and variegated clay, containing small amounts of lignite and pyrite. The Magothy Formation consists of alternating layers of lignitic and pyritic clay. Coarse sand and fine gravel lenses are also found within this formation. The Cape May Formation consists of medium- to coarse-grained sand with abundant gravel and small amounts of clay. Small quantities of glauconite and possibly limonitic material occur within the Cape May Formation (Versar 1993).

#### 1.4.6 Hydrogeology

One of the most productive aquifer systems in all of New Jersey is found in the Potomac-Raritan-Magothy Formation. At a few places throughout this aquifer system in New Jersey, thin bands of lenticular sand lenses exist at the uppermost portion of the formation where confining clays are absent. This provides a direct hydraulic connection with the overlying Pleistocene deposits of the Cape May Formation (EBS 1997).

Regionally, within the Potomac-Raritan-Magothy Formation, four individual aquifers have been recognized. The first is located between 50 and 120 feet bgs and is between 6 and 43 feet thick. The second is situated between 150 and 250 feet bgs and ranges in thickness from 10 to 52 feet. This second aquifer is the most utilized in the Penns Grove vicinity. Regional interconnections between these two aquifers exist because the confining clays that separate them do not have a large areal extent. The third aquifer within this formation lies between 300 and 390 feet bgs and is 20 to 40 feet thick. The fourth aquifer is from 400 to 500 feet bgs and is about 80 feet thick (EBS 1997).

The Cape May Formation is also a very important aquifer system in the Penns Grove area. Precipitation recharges the Cape May aquifer and can infiltrate to the underlying formations in areas where local confining clays are absent. However, no evidence of this was observed at the Camp Pedricktown site during an expanded site investigation conducted in 1993 (EBS 1997).

The Wissahickon Formation is not considered to be a significant aquifer in Salem County. Movement of water can occur only through joints and fractures within the bedrock. No Salem County water wells are reportedly installed in this formation.

Data for the characterization of the hydrogeology and water quality were obtained from 19 groundwater monitoring wells and three piezometers that were installed on the site in 1993 as part of an expanded site investigation. The hydrogeological characterization indicated a shallow water table with a northwesterly flow direction, with flow velocities reaching as high as 0.71 feet per day. Average hydraulic conductivity at the site has been calculated to be approximately 11.2 feet per day. Transmissivity was calculated to be 392 square feet per day. A hydraulic gradient of 0.0034 to 0.0044 was calculated for the site (AGM 1999).

The present water table elevations at Camp Pedricktown were found to be only two to six

feet bgs. It was concluded that construction by the USACE in the early 1980s of a cut-off wall downgradient of the site appears to have had a significant impact on both groundwater elevation and flowpaths in the immediate vicinity of the installation (EBS 1997).

#### **1.4.7 Sensitive Environments**

An Archeological Survey was completed at Camp Pedricktown and the State of New Jersey concurred that there were no archeological sites present (USACE, Environmental Assessment Final, 1998). The State Historic Preservation Officer (SHPO) has determined that Buildings 422, 432, 452, and 461 are eligible for the National Register of Historic Places. Under an Agreement between the Army and the SHPO, information on these buildings will be recorded, but the buildings will not be preserved.

#### **1.4.8 Threatened and Endangered Species**

No known federally threatened or endangered species have been reported for this facility (U.S. Department of the Interior, Fish and Wildlife Service, 1996).

#### **1.4.9 Wetlands**

The USACE has determined that no wetland delineation will be conducted on the site prior to implementation of the proposed action (Fort Dix Environmental/Natural Resource Division, 1998).

## **SECTION 2.0 INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS**

This section summarizes the current status of environmental restoration projects and the compliance, natural, and cultural resources programs at Camp Pedricktown. It also includes a summary of the community involvement activities to date.

### **2.1 Environmental Program Status**

Fort Dix assumed responsibility for Camp Pedricktown in 1962. The Garrison Commander, Fort Dix, New Jersey is responsible for establishing and maintaining all environmental programs, compliance programs, and remediation efforts. Management of these programs is delegated to the Director of Public Works at Fort Dix and further to the Fort Dix BEC. In July 1995, the BRAC Commission recommended that Camp Pedricktown be closed, except for a Reserve Enclave to serve the Sievers-Sandberg USARC. On September 30, 1997 Camp Pedricktown was closed, except for a 39-acre Reserve Enclave. In order to achieve regulatory closure or no further action standards, the property must undergo restoration activities to make it suitable for transfer. This will be accomplished through the CBP pilot demonstration.

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

Several installation-wide surveys and assessments have been conducted to identify contaminants and contaminant sources at Camp Pedricktown. Moreover, several interim remedial actions have been conducted to remove sources of contamination. (see Table 3-3 for a complete listing of remediation documentation). An EBS was conducted in 1997, as required under CERFA. During 1996 - 1999, additional surveys were conducted, which were directed at identifying and investigating asbestos, UXO, NRC licensed commodities, PCBs, and USTs. The 1991 Preliminary Site Assessment (PSA) included an aerial photograph and regulatory records review, a site walk-through inspection, soil gas surveys, a limited wetlands delineation, and a limited endangered species evaluation. An Expanded Site Investigation was conducted in 1993. And finally an EI/AA report was concluded in February 2000.

#### **2.1.2 Environmental Areas of Concern**

For the purpose of this PMP, the installation has been categorized into three environmental areas of concern (AOC), soil, groundwater, and ACM. In each of the three environmental AOCs, there are several separate sites that require either limited or relatively more extensive remedial actions. There are 15 buildings, structures or former buildings grouped into ten sites within the soil environmental AOC. Soil excavation and off-site disposal has been selected as the preferred soil remedy for all ten sites. Therefore, a Declaration of Environmental Restriction (DER) and long term operation and maintenance of a soil cap will not be required. Within the groundwater AOC, there

are ten buildings and/or structures grouped into six sites. Four of these sites require limited actions, which include natural attenuation and groundwater monitoring. One site requires active groundwater remediation (air sparging). A Classification Exception Area (CEA) will be prepared for the portion of the shallow Cape May formation underlying the Site. The ACM environmental AOC contains five sites that require abatement of ACM. The approximate locations of the six soil, four groundwater, and five ACM sites at Camp Pedricktown are depicted in Figure 2-1.

There is one or more facilities and/or buildings located within each of the six soil and four groundwater sites. Each of the five ACM sites includes only one building or facility per site. Background information on these facilities and/or buildings is provided in Table 2-1.

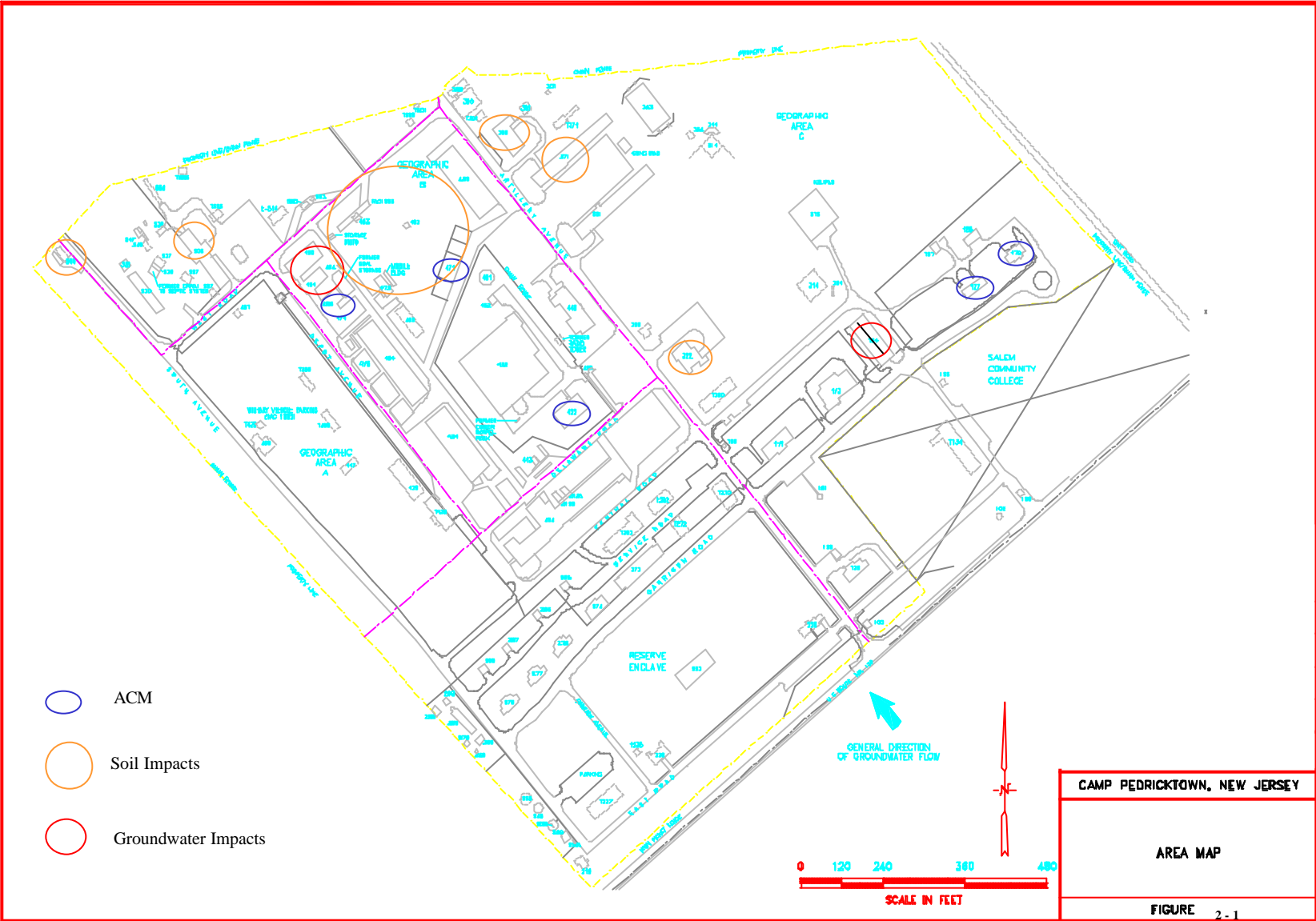
The remedial status and remedial action(s) that are planned for each AOC site are shown in Table 2-2.

### **2.1.3 Groundbreaking Activities on BRAC Property Not Related to the Fixed Price Contract**

Pursuant with GSA Contract Number GS-10T-99-EBD-0005, *CTC* is obligated to obtain regulatory closure or no further action required for the BRAC property at Camp Pedricktown. During conduct of work under the contract, *CTC* is responsible for addressing any previously unknown contamination that may be discovered on the BRAC property. The Army may elect to transfer portions of the BRAC property to the Local Redevelopment Authority prior to *CTC* obtaining regulatory closure or no further action required.

As part of the property transfer process, potential tenants/owners may conduct sub-surface surveys of the BRAC property. To minimize the risk of exposure to previously unknown environmental contamination, all groundbreaking activities (digging, trenching, drilling, etc.) conducted on the BRAC property by other parties not involved with the Fixed Price Contract, must be coordinated with and approved by the Army prior to commencement. It is understood that the Army is obliged to notify all third parties interested in and approved for groundbreaking activities, prior to any field operations, that specific reporting requirements exist in the event previously unknown contamination is encountered. The Army may, at its discretion, oversee the conduct of all onsite groundbreaking activities. If in the event previously unknown contamination (soil and/or groundwater) is encountered on Camp Pedricktown BRAC property, all work will immediately cease and the principle party of discovery will immediately notify the Army of the discovery and provide all applicable information. The Army will determine what actions are necessary to address the potential environmental contamination. This may include having *CTC* further investigate the potential contamination and/or implement a remedy as part of the Fixed Price Contract. No work shall resume until approved by the Army.

Figure 2-1. USARC Camp Pedricktown Site Map



**Table 2-1. Background Information on Areas of Concern**

AOC	Facility/ Building Number	Background Information
Soil	322	Building 322 is Enlisted Open Dining currently used by USARC. Former septic tanks and an active fuel oil UST are located in the immediate area.
	371	The Building 371 area is associated with two #2 fuel oil USTs (one 600-gallon and one 6,000-gallon) both of which were removed in 1996. This area is also associated with three pole-mounted transformers and Former Building T371 (a former truck repair shop).
	380	Various documents and maps refer to Building 380 as a magazine area change house or as an exchange/main retail store. Two of the maps, dating from 1962 and circa 1979, show a grease interceptor on the sanitary sewer line exiting the building. An UST was located along the northwest side of Building 380.
	463, 473, 471,484, 485, 494, 495 & 590	<p>Records indicate that Building 463 was a storehouse and engineer warehouse. A 1972 document indicates it was used to store mobile equipment (tractors, harrows, lime and fertilizer spreaders) and bulk material used by various trades.</p> <p>Building 473 was built in 1937, and the periods and types of use are unknown. Historical maps and records indicate it has been used as a paint shop and for flammable storage. It has also been reported that this building is suspected to have been used for hazardous materials. This area is also associated with three ASTs located along the northeast side of Building 464.</p> <p>See Groundwater section of this table for background information on Buildings 471, 484, 485, 494, 495 &amp; Structure 590(wash rack).</p>
	506	Building 506 has been used as a battery charging shop. Documents indicate that this building was formerly used as a post engineer maintenance shop, post stables, and roads and utilities warehouse.
	569	Former Building 569 was reportedly used as "Time Alleys A & B, Storage and Engineering Storage." Prior to the construction of the STP, the grounds in this area were the discharge point for post sewage, and old blueprints show a leach field in this general location

**Table 2-1. Background Information on Areas of Concern (continued)**

AOC	Facility/ Building Number	Background Information
Groundwater	484, 485, 494 & 495	<p>Building 484 is presently listed as a general-purpose storage building and has been used as a generator and battery shed. Hazardous materials and petroleum products may have been stored in this building in conjunction with its former use. Records were not found confirming hazardous materials storage, but a 1964 document identifies this building as an oil storage shed.</p> <p>Building 485 is presently listed as a heating plant building and has been reportedly used in the past for the storage and service of equipment, spare parts, and appliances. A 1988 map shows that the concrete pad in front of Building 485 was used for coal storage.</p> <p>Building 494 is presently listed as an engineering/housing maintenance shop. It was previously used as an electrical and plumbing shop and for the storage and service of equipment, spare parts, and appliances. The 1991 PSA report notes that drums containing solvents or oil were stored outdoors on a concrete pad adjoining the northeast corner of Building 494. An interview revealed that a scrap metal salvage yard was located in the area northeast of Building 494 and north of Building 473. Materials disposed have included tube testers from the Signal Corps.</p> <p>Both Buildings 485 and 494 were reportedly used for ordnance disassembly between 1918 and 1958.</p> <p>Building 495 is presently listed as an engineering/housing maintenance shop and was previously used as a machine shop and a chemical detergent laundry unit. A figure from the Fort Dix real estate files identifies this building as a chemical processing plant with a laboratory. Hazardous materials were observed inside this building during the EBS visual inspection. As reported in the EBS Report, 1996, soil removed from a hydraulic fluid spill in the vehicle parking area was stored in this building since March 1995.</p>
	471 & 590	<p>Facility 471 is the former coal storage bin area and Structure 482 was an old incinerator that is now demolished. The bins have been used to store drums containing hazardous wastes, old office furniture, scrap metal and lumber.</p> <p>Structure 590 (FAC1000) is a former wash rack. This facility has been used to wash heavy equipment.</p>

**Table 2-1. Background Information on Areas of Concern (continued)**

AOC	Facility/ Building Number	Background Information
Groundwater	184	Building 184 was formerly a paint shop and had an active fuel oil tank located in the basement. A reported release occurred from this tank in 1984 and was cleaned up. Building 184 was also used to store unknown quantities of hazardous substances.
	413, 422 & 569	<p>A vehicle fueling pump island was located to the southeast of Building 413. Three USTs are also located in this area, all three of which have been abandoned. Their capacities, ages, and types of construction are unknown, and they are suspected to have stored gasoline and/or diesel fuel.</p> <p>Building 422 is the former power plant building for the Nike Command Center. There were four USTs associated with this building.</p> <p>Former Building 569 was reportedly used as “Time Alleys A &amp; B, Storage and Engineering Storage.” Prior to the construction of the STP, the grounds in this area were the discharge point for post sewage, and old blueprints show a leach field in this general location</p>
ACM	177, 179, 422, 471, 494	The Phase II Asbestos Survey Report indicates that abatement is needed for ACM found in these five facilities.

**Table 2-2. Status of Environmental Areas of Concern\***

AOC	Description	Environmental Investigation/Phases to Date						Findings and Remedial Actions to Date	Future Action or Final Determination
		PA/SI	RI/FS	RD	RA (C)	RA (O)	LTM		
Ground water	Limited Action Areas: Buildings 184, 413, 484, 485, 494, & 495	X	X	X	X	O	O	Low levels of PCE were detected in groundwater. Limited remedial action is required.	Natural attenuation and monitoring.
	More extensive Action Areas: Former Vehicle Wash Rack, Metal Dump Area, Facility 471	X	X	X	X	O	O	PCE was detected in groundwater. Remedial action is required.	Engineering and institutional controls, such as in-well air sparging and Classification Exception Area respectively.
Soil	Limited Action Areas: Buildings: 371, 322, 380, 461 Water Tank, 506 & 569 Former Incinerator/Leach Field	X	X	X	X	X	NA	Arsenic, lead, PAH, dieldrin and aroclor-1260 (a PCB) were detected in localized areas. Due to the localized nature of the soil impacts, limited remedial action is required.	Excavation and off site disposal of impacted soil.
	More extensive Action Areas: Facilities: 471 Coal Bins, 484, 485, 494, 495, 473 & 463 Vehicle Wash Rack (590) Scrap Metal Dump	X	X	X	X	X	NA	Arsenic, antimony, cadmium, lead, and several PAHs were detected in this area. Remedial action is required.	

**Table 2-2. Status of Environmental Areas of Concern\* (continued)**

AOC	Description	Environmental Investigation/Phases to Date						Findings and Remedial Actions to Date	Future Action or Final Determination
		PA/SI	RI/FS	RD	RA (C)	RA (O)	LTM		
ACM	Buildings: 177, 179, 422, 471 & 494	X	X	X	X	NA	NA	ACM requiring abatement or potentially requiring abatement was identified in these facilities	The abatement of ACM will involve the removal and disposal of ACM from existing structures

\* Definitions of abbreviations and actions.

LTM Long Term Monitoring

P Pending

O Operational

PA/SI Preliminary Assessment/Site Investigation

RI/FS Remedial Investigation/Feasibility Study

RA (C) Remedial Action (Construction)

RA (O) Remedial Action (Operations)

RD Remedial Design

X Completed

## **2.2 Status of Natural and Cultural Resource Programs**

This section describes the current status of the natural and cultural resource programs established at Camp Pedricktown, including rare, threatened and endangered species.

### **2.2.1 Vegetation**

Camp Pedricktown is an area classified as urban/disturbed. The habitat of the native species has been disturbed by the construction of buildings and roads, as well as the landscaping and mowing of grassy areas.

### **2.2.2 Wildlife**

Given the developed nature of Camp Pedricktown, almost no wildlife is found on the installation except for species common to urban and residential areas. Some of these include squirrels and transient birds. White-tailed deer and migratory waterfowl have been observed in habitats in the area around the installation (USACE, Environmental Assessment Final, 1998).

### **2.2.3 Wetlands**

A review of the 1995 U.S. Fish and Wildlife National Wetland Inventory (NWI) maps for Marcus Hook and Penns Grove quadrangles (includes Camp Pedricktown) indicated that no wetlands were present at Camp Pedricktown (EA 1995). However, the scale of the maps were such that it would preclude the identification of small wetland areas. A small wet area was observed in the northwest corner of the site behind the sewage treatment plant. Another potential wetland is located to the south of the sewage treatment plant along the fence that encloses the sewage treatment facility (USACE, Environmental Assessment Final, 1998).

The USACE has determined that no wetland delineation will be conducted on the site prior to implementation of the proposed action (Fort Dix Environmental/Natural Resource Division, 1998).

### **2.2.4 Designated Preservation Areas**

There are no specifically designated preservation areas at Camp Pedricktown.

### 2.2.5 Rare, Threatened and Endangered Species

Except for the occasional transient peregrine falcon or bald eagle, no federally endangered, threatened, or proposed species are known to occur on or in the vicinity of Camp Pedricktown (U.S. Department of the Interior, Fish and Wildlife Service, 1996). Appropriate measures will be taken to protect all rare, threatened, and endangered species that might be discovered at Camp Pedricktown.

### 2.2.6 Species of Concern

No known federally threatened or endangered species have been reported for this facility (U.S. Department of the Interior, Fish and Wildlife Service, 1996). Appropriate measures will be taken to protect all species of concern that might be discovered at Camp Pedricktown.

### 2.2.7 Cultural Resources

An archeological survey was completed at Camp Pedricktown and the State of New Jersey concurred that there were no archeological sites present. The State Historic Preservation Officer (SHPO) has determined that Buildings 422, 432, 452, and 461 are eligible for the National Register of Historic Places. Under an Agreement between the Army and the SHPO, information on these buildings will be recorded, but the buildings will not be preserved.

## 2.3 Status of Community Involvement

Community relations activities to date have included the following activities:

- Involvement of the Camp Pedricktown RAB in reviewing reports and in public RAB meetings with the BCT to discuss areas of concern, remediation actions, and other issues related to the environmental restoration and the subsequent transfer and reuse of the property.
- Placement of all documents concerning the investigation and turnover of Camp Pedricktown in public information repositories located at the BEC office in Fort Dix, New Jersey, and Oldmans Township, New Jersey, as noted below:
  - ▶ U.S. Army Garrison, Fort Dix  
Regional Directorate of Public Works  
Bldg. 5317  
Snyder Lane Fort Dix, New Jersey  
08640-5501  
POC: Fort Dix BEC
  - ▶ Oldmans Township Municipal Building  
West Mill Street  
Pedricktown, New Jersey 08067  
POC: Susan Miller/Town Clerk

- Establishment and maintenance of an official Administrative Record.
- Presentations on the approved Project Management Plan and Site Management Plan were given to the RAB by *CTC* and *AG&M* on 13 June 2000.
- Milestone presentations for the initiation and completion of asbestos abatement were approved by the Army on 1 August 2000.
- A milestone presentation on the RAW was approved by the U.S. Army on 1 August 2000. *CTC* and *AG&M* provided this milestone presentation to the RAB at the 17 October 2000 meeting.
- A presentation for the initiation of the Pilot Groundwater Treatment System was approved by the Army on 8 September. *CTC* and *AG&M* provided this milestone presentation to the RAB at the 17 October 2000 meeting.
- Presentations on the Proposed Plan and Groundwater Pilot System Three-Month Progress report were approved by the Army on 18 January 2001. *CTC* and *AG&M* provided these milestone presentations to the RAB at the 16 January 2001 meeting.
- Proposed Plan Public Meeting was conducted on 25 January 2001. The Army, with assistance from *CTC* and *AGM*, held this meeting to present the preferred remedial alternatives that it is proposing for environmental restoration of the BRAC property at Camp Pedricktown and to solicit comments from the Public on the Proposed Plan.
- Presentation on the installation and start up of the Full-scale Groundwater Remedy System was approved by the Army on 1 July 2001. *CTC* and *AG&M* presented this milestone presentation to the RAB at the August 2001 meeting.
- Presentations on the Awarding of the Soil Excavation Contract and Completion of the Soil Remediation Activities was approved by the Army on 7 December 2001. *CTC* and *AG&M* will present these milestone presentations to the RAB at the next scheduled meeting.

## **SECTION 3.0 INSTALLATION-WIDE STRATEGY FOR ENVIRONMENTAL RESTORATION**

This section discusses and summarizes the installation-wide environmental restoration and compliance-related strategy for Camp Pedricktown. Closure or no further action standards will be based on regulatory acceptance of interim remedial actions or risk-based closure for the identified areas and may include health based standards, environmental standards, water quality objectives, other applicable standards, or any combination thereof.

Restoration efforts will utilize an approach that is based on the CERCLA process. This process outlines the environmental restoration methodology and cleanup goals (as augmented by state and local standards), the review and oversight responsibilities of the regulatory agencies, and the investigation and restoration schedules. Project activity steps, as outlined in Table 3-1, will clearly delineate the appropriate clean-up standards, how they will be achieved, and how they will be documented and verified. The Fort Dix BEC and AGM, with input and support of the rest of the Project Team, will negotiate closure requirements and no further action standards. Final approval of the site closure standards and criteria will be obtained from the U. S. Army FORSCOM BEM and the Fort Dix BEC prior to any project implementation. The following sections describe the various elements of the environmental restoration strategy for Camp Pedricktown.

With the exception of the Wastewater Treatment Plant, all compliance-related issues will be addressed by the CPB.

### **3.1 Area Designation and Strategy**

The environmental areas of concern have been grouped together to better facilitate an understanding of the areas to be investigated and remediated, as listed in Table 2-2 and depicted in Figure 2-1. The current status of the sites comprising each AOC are shown in Table 3-2. Tables 2-2 and 3-2 will be updated on a regular basis to indicate current status and will be reflected in future revisions of the PMP document.

**Table 3-1. Camp Pedricktown CBP Pilot Demonstration Activity Milestones (M) and Deliverables (D)**

Step	Deliverable	SOW Para.	Revised Schedule	Original Schedule <sup>1</sup>	Acceptance Criteria
1	Project Management Plan (D)	2.2.1	04/18/00	04/21/00	Describes how the technical, cost and schedule aspects of the project will be managed
2	Project Repository/Administrative Records (D)	2.2.2	Continuous	Continuous	Maintain a repository for all project-related information to ensure adequate documentation for project reviews/justification, and to provide a clear record of the CBP methodology
3	Quarterly Status Reports(D)	2.2.1	Quarterly	Quarterly	Provides proper documentation of technical progress to date, depicting upcoming work and documenting any technical issues
4	Milestone Presentations (M) *	2.2.3	As follows	As follows	Each presentation provides in-depth analysis and lessons-learned for that activity and presents the proposed approaches for completion of the next component activity. Each milestone presentation will be approved by the Army (accepted/approved by FORSCOM BRAC and the BEC). (This acceptance criteria applies to all milestone presentations.)
4A	Approved PMP/SMP (D) (1)		05/18/00	05/22/00	
4B	Approved Remedial Action Work Plan (D) (2)		06/22/00	06/22/00	
4C	Initiate Asbestos Work (D) (3)		06/19/00	09/22/00	
4D	Complete Asbestos Work (D) (4)		08/07/00	12/22/00	

**Table 3-1. CBP Pilot Demonstration Activity Milestones (M) and Deliverables (D) (continued)**

Step	Deliverable	SOW Para.	Revised Schedule	Original Schedule <sup>1</sup>	Acceptance Criteria
4E	Perform Pilot Test (D) (5)		09/07/00	09/07/00	
4F	Pre-Remedial Characterization (D) (6)		01/25/01	01/25/01	
4G	Install Full-Scale Groundwater Remedy (D) (7)		07/02/01	11/18/01	
4H	Initiate Soil Excavation Activity (M) (8)		09/20/01		
4I	Receipt of EPA Certification of GW Remedy (M) (10)		04/27/02	01/14/02	
4J	Install Full-Scale Soil Remedy (D) (9)		02/02/02	02/02/02	
4K	Receipt of EPA Certification of Soil Remedy (D) (11)		05/02/02	05/02/02	
4L	Approved Remedial Action Report(D) (12)		01/22/05	01/22/05	
4M	Regulatory Closure of Site (D) (13)		10/22/05	10/22/05	
5	PMP Revisions (D)	2.2.1	As follows	As follows	
5A	Revision 1		06/19/00	06/22/00	
5B	Revision 2		07/21/00	07/22/00	
5C	Revision 3		07/19/00	09/22/00	
5D	Revision 4		09/07/00	10/22/00	
5E	Revision 5		10/09/00	01/22/01	
5F	Revision 6		02/26/01	03/22/01	
5G	Revision 7		08/01/01	09/22/01	
5H	Revision 8		10/19/01	11/22/01	
5I	Revision 9		02/14/02	02/22/02	

**Table 3-1. CBP Pilot Demonstration Activity Milestones (M) and Deliverables (D) (continued)**

<b>Step</b>	<b>Deliverable</b>	<b>SOW Para.</b>	<b>Revised Schedule</b>	<b>Original Schedule <sup>1</sup></b>	<b>Acceptance Criteria</b>
5J	Revision 10		05/27/02	05/22/02	
5K	Revision 11		04/10/02	08/22/02	
5L	Revision 12		02/03/05	02/22/05	
5M	Revision 13		11/21/05	11/21/05	
6	Approved Remediation Program (General) (M)	2.2.4	As Follows	As Follows	Delineates appropriate site management approaches to facilitate closure and disposal of installation.
6A	Site Management Plan		04/18/00	04/21/00	Submittal of plan, which delineates appropriate site management approaches to facilitate closure and disposal of the installation.
6B	Remedial Action Workplan (D)		05/22/00	05/21/00	Submittal of RAW to regulatory agency.
6C	Abate/Remove/Dispose of Asbestos (D)		07/16/00	11/19/00	Approval of final summary report by Army.
6C1	Initiation of asbestos Remediation activity (D)		05/17/00	08/22/00	Execution of contract with asbestos removal contractor.
6C2	Complete asbestos Remediation activity (D)		07/16/00	11/19/00	Submittal of summary report to Army.
6D	Perform Pilot Test (D)		08/07/00	08/07/00	Turning on pilot system and first day of operation.
6D1	Continued Operation of Pilot System (D)		11/17/00	11/05/00	Submittal of report of regulatory agency describing first three months of operation.
6D2	Continued Operation of Pilot System (D)		02/15/01	02/03/01	Submittal of report to regulatory agency describing second three months of operations.
6E	Perform Pre-Remedial Characterization (D)		12/15/00	12/25/00	Submittal of Proposed Plan

**Table 3-1. CBP Pilot Demonstration Activity Milestones (M) and Deliverables (D) (continued)**

<b>Step</b>	<b>Deliverable</b>	<b>SOW Para.</b>	<b>Revised Schedule</b>	<b>Original Schedule</b> <sup>1</sup>	<b>Acceptance Criteria</b>
6F	Design of Full-Scale Remedy – GW (D)		03/06/01	03/06/01	Submittal of RAW Addendum for GW to regulatory agency.
6G	Design of Full-Scale Remedy – Soil (D)		02/19/01	02/19/01	Submittal of RAW Addendum for Soil to regulatory agency.
6H	Installation of Full-Scale GW Remedy (D)		06/01/01	10/18/01	Turning on Full-Scale system.
6H1	Initiate Soil Excavation Activity (D)		08/20/01		Execution of contract with soil excavation contractor.
6I	EPA Certification of Full-Scale GW Remedy (D)		03/27/02	12/14/02	Receipt of EPA certification.
6J	Completion of Full-Scale Soil Remedy (D)		01/02/02	01/02/02	Fulfilled all requirements in RAWA for soil.
6J1	EPA Certification of Full-Scale Soil Remedy (D)		03/29/02	03/29/02	Receipt of EPA certification.
6K1	GW Remediation System O&M – Year 1 (D)		06/04/02	10/18/02	Submittal of Quarterly Summary Report to regulatory agency describing fourth operation quarter.
6K2	GW Remediation System O&M – Year 2 (D)		06/05/03	10/18/03	Submittal of Quarterly Summary Report to regulatory agency describing eighth operation quarter.
6L1-7	GW Monitoring – Years 1 through 7 (D)		06/03/02- 06/02/08	10/19/01- 10/19/08	Submittal of Annual Groundwater monitoring reports of regulatory agency.
6N	Remedial Action Report (D)		12/02/04	12/21/04	Submittal of Remedial Action Report to Army.
6O	Separate Remedial Action Report for area bound by Artillery Avenue, Building 371 and the northern property boundary of Camp Pedricktown	2.2.4.5	435		Submittal of separate Remedial Action Report to Army
7	Complete Site Remediation Activities (M)	2.2.5	04/26/05	04/26/05	Approval of the Remedial Action Plan

**Table 3-1. CBP Pilot Demonstration Activity Milestones (M) and Deliverables (D) (continued)**

Step	Deliverable	SOW Para.	Revised Schedule	Original Schedule <sup>1</sup>	Acceptance Criteria
8	Regulatory Closure of the Site (D)	2.2.5	09/23/05	09/22/05	Regulatory closure of the site is achieved upon receipt of a closure letter from the regulatory agencies stating that site remediation has met all of the closure requirements and that regulatory closure of the site or no further action standards and criteria have been achieved. Closure letters will also include the asbestos, non-CERCLA, CERCLA and any other sites found during remediation activities.
9	Public Involvement Activities (M)	2.2.7	As Needed	As Needed	Submittal of briefings, presentations, fact sheets, articles to news media, etc., to BEC

D = Deliverable

M = Milestone

1 = Original Schedule date as of Revision Zero of the Camp Pedricktown PMP.

\* = Scheduled dates for milestone presentations subject to change at the Army's discretion. *CTC* will submit presentations to the Army for approval as per the original schedule.

\*\* = With selection of off-site disposal, a DER is no longer necessary. Correction and substitution of items relating to the DER will be addressed in Revision 7.

**Table 3-2. Status of Camp Pedricktown Sites**

AOC	Site	Status			
		Investigation*	Environmental Risk**	Remediation Approach	Status
Groundwater	Limited Action Areas: Buildings 184, 413, 422, 484, 485, 494, & 495	X	W	Natural Attenuation and Monitoring	O
Groundwater	More extensive Action Areas: Former Vehicle Wash Rack, Metal Dump Area, Facility 471	X	W	In-situ Air Sparging followed by Natural Attenuation and Monitoring	O
Soil	Limited Action Areas: Buildings: 371, 322, 380, 461 (Water Tank), 506 & 569 Former Incinerator/ Leach Field	X	N	Excavation and off-site disposal	X
	More extensive Action Areas: Facilities: 471 Coal Bins, 484, 485, 494, 495, 473 & 463 Vehicle Wash Rack (590) Scrap Metal Dump	X	N	Excavation and off-site disposal	X
ACM	Buildings: 177, 179, 422, 471, 494	X	N	Removal and Disposal	X

Notes:

* A – Additional	** E – Ecological	W – Water Quality
P – Planned	H – Human Health	U/TBD – Unknown/To Be Determined
O – Operational	N – None	
X – Completed		

Sites that have received regulatory closure or no further action status are listed in Table 3-3.

**Table 3-3. Camp Pedricktown Closed or No Further Action Sites**

Site	Date of Closure/NFA
Fuel oil spill at Building 184	1984
Perimeter area and all fencelines	1995
UST removal for BRAC Parcel	1997
Radiological Materials	1998
PCB Survey	2000
Asbestos in Buildings 177, 179, 422, 471 & 494	2000

### 3.2 Remediation Documents

Table 3-4 summarizes environmental studies that have been completed, are ongoing, or are planned for Camp Pedricktown.

**Table 3-4. Camp Pedricktown Remediation Documents**

<b>Document</b>	<b>Most Recent Date of Document Published</b>
Results of Inventory of NORAD Center Philadelphia	1964 Final
Asbestos Materials Assessment at Sievers-Sandberg USARC	1988 Final
Project Report on the Inspections, On-Site Supervision and Air Monitoring for the Asbestos Abatement Project Conducted Between July 13 and August 2, 1989 at the Sievers-Sandberg USARC	1989 Final
Preliminary Site Assessment of the Pedricktown Support Facility, Sievers-Sandberg USARC	1991 Final
Radon Monitoring Report	1992 Final
*Final Expanded Site Inspec. Report, Pedricktown Support Facility.	1993 Final
Survey and Analysis Report	1993 Final
Report on Comprehensive Asbestos Survey of 17 Buildings for Sievers-Sandberg USARC, Pedricktown Support Facility, Salem County, New Jersey	1993 Final
*Camp Kilmer and Camp Pedricktown; UST Removals and PCB Surveys; Work Plan, Final Document	1996 Final
*EBS Report, Camp Pedricktown, New Jersey	1997 Final
*Archives Search Report, Conclusions and Recommendations, Camp Pedricktown (Unexploded Ordnance)	1997 Final
*Underground Storage Tank Closure Report	1997 Final
*Industrial Radiation Survey No. 27-MH-4940-R098 Facility Close-out and Termination Survey, Camp Pedricktown, New Jersey	1998 Final
Industrial Radiation Historical Data Review	1998 Final
*Environmental Assessment for the BRAC Disposal and Reuse of Camp Pedricktown, New Jersey	1998 Final
*Environmental Investigation/Alternatives Analysis	2000 Final
Asbestos Abatement Final Report, Camp Pedricktown, New Jersey	2000 Final
RAW for Pilot Demonstration of the CBP at Camp Pedricktown	2000 Final
RAW Addendum for Groundwater and Soil, Camp Pedricktown	2001 Final
Proposed Plan for the Camp Pedricktown BRAC Property	2001 Final

\* Document is listed in Section 6, Primary References

### **3.3 Remedy Selection Approach**

The overall CBP methodology consists of performing the necessary investigation, remediation and regulatory activities to achieve environmental regulatory closure or concurrence for no further action. A key step towards achieving regulatory closure or concurrence for no further action was completed when the Remedial Action Workplan (RAW) was submitted to the NJDEP on schedule on 22 May 2000 and AG&M received the NJDEP's conditional approval letter on 21 June 2000.

The RAW presents the conceptual approach for remediating groundwater at the site and specifically the plan for conducting an interim remedial action to address groundwater. This RAW was followed by two addenda. The first addendum addresses the full-scale groundwater remedy and the second addendum addresses the soil remedy. The RAW addendum (RAWA) for groundwater presents the results of the pilot-scale groundwater remedial system and the design for the full-scale groundwater remedial system. The NJDEP approved the RAWA for groundwater in a letter dated 23 May 2001. The full-scale groundwater remedy was installed in accordance with the RAWA for groundwater and began operating on 1 June 2001.

The RAWA for soil was prepared concurrently with the RAWA for groundwater and presents the proposed plan for remediating soils at the site. The plans call for excavating the contaminated soil and disposing of it at an approved off-site landfill. The NJDEP approved the RAWA for soil in a letter dated 23 May 2001. Excavation activities were completed in November 2001.

For more information on the RAWA for soil, the RAWA for groundwater, start up of the full-scale groundwater remedy, and soil remediation activities, see Appendix D.

### **3.4 Compliance Program Strategy**

This section describes the strategy for addressing compliance-related environmental issues for Camp Pedricktown during the execution of the CBP.

#### **3.4.1 Underground Storage Tanks (USTs)**

All known USTs used to store hazardous substances or petroleum products have been removed or properly abandoned-in-place and their environmental impacts have been documented. Several other unregulated abandoned USTs (e.g., near Buildings 413 and 432) remain in place on the BRAC property. Refer to Section 1.3.3.

#### **3.4.2 Hazardous Materials/Waste Management**

Any hazardous wastes generated during site investigation and remediation activities, including investigation-derived wastes, will be managed in accordance with applicable state, Federal, and Army regulations.

### **3.4.3 Solid Waste Management**

Solid wastes generated during site investigation and remediation activities, including investigation-derived wastes, will be managed in accordance with applicable state, Federal, and Army regulations.

### **3.4.4 Polychlorinated Biphenyls (PCBs)**

Site transformers at Camp Pedricktown have been thoroughly inspected and no further action is being recommended for all but one transformer. This inactive transformer is located on a concrete pad northwest of Building 506. Aroclor-1260 (a PCB) was detected in a surface soil sample that was collected adjacent to the pad. There was no evidence found at any of the other transformer locations to suspect leaking.

### **3.4.5 Asbestos**

Based on the results of the Phase II Asbestos Survey Report for the BRAC properties (August 1999), asbestos abatement is appropriate for Facilities 120, 130, 177, 179, 422, 471, 494, and 506. It has since been reported that abatement of ACM in Facilities 120, 130 and 506 is complete. Abatement may also be needed for floor tile in Facilities 100, 474, and 494, depending upon the floor tile condition.

The asbestos abatement contract was awarded to AEI2, L.L.C. of Berlin, New Jersey, on 15 May 2000 and work began on site on 26 June 2000. Site work was completed on 5 July 2000 pending the final air monitoring results that were received by AG&M on 6 July. A more complete description of this activity can be found in Appendix D.

### **3.4.6 RCRA Facilities**

Camp Pedricktown is designated as a "small quantity generator" (QG), according to New Jersey Code 7:26, and a large quantity generator, as defined by RCRA (VISTA Information Solutions, Inc. 1995).

### **3.4.7 Pesticides**

Currently, the application of pesticides is done under the supervision of the Fort Dix Directorate of Facilities Engineering. Materials used in this activity are stored at Fort Dix (DEH, Fort Dix 1978, 1985). The perimeter area and fencelines associated with the

USARC were assessed in 1994 to determine if waste oils had been mixed with herbicides and applied. The results of this assessment indicated that no environmental concerns were identified (U.S. Army Reserve Center 1995; EA Engineering 1994).

### **3.4.8 Lead-Based Paint (LBP)**

All buildings that were constructed prior 1970 are assumed to have LBP. Since none of these buildings are scheduled to be reused for residential habitation, in accordance with DOD policy LBP inspection, risk assessment, and abatement prior to transfer is not required. Therefore, LBP is not included within the scope of this project. Furthermore, according to the *BRAC 1995 Implementation Plan*, LBP survey and removal actions were conducted in former installation residences in fiscal year 1995 (U.S. Army Forces Command 1995). Residences are located within the Reserve Enclave.

### **3.4.9 Unexploded Ordnance**

Unexploded ordnance is not included within the scope of this project.

### **3.4.10 NEPA**

The U.S. Army has conducted and completed an Environmental Assessment (EA) of Camp Pedricktown to assess the environmental impact of the proposed disposal of property to the local community (EI/AA 2000). Analysis contained in the Environmental Assessment determined that the proposed action would not result in any significant environmental or socioeconomic effects. A Finding of No Significant Impact is appropriate and an Environmental Impact Statement is not required (EA Final 1998).

### **3.4.11 New Jersey Administrative Code 7:26E**

Closure of Camp Pedricktown is a voluntary action and must meet the environmental requirements set forth by the State of New Jersey. The New Jersey Department of Environmental Protection (NJDEP) in conjunction with the U. S. Environmental Protection Agency, have agreed to act on the behalf of the State of New Jersey to approve the environmental investigation and restoration activities at Camp Pedricktown. The New Jersey Administrative Code 7:26E (NJAC) requires that any state or local agency acting in such a capacity must demonstrate compliance with the NJAC process. For this project, the NJDEP will be the lead agency.

## SECTION 4.0 ENVIRONMENTAL RESTORATION PROGRAM

This section presents the schedule for the Camp Pedricktown restoration program. This schedule represents the current best estimate for the planning and execution of the work necessary to restore the environment at Camp Pedricktown to achieve regulatory closure or no further action standards for the site.

### 4.1 Meeting Schedules

CTC will prepare and submit quarterly project status reports that document technical progress to date, depict upcoming work, and describe any technical issues. These quarterly project status reports will be provided to the U.S. Army BEC, FORSCOM BEM, and the Information Technology Manager (ITM). Information on specific task activities, duration, and start/end dates are presented in Table 4-1. The project schedules are included in Appendix A.

**Table 4-1. Estimated Project Activities, Duration, and Start/End Dates**

Task No.	Task Name	Duration (Days)	Start Date	End Date
<b>1</b>	<b>Project Management</b>	4474	22-Feb-00	22-May-12
1.1	PMP	40	22-Feb-00	18-Apr-00
1.2	Project Repository	4384	22-May-00	22-May-12
1.3	Quarterly Reports	4384	22-May-00	22-May-12
1.3.1	Report 1	1	22-May-00	22-May-00
1.3.2	Report 2	1	22-Aug-00	22-Aug-00
1.3.3	Report 3	1	22-Nov-00	22-Nov-00
1.3.4	Report 4	1	22-Feb-01	22-Feb-01
1.3.5	Report 5	1	22-May-01	22-May-01
1.3.6	Report 6	1	22-Aug-01	22-Aug-01
1.3.7	Report 7	1	22-Nov-01	22-Nov-01
1.3.8	Report 8	1	22-Feb-02	22-Feb-02
1.3.9	Report 9	1	22-May-02	22-May-02
1.3.10	Report 10	1	22-Aug-02	22-Aug-02
1.3.11	Report 11	1	22-Nov-02	22-Nov-02
1.3.12	Report 12	1	22-Feb-03	22-Feb-03
1.3.13	Report 13	1	22-May-03	22-May-03
1.3.14	Report 14	1	22-Aug-03	22-Aug-03
1.3.15	Report 15	1	22-Nov-03	22-Nov-03
1.3.16	Report 16	1	22-Feb-04	22-Feb-04

**Table 4-1. Estimated Project Activities, Duration, and Start/End Dates (continued)**

<b>Task No.</b>	<b>Task Name</b>	<b>Duration (Days)</b>	<b>Start Date</b>	<b>End Date</b>
1.3.17	Report 17	1	22-May-04	22-May-04
1.3.18	Report 18	1	22-Aug-04	22-Aug-04
1.3.19	Report 19	1	22-Nov-04	22-Nov-04
1.3.20	Report 20	1	22-Feb-05	22-Feb-05
1.3.21	Report 21	1	22-May-05	22-May-05
1.3.22	Report 22	1	22-Aug-05	22-Aug-05
1.3.23	Report 23	1	22-Nov-05	22-Nov-05
1.3.24	Report 24	1	22-Feb-06	22-Feb-06
1.3.25	Report 25	1	22-May-06	22-May-06
1.3.26	Report 26	1	22-Aug-06	22-Aug-06
1.3.27	Report 27	1	22-Nov-06	22-Nov-06
1.3.28	Report 28	1	22-Feb-07	22-Feb-07
1.3.29	Report 29	1	22-May-07	22-May-07
1.3.30	Report 30	1	22-Aug-07	22-Aug-07
1.3.31	Report 31	1	22-Nov-07	22-Nov-07
1.3.32	Report 32	1	22-Feb-08	22-Feb-08
1.3.33	Report 33	1	22-May-08	22-May-08
1.3.34	Report 34	1	22-Aug-08	22-Aug-08
1.3.35	Report 35	1	22-Nov-08	22-Nov-08
1.4	Milestone Presentations*	1980	22-May-00	22-Oct-05
1.4.1	PMP and Site Mgmt Plan	1	18-May-00	18-May-00
1.4.2	Remedial Action Workplan	1	22-Jun-00	22-Jun-00
1.4.3	Initiate Asbestos Work	1	19-Jun-00	19-Jun-00
1.4.4	Complete Asbestos Work	1	07-Aug-00	07-Aug-00
1.4.5	Pilot Test	1	07-Sep-00	07-Sep-00
1.4.6	Pre-remedial Characterization	1	25-Jan-01	25-Jan-01
1.4.7	Full Scale GW Remedy	1	2-Jul-01	2-Jul-01
1.4.8	Award Contract for Soil Excavation	1	20-Sep-01	20-Sep-01
1.4.9	EPA Certification of GW Remedy	1	29-Apr-02	29-Apr-02
1.4.10	Full Scale Soil Remedy	1	11-Nov-01	11-Nov-01
1.4.11	EPA Certification of Soil Remedy	1	15-Feb-02	15-Feb-02
1.4.12	Remedial Action Report	1	3-Jan-05	3-Jan-05
1.4.13	Regulatory Closure of Site	1	24-Oct-05	24-Oct-05
1.5	PMP Revisions	1979	19-Jun-00	23-Nov-05
1.5.1	Revision 1	1	19-Jun-00	19-Jun-00
1.5.2	Revision 2	1	12-Jul-00	12-Jul-00
1.5.3	Revision 3	1	19-Jul-00	19-Jul-00
1.5.4	Revision 4	1	7-Sep-00	7-Sep-00
1.5.5	Revision 5	1	9-Oct-00	9-Oct-00
1.5.6	Revision 6	1	26-Feb-01	26-Feb-01

**Table 4-1. Estimated Project Activities, Duration, and Start/End Dates (continued)**

<b>Task No.</b>	<b>Task Name</b>	<b>Duration (Days)</b>	<b>Start Date</b>	<b>End Date</b>
1.5.7	Revision 7	1	1-Aug-01	1-Aug-01
1.5.8	Revision 8	1	27-Dec-01	27-Dec-01
1.5.9	Revision 9	1	27-Dec-01	27-Dec-01
1.5.10	Revision 10	1	27-May-02	27-May-02
1.5.11	Revision 11	1	29-May-02	29-May-02
1.5.12	Revision 12	1	3-Feb-05	3-Feb-05
1.5.13	Revision 13	1	23-Nov-05	23-Nov-05
<b>2</b>	<b>Site Assessment</b>	308	22-Feb-00	16-Jan-01
2.1	Pre Remedial Characterization	252	22-Feb-00	30-Oct-00
2.2	Perform Pilot Test	168	22-Feb-00	07-Aug-00
<b>3</b>	<b>Site Management</b>	1765	22-Feb-00	2-Dec-04
3.1	Site Management Plan	40	22-Feb-00	18-Apr-00
3.2	Prepare Remedial Action Report	1746	22-Feb-00	2-Dec-04
<b>4</b>	<b>Regulatory Concurrence and Compliance</b>	840	22-Feb-00	10-Jun-02
4.1	EPA Certification of GW Sys	1	27-Mar-02	27-Mar-02
4.2	EPA Certification of Soil Sys	1	15-Jan-02	15-Jan-02
<b>5</b>	<b>Implementation</b>	4400	22-Feb-00	08-Mar-12
5.1	Design Full Scale GW Sys	77	31-Oct-00	6-Mar-01
5.2	Design Soil Remedy	40	26-Dec-00	19-Feb-01
5.3	Award Contract for Soil Excavation	517	22-Feb-00	20-Aug-01
5.4	Public Involvement	4384	22-Feb-00	22-Feb-12
5.5	Remedial Action Workplan	90	22-Feb-00	22-May-00
5.6	First 3 mos. CO of Pilot Sys	90	08-Aug-00	17-Nov-00
5.7	Second 3 mos. CO of Pilot Sys	90	18-Nov-00	15-Feb-01
5.8	Install Full Scale GW Sys	135	8-May-01	1-Jun-01
5.9	Install Full Scale Soil Sys	160	20-Aug-01	15-Oct-01
5.10	Year 1 Operation and Maintenance ( GW O&M)	365	4-Jun-01	4-Jun-02
5.11	Year 2 GW O&M	365	5-Jun-02	5-Jun-03
5.12	Year 1 Groundwater System Monitoring and Reporting (GW M&R)	365	1-Jun-01	3-Jun-02
5.13	Year 2 GW M&R	365	4-Jun-02	2-Jun-03
5.14	Year 3 GW M&R	365	3-Jun-03	1-Jun-04
5.15	Year 4 GW M&R	365	2-Jun-04	1-Jun-05
5.16	Year 5 GW M&R	365	2-Jun -05	1-Jun-06
5.17	Year 6 GW M&R	365	2-Jun -06	1-Jun-07
5.18	Year 7 GW M&R	365	2-Jun -07	2-Jun-08
5.19	Initiation of Asbestos Abatement	1	17-May-00	17-May-00

**Table 4-1. Estimated Project Activities, Duration, and Start/End Dates (continued)**

<b>Task No.</b>	<b>Task Name</b>	<b>Duration (Days)</b>	<b>Start Date</b>	<b>End Date</b>
5.20	Completion of Asbestos Abatement	1	6-Aug-01	6-Aug-01
5.21	Complete Site Remediation	1	26-Apr-05	26-Apr-05
5.22	Regulatory Closure of Site	1	23-Sep-05	23-Sep-05

\* = Scheduled dates for milestone presentations subject to change at the Army's discretion. *CTC* will submit presentations to the Army for approval as per the original schedule.

#### 4.2 BRAC Cleanup Team and Clean Base Program Project Team

CTC is executing Task Order ABH219844 entitled “Pilot Demonstration of the Clean Base Program at Camp Pedricktown,” under the General Services Administration Contract Number GS-10T-99-EBD-0005. This is a unique project in the area of environmental restoration since the approach and objective of the CBP is the guaranteed remediation of the site for a fixed price that will ensure regulatory environmental closure. The CBP methodology incorporates many of the BRAC program activities to ensure that regulatory environmental closure of the site is achieved, while ensuring that BRAC Office site remediation and restoration requirements are met as well. Proper execution of this pilot demonstration requires input and coordination from members of the BRAC Cleanup Team (BCT) and the CBP Project Team. Table 4-2 lists team members and project function, while Appendix C provides a detailed description of their duties and responsibilities. The New Jersey Department of Environmental Protection is the lead regulatory agency for the BCT.

**Table 4-2. BRAC Cleanup Team and CBP Project Team Members**

<b>Name and Contact Information</b>	<b>Telephone/E-Mail</b>	<b>Project function</b>
<b>BRAC Cleanup Team</b>		
Richard Sample Regional Department of Public Works ATTN: AFRC-FA-PWN Building 5317, Snyder Lane Fort Dix, NJ 08640-5510	609-562-3050 (Voice) 609-562-5345 (Fax) richard.sample@dix.army.mil	BRAC Environmental Coordinator
Greg Zalaskus New Jersey Department of Environmental Protection Bureau of Case Management 401 East State Street, CN 028 Trenton, NJ 08625-0028	609-984-2065 (Voice) 609-633-1439 (Fax) gzalaskus@dep.state.nj.us	Remedial Project Manager
Carla Struble U.S. EPA 290 Broadway 18 <sup>th</sup> Floor, E17 New York, NY 10007-1866	212-637-4322 (Voice) 212-637-4360 (Fax) demurley.john@epa.gov	Remedial Project Manager

**Table 4-2. BRAC Cleanup Team and CBP Project Team Members (Continued)**

Name and Contact Information	Telephone/E-Mail	Project function
<b>BRAC Project Team</b>		
Mary Morrissey General Services Administration Northwest/Arctic Region Federal Technology Service, Region 10 4040 Wheaton Way, Suite 111 Bremerton, WA 98310	360-475-6822 (Voice) 360-373-0980 (Fax) mary.morrissey@gsa.gov	Information Technology Manager
A. (Russ) Roberts Base Realignment and Closure Office Department of the Army Headquarters, Forces Command Ft. McPherson, GA 30330	404-464-5524 (Voice) 404-464-7040 (Fax) robertsa@forscom.army.mil	Chief, Base Realignment and Closure Office
Victor Bonilla Base Realignment and Closure Office Department of the Army Headquarters, Forces Command Ft. McPherson, GA 30330	404-464-6346 (Voice) 404-464-7040 (Fax) bonillav@forscom.army.mil	BRAC Environmental Manager
Paul Fluck Universe Technologies, Inc. Attn: AFRC-FA-PWN 5317 Snyder Lane Fort Dix, NJ 08640-5501	609-562-2222 (Voice) 609-562-5345 (Fax) paul.fluck@dix.army.mil	Technical Manager/Quality Assurance

**Table 4-2. BRAC Cleanup Team and CBP Project Team Members (Continued)**

Name and Contact Information	Telephone/E-Mail	Project function
<b>BRAC Project Team</b>		
Richard D. Pirrotta, Director Environmental Technologies Concurrent Technologies Corporation 100 CTC Drive Johnstown, PA 15904-1935	814-269-2810 (Voice) 814-269-6487 (Fax) pirrotta@CTC.com	Senior Management Oversight
David R. James Principal Technical Staff Concurrent Technologies Corporation 100 CTC Drive Johnstown, PA 15904-1935	814-269-6455 (Voice) 814-269-6445 (Fax) james@CTC.com	Project Manager For CTC
Peter N. Milionis Principal Hydrogeologist ARCADIS Geraghty & Miller 3000 Cabot Boulevard West Langhorne, PA 19047	215-750-8276 (Voice) 215-752-6879 (Fax) pmilioni@gmgw.com	Project Manger for AGM

## **SECTION 5.0 TECHNICAL AND OTHER ISSUES TO BE RESOLVED**

This section summarizes unresolved technical and other issues associated with the environmental restoration program at Camp Pedricktown. There are no outstanding or unresolved issues.

Issues which are actually being worked on and which involve no disagreement among the BCT members are not categorized as unresolved issues.

### **5.1 Cleanup Criteria and Remediation Standards**

The NJDEP cleanup standards will be used to determine the need for remediation. In establishing their cleanup standards, the NJDEP uses a one in one million excess cancer risk level as well as other factors such as naturally occurring background concentrations.

## SECTION 6.0 PRIMARY REFERENCES

1. Woodward-Clyde Federal Services, March 1997 (final), "U.S. Army Base Realignment and Closure 95 Program, Environmental Baseline Survey Report, Camp Pedricktown, New Jersey."
2. USACE, August 1997 (final), "Camp Pedricktown Underground Storage Tank Closure Report, Final," prepared by ICF Kaiser Engineers for the U.S. Army Corps of Engineers, Baltimore District.
3. US Army Center for Health Promotion and Preventive Medicine, Sep 1998 (Final), "Industrial Radiation Survey No. 27-MH-4940-R-98 Facility Close-out and Termination Survey, Camp Pedricktown," prepared by the USACHPM for DOA Engineering & Environmental Division.
4. Versar, Inc., 1993 (final), "Final Expanded Site Inspection Report, Pedricktown Support Facility." Langhorne, Pennsylvania.
5. USACE, December 1998 (final), "Environmental Assessment for the BRAC 95 Disposal and Reuse of Camp Pedricktown, New Jersey" prepared by USACE Mobile District for the US Army Forces Command.
6. USACE, 1996 (final), "Camp Kilmer and Camp Pedricktown; UST Removals and PCB Surveys; Work Plan, Final Document," Delivery Order No. 0006, Total Environmental Restoration Contract DACA31-95-D-0083.
7. IT Corporation, February 2000 (final), "Camp Pedricktown Environmental Investigation/Alternatives Analysis."
8. New Jersey State Climatologist, March 2000 "Climate Overview" Rutgers University Web Page.
9. USACE, May 1997, "Archives Search Report Conclusions and Recommendations, Camp Pedricktown" prepared by USACE St. Louis District for the US DOD BRAC program.

**APPENDIX A**  
**PROJECT SCHEDULES**

**APPENDIX B:**  
**CAMP PEDRICKTOWN SITE MANAGEMENT PLAN**

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## **Executive Summary**

This Site Management Plan (SMP) for Camp Pedricktown is being prepared under the Clean Base Pilot Program. The Clean Base Program is a methodology that expedites the BRAC process and realizes a reduced timeframe and overall cost savings, while achieving a similar level of protection from future environmental liabilities. The SMP will delineate appropriate site management approaches to facilitate closure of the installation. The SMP provides a summary of the Base Reuse Plan (July 30, 1997, revised March 2, 1999) developed by the Local Redevelopment Authority, identification of redevelopment plans and the needs of the potential redevelopment plans, and an outline of the site management prescriptive remedial approaches. The SMP also provides a summary of the environmental risk management that will be realized through the implementation of the management approaches.

The site management approaches that have been developed to address groundwater, soil and asbestos at Camp Pedricktown include both engineering and institutional controls. The engineering controls to address groundwater will include physical removal via air sparging technology. Institutional controls for groundwater will include both ongoing groundwater monitoring and the establishment of a Classification Exception Area. The engineering controls used to address soil will involve consolidation of soils in a centralized location on the BRAC property, followed by capping. Institutional controls for soil will include institution of a Declaration of Environmental Restriction (i.e., deed notice) in the capped area.

Site management activities, to be consistent with the potential redevelopment plans for Camp Pedricktown, will require compliance with the following five requirements:

- Access to the infrastructure,
- Compliance with State and Federal clean-up guidelines,
- Protection of human health and the environment (based on exposure pathways consistent with planned future use),
- Short- and long-term effectiveness and permanence, and
- Community acceptance.

The integrated remedial approaches proposed as part of the Site Management Plan are technically feasible and will address these specific requirements of the Base Reuse Plan.

## **Introduction**

This Site Management Plan (SMP) for Camp Pedricktown was prepared by ARCADIS Geraghty & Miller for the U.S. Army under Contract with Concurrent Technologies Corporation (CTC). CTC is executing Task Order ABH219844 entitled "Pilot Demonstration of the Clean Base Program at Camp Pedricktown," under the General Services Administration Contract Number GS-10T-99-EBD-0005.

This SMP is a planning document that presents the strategy for environmental restoration of soil and groundwater and the site management approaches to facilitate closure of Camp Pedricktown. The SMP is based on the best information currently available to the U.S. Army including the Base Reuse Plan developed by the Local Redevelopment Authority and appropriate site management prescriptive remedial approaches for groundwater and soil. In addition to groundwater soil, the remediation program will involve addressing asbestos-containing materials (ACM) that have been identified as requiring abatement.

## **Summary of Base Reuse Plan**

A Base Reuse Plan (Plan) was prepared by the Camp Pedricktown Local Redevelopment Authority in July 1997 and was subsequently revised on March 2, 1999. The Plan describes the redevelopment plan of the Local Redevelopment Authority for Camp Pedricktown in Oldmans Township, Salem County, New Jersey. The Plan is a conceptual land-use plan to direct reuse of the former military installation, specifically, the surplus property consisting of 46 acres of land and 29 buildings.

The Local Redevelopment Authority completed an outreach program by publishing public notices and convening two public hearings regarding the redevelopment and reuse of the BRAC excess base property. Based on the responses to the public notices and the public hearings conducted on April 10 and April 26, 1996, the following conditions were identified:

- No Notices of Interest (NOI) were received from homeless assistance providers,
- No legally binding agreements have been signed between the Local Redevelopment Authority and homeless assistance providers,
- No Notice of Interest was submitted at the April 1996 public hearings,
- No on-base property is being transferred to a homeless provider, and
- Oldmans Township is a community located within a jurisdiction that has no known Consolidation Plan.

**Goals and Objectives**

The goals of the Local Redevelopment Authority are to gain private-sector interest, promote business investment, and expand the tax base. The ultimate objective of the Local Redevelopment Authority is to promote the best use of the facilities in the near-term as well as in the long-term future.

**Conveyance Methods**

The Local Redevelopment Authority and Oldmans Township have determined to request a no-cost Economic Development Conveyance (EDC). The zoning of the BRAC property has been changed from Exempt to Commercial-Industrial (CI). Some considerations for redevelopment of the property include industrial, commercial, office (government or private), and warehousing. Therefore, site management approaches will need to be consistent with the planned future use of the site as CI property.

**Infrastructure**

The following is a summary of the principal infrastructure system components and the status of these components:

Table 1A. Infrastructure and Responsibility  
Camp Pedricktown

<b>Infrastructure Component</b>	<b>Responsibility</b>
Potable Water System	Local water company
Electric Power System	Connectiv Power or Atlantic Electric
Natural Gas Facilities	South Jersey Gas Company
Sanitary Sewer System	Value questionable; a cooperative effort has been made by the LRA, the U.S. Army and the Carneys Point Sewer Authority (CPSA) to connect the facility to the CPSA Sewer System

A major focus of the SMP is to ensure that the prescriptive remedial approaches to address soil and groundwater (described in Section 4) will facilitate the redevelopment plans for the site.

**Potential Redevelopment Plans**

Based on the revised zoning (from Exempt to CI), the potential redevelopment plans for the former military installation will conceptually include:

- Industrial,
- Commercial,
- Office (government or private), and
- Warehousing.

The short-term approach for redevelopment includes interim leases and remodeling of buildings. The long-term approach is to seek opportunities through development and realty groups.

The primary requirements of the redevelopment plans include:

- Access to the infrastructure,
- Compliance with State and Federal clean-up guidelines,
- Protection of human health and the environment (based on exposure pathways consistent with planned future use),
- Short- and long-term effectiveness and permanence, and
- Community acceptance.

Therefore, the prescriptive remedial approaches developed for site management must not only be technically feasible from a scientific and engineering perspective, but must also be consistent with these requirements.

## **Outline of Site Management Prescriptive Remedial Approaches**

Site management prescriptive remedial approaches have been established to achieve the following: select remedial alternatives that will protect human health and the environment, consider the applicable regulatory requirements, provide a practical and effective remediation, and consider the needs of potential redevelopment plans. Site management approaches are developed based on media affected by contamination (i.e., soil and groundwater), the extent of contamination, and the site geologic and hydrogeologic conditions. The specific site management prescriptive remedial approaches for the Camp Pedricktown excess property are outlined in the following sections.

### **Summary of February 2000 Environmental Investigation/Alternatives Analysis (EI/AA)**

From 1997 through 1999, an Environmental Investigation (EI) of BRAC parcels was performed by IT Corporation on behalf of the U.S. Army Corps of Engineers to investigate the areas of environmental concern identified in the Environmental Baseline Survey (EBS) Report (Woodward-Clyde, 1997). Subsequent to completing the EI, an Alternatives Analysis (AA) was performed by IT Corporation to determine the best course of remedial action for the soil and groundwater issues at the BRAC excess area.

## **Groundwater**

Based on the results of the EI/AA, three of the areas investigated require limited action for groundwater contamination. The areas that require limited action with respect to groundwater are:

- The Building 184 area,
- The Buildings 413 and 422 area, and
- The Buildings 484, 485, 494, and 495 area.

Tetrachloroethene (PCE) was detected in monitoring wells in these three areas at concentrations of 1 ug/L (in well MW8-001 near Building 184), 4 ug/L (in well MW16-003 near the Buildings 413 and 422 area), and 8 ug/L (in well CPMW07S near Building 495). Natural attenuation and monitoring were proposed to address the groundwater in these three areas (EI/AA February 2000).

A larger groundwater area of concern is the Former Vehicle Washrack/Scrap Metal Dump area. This relatively larger area includes the smaller areas of the Former Vehicle Wash Rack/Scrap Metal Dump area, the Facility 471 (former coal bins) area, and the Area North of Building 432. Extensive groundwater investigation efforts have been completed in this area of the site. PCE was detected above the applicable Groundwater Quality Standards (GWQS) throughout this area, with the highest concentration of PCE detected in a monitoring well being 480 ug/L in well CPMW02S (February 1999 sampling event).

The larger groundwater area of concern requires more extensive remedial action because of the presence of PCE in groundwater near the property boundary (NJDEP communication 1999). The groundwater containing PCE in this area appears to be migrating off-site of the BRAC property into an unnamed tributary of the Delaware River. Therefore, a more active approach to groundwater remediation is appropriate.

## **Soil**

Four of the areas investigated require limited action for impacts to soil. The areas that require limited action with respect to soil are:

- the Building 371 area,
- the Building 322 area,
- the Former Incinerator/Leaching Pond area, and
- the Building 569 area.

The larger soil area of concern is the Area North of Facility 471 Coal Bins. This area includes the following smaller areas of concern: the Facility 471 Coal Bins and Former Incinerator; the Buildings 484, 485, 494, and 495 area; the Vehicle Washrack/Scrap Metal Dump area; the Building 473 area; and the Building 463 area. This relatively larger area requires more extensive remedial action for impacts to soil.

### Asbestos

A Phase I survey of the BRAC buildings was performed in 1998, and included a records review and visual inspection. The Phase I survey was conducted to identify the extent and condition of known or suspected ACM in BRAC facilities.

In accordance with DOD policy, asbestos that represents a health hazard in facilities scheduled for reuse and redevelopment by the Local Redevelopment Authority will be removed prior to transfer. However, asbestos that does not pose an imminent health threat will remain in place.

In March and April 1999, Phase II sampling of the suspected ACM was conducted at the site. A summary of the Phase II findings is presented in Table 1. In summary, ACM that were damaged, accessible, and friable, and require abatement were identified in the following five buildings: Facilities 177, 179, 422, 471, and 494.

Abatement of the ACM associated with these buildings will be conducted as part of the remediation program. The ACM abatement will be conducted in accordance with the findings of the Phase II asbestos survey report.

The abatement of ACM will involve the removal and disposal of ACM from existing structures and will be completed in a relatively short time frame compared to the groundwater and soil remediation. Therefore, the section regarding prescriptive remedial approaches (below) will be limited to the groundwater and soil remediation that is planned for the site.

**Table 1. Asbestos-Containing Materials Requiring Abatement  
Camp Pedricktown, New Jersey**

Facility No.	Location	Material	Estimated Max Quantity	Condition**
177	Basement crawl space	3" Diameter pipe insulation	Approx. 400 L.F.	Fair/DAF
179	Basement crawlspace	4" air cell pipe insulation	208 L.F.	Poor/DAF
		2" air cell pipe insulation	120 L.F.	Fair/DAF
		3" air cell pipe insulation	10 L.F.	Fair/DAF
		ACM debris on dirt floor	875 S.F.	Poor/DAF

**Table 1. Asbestos-Containing Materials Requiring Abatement  
Camp Pedricktown, New Jersey (continued)**

Facility No.	Location	Material	Estimated Max Quantity	Condition**
422	Power Plant	3" lag pipe run insulation	620 L.F.	Good-Poor/DAF
		3" lag pipe fitting insulation	156 L.F.	Good-Poor/DAF
		4" lag pipe run insulation	225 L.F.	Good-Poor/DAF
		4" lag pipe fitting insulation	156 L.F.	Good-Poor/DAF
	Boiler Room	8" boiler exhaust stack pipe insulation	18 L.F.	Fair-Poor/DAF
		Water tank insulation	60 S.F.	Fair-Poor/DAF
471	Exterior	Transite panel debris	100 S.F.	Poor
494	Exterior (running to adjacent building)	Damaged pipe insulation under metal jacket	<100 L.F.	Good-Poor/DAF (one extremely damaged section)

\*\* DAF = Damaged, accessible, and friable

### **Prescriptive Remedial Approaches to Facilitate Redevelopment Plans**

The presence of environmental impacts at the site will necessitate the use of prescriptive remedial approaches in order to allow for successful and beneficial redevelopment on the BRAC excess property. The remedial approaches selected must be technically practical for the media affected and types of impacts, but also be suitable in terms of the redevelopment plans. Based on these requirements, ARCADIS Geraghty & Miller has developed an integrated remedial approach to address the soil and groundwater contamination. The following sections outline the proposed remedial approaches along with technical rationale for the selection of each, and how each will affect the planned redevelopment.

#### **Remedial Approach for Groundwater**

Based on our evaluation of the site conditions, the nature and extent of the volatile organic compound (VOC) impacts, and the redevelopment plans, the following, integrated remedial approach has been selected to address groundwater:

- Physical Treatment of VOCs via In-Well or Conventional Air Sparging, and
- Institutional Controls including Groundwater Monitoring and a Classification Exception Area (CEA).

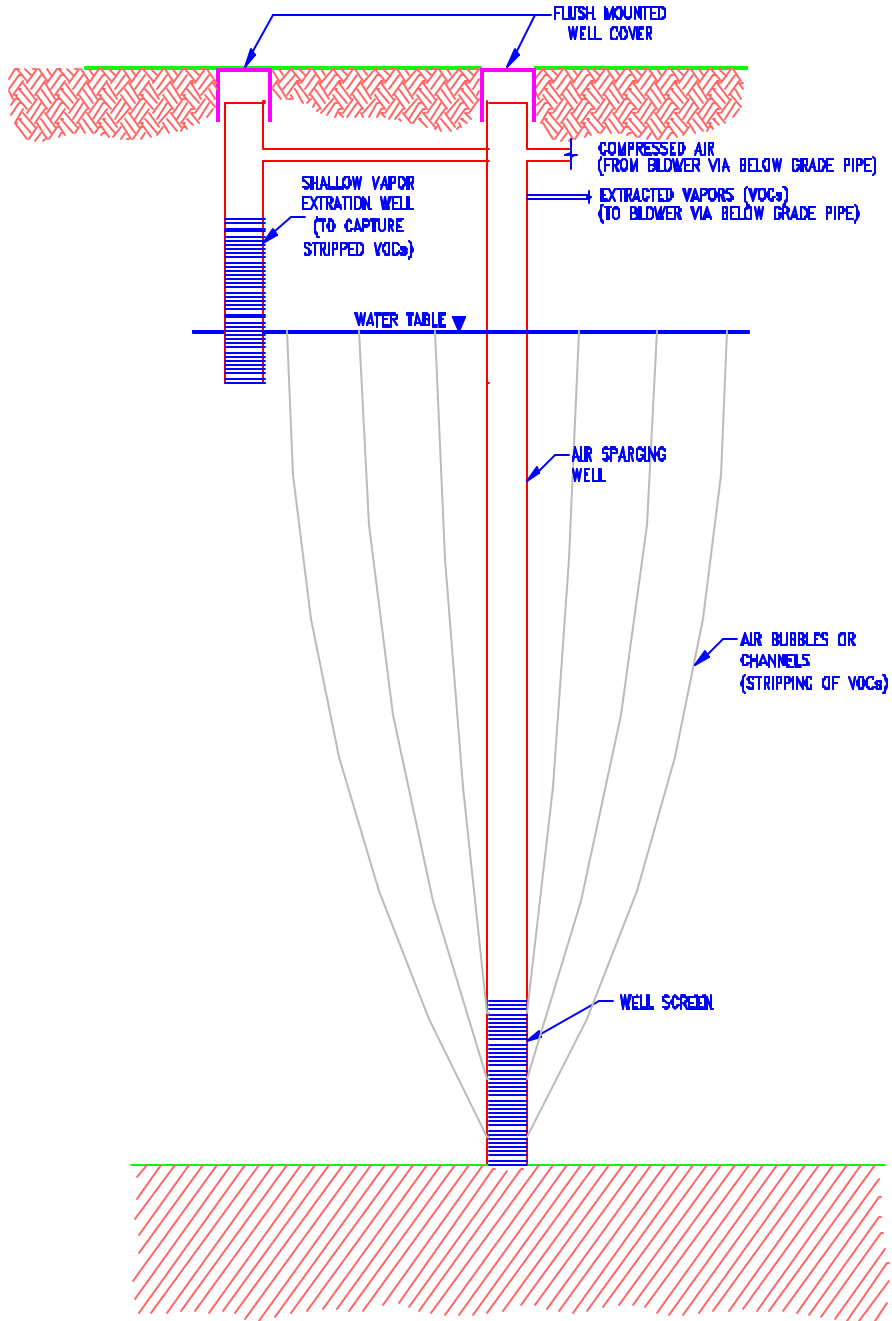
The details regarding these remedial approaches and their potential application at the site are outlined below.

## **Air Sparging**

Air sparging is a physical treatment remedial technique in which subsurface mass transfer conditions are enhanced to provide mass removal of contaminants , in this case PCE, from groundwater. Air sparging is widely used in similar applications.

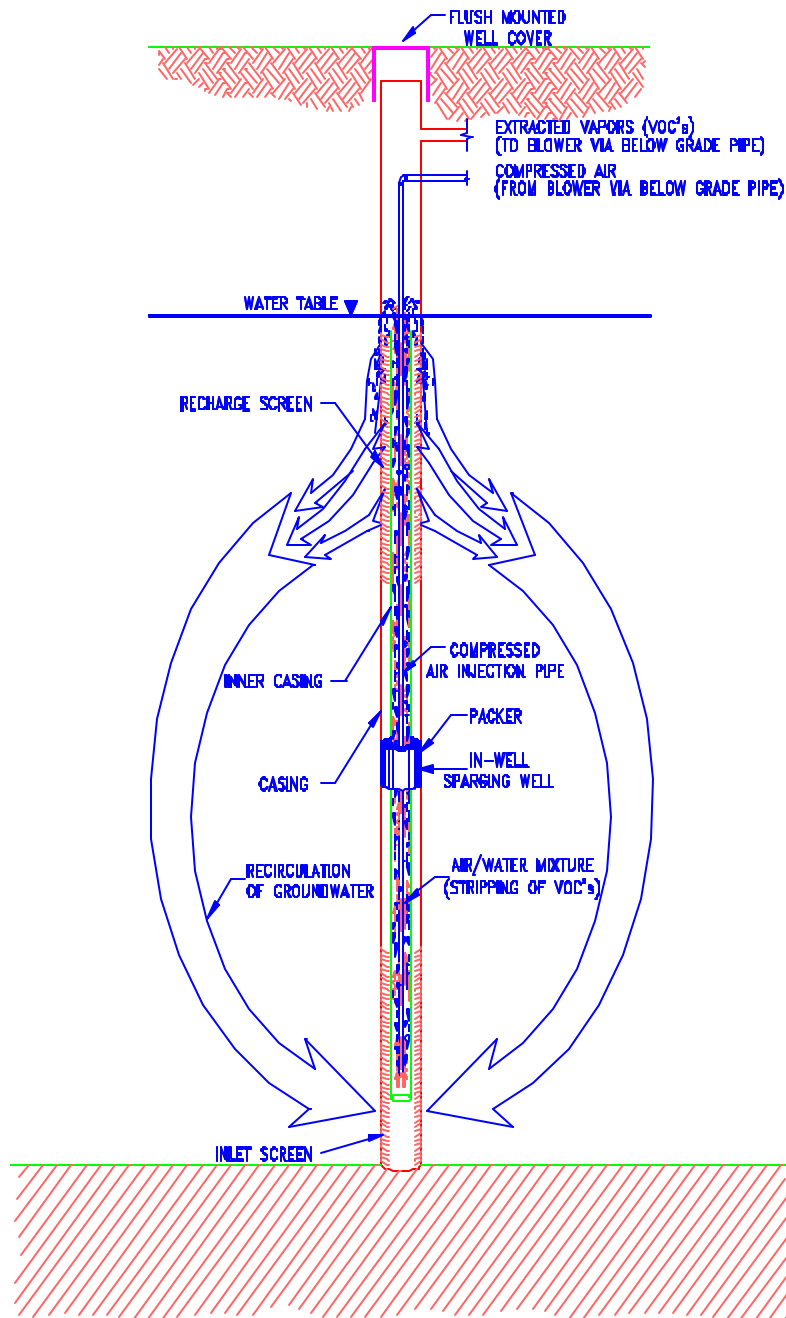
Air sparging is an in-situ remedial technique in which clean air is injected under pressure below the water table in the zone in which the impacts are present. When the air is injected into the subsurface, air bubbles and/or air channels are formed in the groundwater as the air travels upward towards the water table surface. As the air travels upward, VOCs dissolved in groundwater can partition from the dissolved phase to the vapor phase in a process that is similar to air stripping. Then as the VOC-laden air reaches the water table surface, soil vapor extraction (SVE) techniques can be used to capture the VOCs. The captured off-gas from the SVE system is then treated to remove or destroy the VOCs, as necessary. Figure 1 depicts a typical air sparging well.

Figure 1 Schematic of conventional sparging well



A modification to the conventional method of air sparging is in-well sparging. In-well sparging is a technique that utilizes a double cased well including an inner casing and an outer casing. The outer casing is screened in both the impacted zone and at the top of the water table. Compressed air is injected through a drop tube to the base of the well and the compressed air pushes the water within the inner casing upward and overflow the top of the casing. Due to the mixing of air and the impacted water, as the air/water mixture rises inside the inner casing, VOCs can be stripped and captured for treatment. Simultaneous with the injection of air into the bottom of the inner casing, a vacuum is applied to the wellhead and extracted air is directed through vapor phase treatment prior to discharge to the atmosphere. Treated, clean water which spills over the top of the inner casing is re-injected back into the formation via the top outer screen without actually leaving the subsurface. Figure 2 shows a typical in-well sparging well set-up.

Figure 2 Schematic of typical in-well sparging well



Application of both conventional air sparging and/or in-well sparging techniques are best-suited to high permeable saturated soils with a saturated thickness (greater than 10 feet). In addition, sparging techniques are generally limited to use in groundwater systems in which the constituents of concern are VOCs (to allow for stripping from groundwater) that under most conditions readily partition from the dissolved to the vapor phase. These techniques appear well suited for use at the site.

The selection of using either conventional or in-well air sparging has not yet been fully determined for the site. Conventional air sparging tends to be best suited in areas in which the predominant amount of the VOC impacts are in the shallow portion of the water bearing zone. Conversely, in-well sparging tends to perform better when the higher concentrations of VOCs are in the deeper portion of the water bearing zone. At this time we are still assessing the distribution of the VOCs throughout the Former Vehicle Wash Rack/Scrap Metal Dump Area, as well as other engineering and design factors. The final decision on application of either conventional or in-well sparging (or a combination of both) will be presented in the remedial action workplan (RAW) to be submitted to the NJDEP.

### **Institutional Controls (Groundwater Monitoring & Classification Exception Area)**

Institutional controls are a general class of remedial techniques that do not provide any mass removal of the constituents present, but instead are used to limit access (and therefore exposures) to impacted groundwater. The two types of institutional controls proposed for use at the site are groundwater monitoring and establishment of a CEA, as described below.

As part of the site management approaches, groundwater monitoring will be performed periodically. This groundwater monitoring will serve two purposes. First it will allow for evaluation of the effectiveness of the active portions of the groundwater remedial approach (described above). Second, it will allow for an ongoing determination of any changes in the nature and extent of VOCs in groundwater at the site. This is particularly important if the nature and/or extent of VOCs in groundwater change in a manner such that human health or the environment becomes threatened; if this occurs the SMP will be modified to address these concerns.

In addition to groundwater monitoring, a CEA will be established for the groundwater impacts at the site. Establishment of a CEA is required by the NJDEP for any location in which the concentrations of constituents in groundwater exceed the GWQS that apply to the classification area in which the site is located. Therefore, a CEA will be required as part of the overall planned remedial approach.

The site-wide CEA will serve as an institutional control that will extend horizontally to the BRAC property boundary and vertically to the underlying clay layer (approximately 25 to 30 feet

bgs). The CEA will be established for PCE and any biodegradation daughter products, and the duration of the CEA will be based on the effectiveness of the active groundwater remediation system.

### **Remedial Approach for Soils**

Based on the evaluation of the site conditions, the nature and extent of the soil impacts, and the redevelopment plans, the following, integrated remedial approach has been selected to address soil:

- Engineering Controls via Soil Consolidation and Capping, and
- Institutional Controls including Declaration of Environmental Restriction (DER).

The details regarding these remedial approaches and their potential application at the site are outlined below.

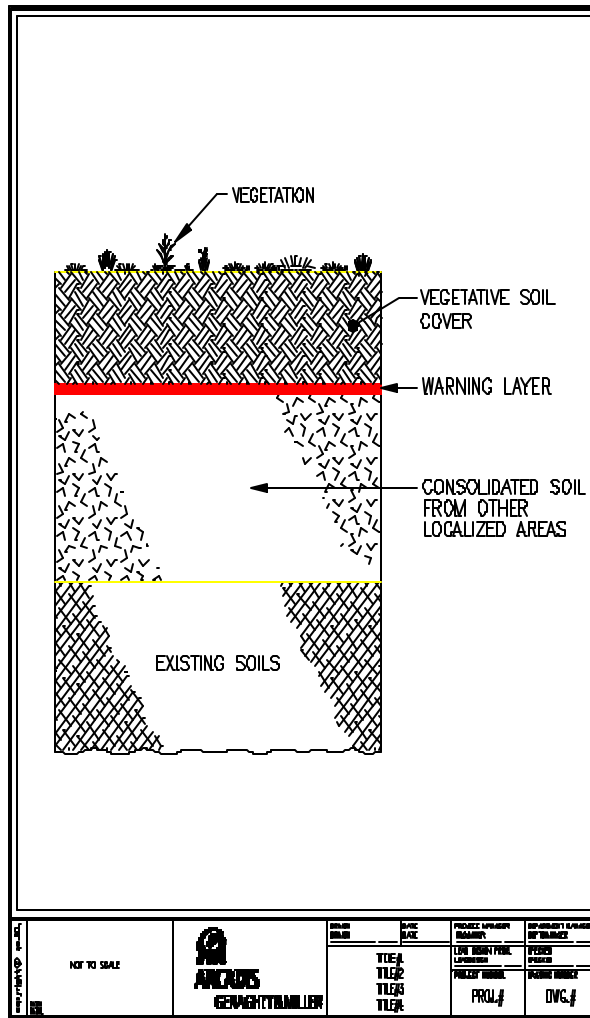
### **Soil Consolidation and Capping**

Capping is a containment remedial technique in which a permeable or impermeable barrier is installed over contaminated soils to eliminate direct exposure pathways, and limit impacts via storm water run-off. Capping systems are easily installed and can provide a lasting means of exposure and run-off control when combined with institutional controls (outlined below). Caps in industrial areas are typically constructed of soil, concrete, asphalt, or a combination of those materials.

There are several smaller areas at the BRAC excess area where soil contamination has been detected in isolated locations. Capping of each of these smaller areas will not be feasible from an engineering or site reuse perspective. The proposed remedial approach will include excavation of contaminated soil impacts from these locations and consolidation of the soils in the Area North of Facility 471 Coal Bins. After completion of consolidation, a cap will be placed over that entire area making up the engineering control portion of the overall soil remedy.

There are many potential capping systems available for use. The selected cap for the site will be a soil and vegetative cover. This type of cap is consistent with NJDEP regulations for soil remediation (NJDEP January 1998), and will consist of a layer of clean soil over the impacted material. Shallow rooting vegetation (i.e., grasses) will be planted in the cover system to provide erosion and run-off stability as well as to match the surrounding environs. In addition, a warning material (typically a thin, colored, plastic barrier) may be placed between the impacted media and the soil cover in order to alert anyone accidentally excavating in the cap area. Figure 3 contains a schematic cross-section of the proposed cover.

**Figure 3 Schematic of typical soil cover**



**Institutional Controls (Declaration of Environmental Restriction)**

In addition to the proposed engineering control to limit exposure to the impacted soils, an institutional control in the form of a DER will be employed. A DER is a type of deed restriction that is generally used in conjunction with other response actions to form the overall soil remedy for sites as it provides another way to limit exposure to the impacted media in the future. The DER will also be required by the NJDEP as part of the proposed closure if the contaminated soils are capped. The DER will be a notification to existing and future property owners that soils on the property are contaminated and that any future redevelopment will have to be consistent with the contamination present.

## Summary of Environmental Risk Management

Exposure is defined as the actual contact of an organism with a chemical or physical agent (USEPA 1989). Whether a constituent is actually of concern to human health depends on the likelihood of exposure (i.e., whether an exposure pathway exists). An exposure pathway is defined by four elements: (1) a source and mechanism of constituent release to the environment, (2) an environmental transport medium for the released constituent, (3) a point of potential contact by the receptor with the affected medium (the exposure point), and (4) an exposure route to the receptor at the exposure point. All four elements must be in place for an exposure pathway to be considered complete.

At the Camp Pedricktown BRAC excess property potential exposure to chemicals agents constituents in soil and groundwater was considered based on expected future land uses. Future land uses at the site are expected to include industrial or commercial activities as the site has recently been rezoned as CI (Base Reuse Plan, revised March 2, 1999). Future development or use by residential receptors was not considered a foreseeable future use. Specifically, the following exposure pathways were considered : (1) ingestion and dermal contact to surface soil by site workers, (2) ingestion and dermal contact to surface and subsurface soil by construction workers, and (3) dermal contact to groundwater by construction workers.

In all cases considered, the engineering and institutional controls that are proposed for Camp Pedricktown will prevent contact between the potential receptors and the affected medium and therefore, all pathways are considered incomplete. A summary of the site management prescriptive remedial approaches proposed for Camp Pedricktown and the associated risk management is presented in Table 2.

Table 2. Summary of Site Management Prescriptive Remedial Approaches for Soil and GW  
Camp Pedricktown, New Jersey

Area	Management Approach	Control	Action
Soil	Soil/Vegetation Cover	Engineering	Eliminates exposure pathway to soil
	Declaration of Environmental Restriction (DER)	Institutional	Imposes a deed notice to prevent certain site activities; for example, residential use, excavation, etc.
Groundwater	Active in-situ groundwater remediation	Engineering	Removes source mass and prevents further migration of groundwater contaminants.
	Classification Exception Area	Institutional	Designates area of groundwater with constituents above applicable standards.

The cap and the DER should prevent both site workers from exposure to the contaminated soils in the area north of the former coal bins (Facility 471). Future construction activities requiring digging below ground surface will be deed restricted through both a DER and a CEA. These restrictions will help prevent the unlikely contact with soil and groundwater by limiting construction or by requiring construction workers to use appropriate health and safety measures.

## **Integration of Site Management Approaches**

### **Integrated Remedial Approach for Groundwater**

As outlined previously, three areas in which VOCs have been detected in groundwater present minimal concern as the levels of VOCs in these areas are relatively low. A fourth area (Former Vehicle Wash Rack/Scrap Metal Dump Area) has been observed to contain higher levels of contamination and the contamination from this area extend off-site and impact an off-site stream. Given the low levels of VOC impacts in the other three locations, the proposed remediation plan will address impacts in these three locations only through the use of the institutional controls of a CEA with groundwater monitoring. The use of institutional controls in these areas is justified, as the of active remedial measures in these areas would likely provide negligible environmental benefits, and that it is expected that the very low levels of impacts in these areas will be reduced via natural processes over time. Conversely, based on the higher levels of VOCs present in the Former Vehicle Wash Rack/Scrap Metal Dump Area and migration of impacts off-site, active groundwater remediation via air sparging will be applied in this area. Groundwater monitoring will also be used in this area to both evaluate the progress of the active remedy and allow an ongoing determination of the nature and extent of VOCs in groundwater. In addition, per NJDEP requirements, the CEA established at the site will also cover the Former Vehicle Wash Rack/Scrap Metal Dump Area even though active remediation will be applied in this location

In addition to the technical suitability, the proposed remedial approach will comply with the five specific requirements identified for the site redevelopment plan as follows.

Access to Infrastructure - The proposed remedial approach (both air sparging and monitoring/CEA) will not require extraction, above-grade treatment, and subsequent disposal of the water and/or the potential of a large amount of above- or below-grade equipment. In addition, installation of the active portions of the remediation system will not interfere with any reuse activities ongoing at the site currently. Some above-grade equipment will be required. However, this equipment will be placed in an area that is planned to be open space. Although there are no set development plans for the area to be treated, the in-situ nature of the overall approach could allow for reuse of the area even during application of the active portion of the groundwater remedy. Therefore, the overall approach provided will allow continued access to infrastructure as part of the SMP.

Compliance with Clean-up Guidelines – Generally, the NJDEP requires active remediation and /or a CEA in areas where groundwater that has been impacted to levels above the GWQS. In addition, regular groundwater monitoring is generally required in areas where standards are exceeded. In addition, these activities will not be undertaken without NJDEP approval the RAW. Therefore, the overall approach provided will allow for compliance with clean-up guidelines as part of the SMP.

Protection of Human Health and the Environment – As previously discussed , the presence of the PCE and other VOCs in groundwater does not present an unacceptable risk given the planned reuse of the property and the absence of completed exposure pathways. The possible off-site migration of contamination from the property or other unplanned activities could potentially allow for exposure to the GW contamination . The use of the active air sparging remedy will eliminate the off-site migration of impacts, while the ongoing groundwater monitoring and CEA will provide institutional control against future exposure on-site. Therefore, the overall approach provided should provide protection of human health and the environment as part of the SMP.

Short-term and Long-term Effectiveness and Permanence - Implementation of the air sparging should provide for rapid and effective removal of VOCs from the subsurface and should rapidly begin to inhibit the potential migration of impacts off-site. This approach also makes use of easily available equipment and services and is easily constructed, and thus can readily be applied in the short-term. Furthermore, the physical removal of the VOCs from the subsurface will provide permanent and lasting reduction of the constituent mass. Implementation of the groundwater monitoring program and the CEA will be easily performed in the short-term and will be maintained for the duration of which the GWQS exceedences are present. Therefore, the overall approach provided should be effective in both the short-term and long-term and should provide a permanent solution as part of the SMP.

Community Acceptance – The use of the active air sparging remedial approach should provide an aggressive removal of VOCs present in groundwater and prevent the further potential off-site migration of impacts. In addition, the in-situ nature of the proposed approach should draw minimal attention to the remedial activities and both the active and institutional portions of the overall remedy should be consistent with redevelopment plans. Therefore, the overall approach provided should be acceptable to the Community as part of the SMP.

## **Integrated Remedial Approach for Soil**

The use of an integrated engineering and institutional control approach for the soil impacts at the site in the form of consolidation, capping and the DER should provide a permanent and effective means of preventing exposure to the impacted media. In addition to the technical suitability, the proposed remedial approach should comply with the five specific requirements identified for the site redevelopment plan as follows.

Access to Infrastructure - The proposed remedial approach will not pose any limitations to infrastructure access at the site. Areas in which soils are excavated for the consolidation purposes will be restored through the placement of backfill, and the Facility 471 Coal Bins area to which the cap and DER are to be implemented does not contain any significant site infrastructure features. In addition, the vegetated soil cover will be designed to fit within any site reuse plan and may actually contribute to green space requirements in future reuse plans. Alternatively, the capped area will be available for redevelopment and/or reuse in manners consistent with the site reuse plan and zoning limitations (i.e., the area could be converted to a parking lot, storage area, etc.). Therefore, the overall approach provided will allow continued access to infrastructure as part of the SMP.

Compliance with Clean-up Guidelines – The proposed cap and DER will be designed and implemented according to the guidelines established by the NJDEP's regulations for soil remediation (NJDEP 1998) and Technical Requirements for Site Remediation (NJDEP 1997). These activities will not be undertaken without NJDEP approval of the RAW. Therefore, the overall approach provided will allow for compliance with clean-up guidelines as part of the SMP.

Protection of Human Health and the Environment – As previously discussed, the presence of contaminants in the shallow soils could present a risk given the presence of a direct exposure pathway. However, the consolidation and capping of the soils should eliminate possible direct exposure pathways other than that for accidental excavation through the capped area. This possibility will be minimized by use of a warning layer and by implementation of the DER in the capped area. Therefore, the overall approach should provided protection of human health and the environment as part of the SMP.

Short-term and Long-term Effectiveness and Permanence - Implementation of the cap and DER makes use of easily available equipment and services and is easily constructed, thus can readily be applied in the short-term. The cap, along with periodic inspection and upkeep, will also provide permanent and lasting elimination of direct contact and run-off of the impacts. Furthermore, the DER can be maintained in the capped area without end, thus assuring the long-term and permanent action of the institutional controls. Therefore, the overall approach provided

should be effective in both the short-term and long-term and should provide a permanent solution as part of the SMP.

Community Acceptance – Following implementation, the proposed approach will draw minimal attention to the soil remedial activities. The vegetated soil cover may actually contribute to green space requirements in future reuse plans and/or be available for redevelopment and/or reuse in manners consistent with the site reuse plan and zoning limitations (i.e., the area could be converted to a parking lot, storage area, etc.). In addition, the proposed approach will not require the use of any equipment or other infrastructure in the long-term. Once the cap is in place the only requirements will be minimal inspections and/or possible repairs. Therefore, following installation the approach should not interfere with any reuse activities ongoing at the site currently. Therefore, the overall approach provided should be acceptable to the community as part of the SMP.

## **Summary**

This SMP for the Camp Pedricktown BRAC excess property has been prepared as part of the Clean Base Pilot Program. The SMP delineates appropriate site management approaches to facilitate environmental restoration and redevelopment of the installation. The SMP provides a summary of redevelopment plans and the needs of the potential plans, an outline of the site management prescriptive remedial approaches, and a summary of the environmental risk management objectives that will be realized through the implementation of the management approaches.

The site management approaches that have been developed to address groundwater and soil at Camp Pedricktown include both engineering and institutional controls. The engineering controls to address groundwater will include physical removal via air sparging technology. Institutional controls for groundwater will include both ongoing groundwater monitoring and the establishment of a CEA. The engineering controls used to address soil will involve consolidation of soils in a centralized location, followed by capping. Institutional controls for soil will include institution of a DER (i.e., deed notice) in the capped area.

Site management activities, to be consistent with the potential redevelopment plans for Camp Pedricktown for the BRAC excess area, will comply with the following five requirements:

- Access to the infrastructure,
- Compliance with State and Federal clean-up guidelines,
- Protection of human health and the environment (based on exposure pathways consistent with planned future use),
- Short- and long-term effectiveness and permanence, and
- Community acceptance.

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The integrated remedial approaches proposed as part of the SMP are technically feasible and will address these specific requirements of potential redevelopment plans.

## References

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**APPENDIX C**  
**PROJECT TEAM ROLES AND RESPONSIBILITIES**

## **PROJECT TEAM ROLES AND RESPONSIBILITIES**

### **1. BRAC Environmental Coordinator's (BEC) Responsibilities:**

The BEC is the prime contact for response actions at Oldmans Township, NJ and Camp Pedricktown, NJ. The BEC coordinates the work of installation staff, Army technical support agencies, and the private contractor (from now on called *CTC/ARCADIS*) in the successful accomplishment of the BRAC Environmental Restoration Program (ERP) goals and policies.

In order to carry out these responsibilities, the BEC should, at a minimum:

- a. Understand and fulfill his/her role as the principal representative of the lead agency (Army) for remediation of releases.
- b. Maintain a direct relationship with Fort Dix, and HQ, FORSCOM that facilitates communication and recognizes HQ, FORSCOM's overall BRAC Program Management role and the Commander's responsibility for installation property.
- c. Understand the Defense-State Memorandum of Agreement (DSMOA) and its implications for restoration response actions.
- d. Initiate and maintain relationships with designated representatives of regulatory agencies, facilitate communications, and recognize their legitimate environmental and public health interests.
- e. Remain informed of technical requirements, actions, and findings for the site for which he/she is responsible, and be prepared to make informed decisions as the need arises.
- f. Maintain a written schedule (provided by *CTC/ARCADIS*) of milestones and commitments to achieve a ROD/DD/RAP, and provide updates to Fort Dix, and HQ, FORSCOM on a monthly basis. In addition, the BEC will maintain a written daily log (prepare by the Technical Manager/Quality Assurance (TM/QA)) of activities at the site (i.e. who is there, what occurred, weather, meetings, visitors, and any other activities related to the cleanup and disposal). This daily log will serve as a valuable business record to resolve disputes that may arise in the future.
- g. Provide copies of project documents for review and comment to appropriate Army proponents of the restoration such as HQ, FORSCOM, USAEC, USACHPPM, ODEP, and HQDA BRAC Office.

- h. Provide copies of all RODs/DDs/RAPs for review, comments, and concurrence to HQ, FORSCOM, USAEC, and USACHPPM prior to certification of release of funds for removal/interim/ remedial action to *CTC/ARCADIS*.
- i. Coordinate through command channels for technical, procedural, policy, and funding advice and support.
- j. Submit technical plans, Health and Safety Plans, deliverables (remediation documentation), and RODs/DDs/RAPs to HQ FORSCOM for review to ensure consistency with Army BRAC ERP policies and objectives and compliance with applicable legal requirements.
- k. Ensure the scope and level of effort of technical response actions are appropriate for the nature of the environmental and public health threats to be remedied.
- l. Be thoroughly familiar with AR 200-1, the National Contingency Plan (NCP), and relevant state laws and regulations that may govern selection or implementation of response actions.
- m. Achieve sufficient knowledge of environmental, health and safety, engineering, public affairs, and administrative disciplines necessary to coordinate the BRAC ERP Pilot Program.
- n. Review any proposed RD activities prior to request for approval to FORSCOM Headquarters.
- o. Work with the GSA Contracting Officer (CO) to ensure work is well planned and properly executed in a high quality manner.
- p. Provide direction to the contractor, which have the primary responsibility to initiate, lead, and manage the regulatory and public involvement activities of the project.
- q. Act as the liaison/coordinator with the responsible installation and HQ, FORSCOM with regard to closure-related environmental compliance matters.
- r. Participate, in conjunction with other BCT members, as a member of the community's Restoration Advisory Board (RAB). Also coordinate with the Local Redevelopment Authority (LRA) or designee on environmental matters affecting the leasing or conveyance of property (that is; integrating cleanup schedules and reuse priorities, cleanup actions and levels, reports to community leaders on cleanup progress and/or possible impediments to conveyance).
- s. Provide suggestions to *CTC/ARCADIS* through the contracting officer dealing with streamlined or fast track environmental procedures to achieve timely and effective cleanup where possible.

- t. Obtain signatures on RODs/DDs/RAPs for cleanup actions.
- u. Obtain signature on decision documents for corrective actions related to cleanup.
- v. Obtain appropriate installation signature on the installation's Environmental Baseline Survey.
- w. Provide input to the Finding of Suitability to Lease (FOSL) and Finding of Suitability to Transfer (FOST), as appropriate.
- x. Oversee *CTC/ARCADIS* in establishing and maintaining the Administrative Record and Participation Procedures required under CERCLA and administrative records of all actions taken with regard to the cleanup of the installation. (It is *CTC/ARCADIS*' responsibility to establish and maintain the Administrative Records.)
- y. Maintain an in-depth knowledge (through assigned TM/QA and on-site visits) of the status of site activities and provide guidance through the contracting officer to *CTC/ARCADIS*, as warranted, to ensure expeditious and proper project completion.
- z. Maintain involvement in the National Environmental Policy Act (NEPA) process for the installation to ensure appropriate coordination with the cleanup process.
- aa. Insure that issues affecting the execution of environmental cleanup programs are either resolved at the BCT level or (for sites covered under the DSMOA program without other agreements, orders, or decrees in place), through the Dispute Resolution provision in the DSMOA.
- bb. Report discovered contamination releases first to Fort Dix, and HQ, FORSCOM, then to appropriate regulatory agencies. The BEC should comply with state and federal reporting time lines.
- cc. BCP Abstract:
  - (1) Submit the BCP Abstract semi-annually to HQ, FORSCOM in conjunction with the Defense Site Environmental Restoration Tracking System (DSERTS) submission.
  - (2) Distribute the BCP Abstracts to regulators and the public in order to present the planned restoration activities for the installation.
- dd. Defense Site Environmental Restoration Tracking System (DSERTS):

(1) Include BRAC ERP requirements in the installation's submission.

(2) Update BRAC ERP activities in the DSERTS semi-annually.

(3) Submit updated DSERTS (semi-annually) to HQ, FORSCOM.

ee. Provide direction to the contractor who has the primary responsibility to:

(1) Submit notifications, reports, and RODs/DDs/RAPs to regulatory agencies and the public.

(2) Participate in negotiations with regulatory agencies regarding any BRAC ERP activities

(3) Provide information to support mutually agreed-upon plan or BRAC ERP activities to enable the state to develop a DSMOA two-year cost estimate.

ff. Execute the Community Relations Program. In this capacity:

(1) Co-Chair the Restoration Advisory Board (RAB).

(2) Implement a Community Relations Plan (CRP) to involve the public in BRAC ERP activities.

(3) Assist *CTC/ARCADIS* in establishing and maintaining the public repository and Administrative Record.

gg. Relationship with *CTC/ARCADIS*:

(1). Monitor the *CTC/ARCADIS* established milestones and schedules, to ensure that a realistic and workable sequence of events is executed.

(2) Insure that all proposed task schedules and deadlines for deliverables are provided to HQ, FORSCOM and your (BEC) office for comment, approval, and certification of completion of all the deliverables to GSA for the proper payment dispersal to *CTC/ARCADIS*.

(3) Coordinate with appropriate Headquarters and legal office regarding all interpretations of statutes and regulations that may affect performance of a task and document any deviations from DoD or Army policy. The BEC is responsible for obtaining concurrence from HQ, FORSCOM of any deviations from policy and guidance.

(4) Coordinate with *CTC/ARCADIS* to resolve any impediment to completion of the task on or before the stated deadline. If *CTC/ARCADIS* fails to meet a deadline resulting in a penalty to the Army, the BEC is responsible for notifying HQ, FORSCOM of the penalty and any associated costs.

(5) Provide support for activities on the installation such as access to sites, equipment, storage facilities, security, utilities, emergency response, and communications as appropriate.

hh. Supervise the on-site TM/QA contractor (see number 5).

## 2. Installation Responsibilities:

Garrison Commanders (GC) are ultimately responsible for all activities occurring on or effecting properties under their command. Environmental restoration activities may affect mission accomplishment, health and welfare of people who work and live on or near an installation, and public attitude toward the Army. The GC will meet his responsibilities by exercising his command and control authority over the sites selected in this Pilot Program.

## 3. Headquarters FORSCOM Responsibilities:

a. HQ, FORSCOM is responsible for overall Program Management and oversight of the BRAC ERP Pilot Program for Camp Pedricktown. HQ, FORSCOM is responsible for coordinating and reviewing BRAC ERP program decisions, distributing funds, and consolidating and reporting technical and financial requirements to USAEC and HQDA BRACO. HQ, FORSCOM is responsible for insuring that all BRAC ERP program requirements meet DoD criteria for eligibility and that sites have Relative Risk Site Evaluations (RRSEs) completed in accordance with current Army guidance. The only exception to this is for BRAC compliance projects.

b. Providing overall Pilot Program quality assurance and submission of the Defense Site Environmental Restoration Tracking System (DSERTS). Ensure USAEC receives updates (on a timely and accurate manner) of DSERTS semi-annually for development of budget allocations, the Report to Congress, and required HQDA In-Process Reviews.

c. Ensure USAEC receives the BCP Abstracts that document BRAC ERP requirements and work completed.

d. Review and staff DDs/RODs/RAPs for approval signature.

e. Submit success stories to USAEC that concisely state progress made in carrying out environmental restoration activities at military installations. These success stories may be used in the Defense Environmental Cleanup Programs Annual Report to Congress.

f. Participate with USEPA regional offices and the relevant State offices in the site evaluation process for USEPA's Hazard Ranking System (HRS) evaluation and final scoring.

g. Ensure that BRAC ERP activities are in compliance with applicable environmental regulations.

h. Coordinate with the appropriate installation, designate/approve the BEC assignment. The BEC is the primary point of contact between the installation, regulators, the public, ARCADIS, and HQ, FORSCOM

i. Approve decisions to implement removals, operable units, and remedial actions.

j. Approve decisions for Site Closeout.

k. Approve any recommended RD activities proposed prior to initiation.

l. Pilot Project Management (*CTC/ARCADIS*):

(1) Provide appropriate funds, in coordination with the BEC and ensures that funds are allocated to eligible projects.

(2) If a question arises on *CTC/ARCADIS* performance level, FORSCOM will contact the GSA KO and attempt to resolve any issues. Performance will be based on contract requirements. If quality questions continue to arise, HQ, FORSCOM may, at its discretion, initiate termination of contract IAW terms and conditions of the contract.

m. Ensure that the BECs are adequately trained.

n. Keep the BECs aware of legal and regulatory changes that may affect their projects.

4. *CTC/ARCADIS* Responsibilities:

*CTC/ARCADIS* executes the Camp Pedricktown environmental restoration Pilot Program. In order to carry out these responsibilities, *CTC/ARCADIS* will execute environmental remediation tasks at Camp Pedricktown IAW the final approved contract.

5. Technical Manager/Quality Assurance (TM/QA) Responsibilities:

The TM/QA works under the direct supervision of the BEC. In order to carry out these responsibilities, the TM/QA, at a minimum, executes his/her duties IAW the final approved TM/QA Statement of Work (SOW).

6. HQDA, Base Realignment and Closure Office (BRACO):

As the Army's program manager for the BRAC program, the DA BRACO is responsible for central management of the program, overall coordination/oversight of DA BRAC activities, and execution of special projects and studies to ensure responsiveness, efficiency, and continuity of the Army BRAC Program.

7. General Services Administration (GSA):

The GSA is the primary contracting office for the Pilot Program. In that capacity they manage the *CTC/ARCADIS* contract and disperse payments to *CTC/ARCADIS* based on TM/QA, BEC, and HQ, FORSCOM certification that deliverables/milestones have been complete by the contractor.

27 December 01

**APPENDIX D**  
**PROJECT MANAGEMENT PLAN REVISIONS**  
**AND LESSONS LEARNED**

## **PROJECT MANAGEMENT PLAN (PMP) REVISION 2**

### **COMPLETION OF PROJECT MILESTONE/DELIVERABLE THAT INITIATED REVISION 2 OF PMP:**

- Submittal of the Remedial Action Workplan (RAW) to the NJDEP.

### **EVENTS LEADING TO COMPLETION OF PROJECT MILESTONE OR DELIVERABLE:**

- Draft RAW submitted to Army for review on 5 May.
- Army comments on the RAW were received on 18 May.
- Army comments resolved and the Army approved the RAW on 19 May.
- The Army-approved RAW was submitted to the NJDEP for review and approval on schedule on May 22, 2000.
- The NJDEP conditionally approved the RAW, subject to resolution of comments, in its letter to ARCADIS Geraghty & Miller (AG&M) dated June 21, 2000. The NJDEP comments concerned the number of wells, their construction and how water samples would be taken. AG&M will formally resolve these issues in the groundwater addendum to the RAW.
- With close communication between the NJDEP, Fort Dix, CTC and AG&M, all issues involved with gaining NJDEP approval of the RAW were resolved quickly and to all parties satisfaction.
- The NJDEP RAW was implemented on site on 21 June.

### **LESSONS LEARNED:**

- Frequent communications between all parties involved in the document review and approval process was a key factor for ensuring timely review and approval of the RAW.

### **ACTIONS TO ACCOMPLISH FUTURE PROJECT MILESTONES OR DELIVERABLES:**

- Initiate asbestos abatement by awarding subcontract to asbestos abatement
- Complete asbestos abatement
- Install and begin operation of pilot groundwater treatment system

### **PROJECT MANAGEMENT PLAN (PMP) REVISION 3**

#### **COMPLETION OF PROJECT MILESTONE/DELIVERABLE THAT INITIATED REVISION 3 OF PMP:**

- Execution of contract with asbestos removal contractor.

#### **EVENTS LEADING TO COMPLETION OF PROJECT MILESTONE OR DELIVERABLE:**

- AG&M sent out requests for bids of removal of asbestos containing materials (ACM) at Camp Pedricktown on 1 May 2000.
- AG&M entered into contract with AEI2, L.L.C (AEI2) of Berlin NJ, to abate the ACM at Camp Pedricktown on 15 May 2000. This contract was originally scheduled for execution on 22 August.
- For quality control & assurance purposes, AG&M subcontracted Environmental Management Group, Inc. (EMG) of Edgemont, Pa to provide third-party oversight of AEI2 and to conduct air monitoring during abatement activities.
- During the week of 21 June AG&M conducted a pre-work meeting/site visit with AEI2 and EMG to familiarize them with the lay out of Camp Pedricktown.
- On-site asbestos abatement began 26 June. Abatement activities were finished up on July 5 and clearance air monitoring samples were collected at this time.
- The work included removal and disposal of ACM from Facilities 177, 179, 422, 471, and 494.
- Draft milestone presentation for the initiation of asbestos abatement was submitted to the Army for review on 19 July. Army granted approval on of presentation on 1 August 2000.

#### **LESSONS LEARNED:**

- During a pre-work site visit by AG&M and the asbestos abatement subcontractor, one of the buildings in which asbestos abatement was to be conducted could not be entered because it was locked. Although this did not create a significant problem, it does reinforce the importance of properly coordinating site visits with the appropriate Army point-of-contact.

#### **ACTIONS TO ACCOMPLISH FUTURE PROJECT MILESTONES OR DELIVERABLES:**

- Complete asbestos abatement
- Install and begin operation of pilot groundwater treatment system
- Complete site Pre-Remedial Characterization

**PROJECT MANAGEMENT PLAN (PMP) REVISION 4**

**COMPLETION OF PROJECT MILESTONE/DELIVERABLE THAT INITIATED Revision 4 OF PMP:**

- Submittal of summary final asbestos abatement report to Army.

**EVENTS LEADING TO COMPLETION OF PROJECT MILESTONE OR DELIVERABLE:**

- On-site asbestos abatement began 26 June. Abatement activities were finished up on July 5 and clearance air monitoring samples were taken at the site the same day.
- Approximately 2,013 linear feet of asbestos-containing pipe insulation and 1,035 square feet of asbestos containing debris and water tank insulation was removed from Facilities 177, 179, 422, 471, and 494 and properly disposed. The floor tile in Facilities 100, 474, and 494 was determined to be in good (nonfriable) condition and was therefore not removed.
- Acceptable clearance air monitoring results were received by AG&M on 6 July. All results were below the Asbestos Hazard Emergency Response Act action level of 0.005 structures per cubic centimeter of air.
- Draft milestone presentation for the completion of asbestos abatement was submitted to the Army for review on 19 July. The Army granted approval of the presentation on 1 August 2000.

**LESSONS LEARNED:**

- The asbestos abatement work was completed approximately four months ahead of schedule and without complications.

**ACTIONS TO ACCOMPLISH FUTURE PROJECT MILESTONES OR DELIVERABLES:**

- Install and begin operation of pilot groundwater treatment system
- Completion of Camp Pedricktown site Pre -Remedial Characterization
- Obtain Deed Restrictions for Soil capping area

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**PROJECT MANAGEMENT PLAN (PMP) REVISION 5**

**COMPLETION OF PROJECT MILESTONE/DELIVERABLE THAT INITIATED Revision 5 OF PMP:**

- Installation and commencement of operation of pilot groundwater treatment system

**EVENTS LEADING TO COMPLETION OF PROJECT MILESTONE OR DELIVERABLE:**

- Remedial approach was presented in the Remedial Action Plan, which was approved by the NJDEP on 21 June 00.
- Installation of the system began the third week of July and was completed in the first week of August. Shake down operations were carried out during the 3 & 4 of August and formal start of the system was 7 August.
- Air sparging, which is well suited for the sandy nature of the site, uses pressurized injection of clean air below the water table in the zone where impacts are present. As the air travels upward, VOCs dissolved in the groundwater will move out of a dissolved phase and in to a vapor phase allowing the VOCs to slowly vent to the surface.
- 11 new wells were installed onsite to monitor changes during operation of the pilot system. These wells will be monitored during the six months of operations and results used to help design the full-scale groundwater treatment system.
- Milestone presentation for the completion and initiation of operation of the pilot groundwater system was approval by the Army on 28 September 2000.

**LESSONS LEARNED:**

- With installation of the system on site, approvals to excavate soil and make alterations to Building 506 were needed from several different Army offices. Sequential approvals among the offices threaten to delay installation and start up of the system. However, frequent communications between all parties involved in the review and approval process was the key factor for ensuring timely approval of construction on site. The system was installed and operational on schedule.
- Although UXO surveys came up clean for the site, caution had to be exercised and contingency created in the unlikely event of discovering UXO during excavations. This required updating the Site Health and Safety Plan, communicating with the Army EOD and extra time and personnel to conduct area specific surveys for possible UXO. No UXO were uncovered during trenching operations.

**ACTIONS TO ACCOMPLISH FUTURE PROJECT MILESTONES OR DELIVERABLES:**

- Completion of Camp Pedricktown site Pre-Remedial Characterization (October 00)
- Obtain Deed Restrictions for Soil capping area (November 00)
- Installation of Full-Scale Groundwater Remedy (March 01)

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**PROJECT MANAGEMENT PLAN (PMP) REVISION 6**

**COMPLETED PROJECT MILESTONE/DELIVERABLE:**

- Completion of Camp Pedricktown site Pre-Remedial Characterization

**EVENTS LEADING TO COMPLETION OF PROJECT MILESTONE OR DELIVERABLE:**

- The primary component of the Pre-Remedial Characterization is the submittal of the Proposed Plan for regulatory and public review and comment on the Army's preferred soil and groundwater remedy plans for Camp Pedricktown.
- As part of the characterization of soil impacts, 479 samples were submitted for analysis between May and November 2000. The results of these samples were prepared and presented in the supplemental Soil Data Package; which is available in the public repositories. Additional soil sampling was conducted between November 2000 and February 2001; these results have been incorporated into the Remedial Action Workplan Soil Remedy Addendum.
- Sample results from May through January were reviewed and compiled by AG&M; who used them to prepare the Proposed Plan. This document was submitted for public review on 17 January 2001. The Public comment period ended on 15 February 2001; all comments received have been incorporated and will be addressed in the Decision Document.
- The Milestone presentation for this event was the Public review meeting, conducted by CTC and AG&M under the guidance of the U.S. Army on 25 January 2001.
- With the decision to use excavation and off-site disposal for the soil remedy, the schedule and project deliverables have been revised. Four years of long term operations and monitoring have been removed from the schedule.

**LESSONS LEARNED:**

- With the large scale sampling events being conducted (i.e. soil delineation, groundwater monitoring) reproduction and distribution of voluminous documents consumes excessive resources. In an effort to reduce this consumption, CTC/AG&M will reproduce and post large documents to the two public repositories and inform the BRAC team and distribution list to its availability.
- As more milestones are completed and approves granted by the regulatory agencies, letters of correspondence between CTC/AG&M and the agencies must be distributed to the BRAC team and the distribution list to keep properly informed all interested parties to these developments.
- Frequent communications between all parties involved in the review and approval process continues to be a key factor for ensuring timely approval of time-critical documents like the Proposed Plan and Decision Document.

**ACTIONS TO ACCOMPLISH FUTURE PROJECT MILESTONES OR DELIVERABLES:**

- Installation of Full-Scale Groundwater Remedy
- Obtain CEA Restrictions
- Installation of Full-Scale Soil Remedy

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**PROJECT MANAGEMENT PLAN (PMP) REVISION 7**

**COMPLETED PROJECT MILESTONE/DELIVERABLE:**

- Installation and activation of Full-Scale Groundwater Remedy

**EVENTS LEADING TO COMPLETION OF PROJECT MILESTONE OR DELIVERABLE:**

- Remedial approach was presented in the Remedial Action Plan, which was approved by the NJDEP on 21 June 00.
- Final remedial approach and system design was presented in the Remedial Action Workplan Addendum for Groundwater, which was approved by the NJDEP on 23 May 2001. This document is available for review in the public repository located at the Pedricktown Municipal Building.
- Design and installation of the full-scale system began the third week of April and was completed 1 June 2001. The system was activated the same day, 1 June. Shake down operations were carried out during the 5<sup>th</sup> & 6<sup>th</sup> of June.
- Nine new sparging wells were built and the system controls and equipment were expended to accommodate the additional wells. Two of the wells were installed immediately west of the existing pilot system, the remaining seven wells were installed along the direction of groundwater flow in the Area North of Facility 471 Coal Bins.
- Milestone presentation for the installation and activation of the full-scale groundwater system was approval by the Army on 1 July 2001.

**LESSONS LEARNED:**

- With Harbor Rocks interest to begin developing the property as soon as possible, it highlights future considerations. Interested private corporations may be willing to fund an expedited clean schedule to gain access to the site sooner. Provisions in the SOW and contract would allow *CTC* to conduct additional/accelerated work on behalf of an interested third party.
- As a result of AG&M's detailed soil characterization and switch from on-site cap to off-site disposal, provisions should be included in the SOW that allow for the substitution of obsolete deliverables items.
- Frequent communications between all parties involved in the review and approval process continues to be a key factor for ensuring timely approval of time-critical documents like the Commander's License and the Remedial Action Workplan Addendum for Groundwater and Soil.

**ACTIONS TO ACCOMPLISH FUTURE PROJECT MILESTONES OR DELIVERABLES:**

- Contract Award and Site Mobilization for Soil Remedy
- EPA Certification of Full-Scale GW Remedy
- Installation of Full-Scale Soil Remedy

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**PROJECT MANAGEMENT PLAN (PMP) REVISION 8**

**COMPLETED PROJECT MILESTONE/DELIVERABLE:**

- Contract Award and Site Mobilization for Soil Remedy

**EVENTS LEADING TO COMPLETION OF PROJECT MILESTONE OR DELIVERABLE:**

- Remedial approach was presented in the Remedial Action Plan, which was approved by the NJDEP on 21 June 00.
- Final remedial approach and system design was presented in the Remedial Action Workplan Addendum for Groundwater, which was approved by the NJDEP on 23 May 2001. This document is available for review in the public repository located at the Pedricktown Municipal Building.
- Design and installation of the full-scale system began the third week of April and was completed 1 June 2001. The system was activated the same day, 1 June. Shake down operations were carried out during the 5<sup>th</sup> & 6<sup>th</sup> of June.
- Nine new sparging wells were built and the system controls and equipment were expended to accommodate the additional wells. Two of the wells were installed immediately west of the existing pilot system, the remaining seven wells were installed along the direction of groundwater flow in the Area North of Facility 471 Coal Bins.
- Milestone presentation for the installation and activation of the full-scale groundwater system was approval by the Army on 1 July 2001.

**LESSONS LEARNED:**

- With Harbor Rocks interest to begin developing the property as soon as possible, it highlights future considerations. Interested private corporations may be willing to fund an expedited clean schedule to gain access to the site sooner. Provisions in the SOW and contract would allow *CTC* to conduct additional/accelerated work on behalf of an interested third party.
- As a result of AG&M's detailed soil characterization and switch from on-site cap to off-site disposal, provisions should be included in the SOW that allow for the substitution of obsolete deliverables items.
- Frequent communications between all parties involved in the review and approval process continues to be a key factor for ensuring timely approval of time-critical documents like the Commander's License and the Remedial Action Workplan Addendum for Groundwater and Soil.

**ACTIONS TO ACCOMPLISH FUTURE PROJECT MILESTONES OR DELIVERABLES:**

- Installation of Full-Scale Soil Remedy
- EPA Certification of Full-Scale GW Remedy
- EPA Certification of Full-Scale Soil Remedy

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**PROJECT MANAGEMENT PLAN (PMP) REVISION 9**

**COMPLETED PROJECT MILESTONE/DELIVERABLE:**

- Installation of Full-Scale Soil Remedy

**EVENTS LEADING TO COMPLETION OF PROJECT MILESTONE OR DELIVERABLE:**

- Remedial approach was presented in the Remedial Action Plan, which was approved by the NJDEP on 21 June 00.
- Final remedial approach and system design was presented in the Remedial Action Workplan Addendum for Groundwater, which was approved by the NJDEP on 23 May 2001. This document is available for review in the public repository located at the Pedricktown Municipal Building.
- Design and installation of the full-scale system began the third week of April and was completed 1 June 2001. The system was activated the same day, 1 June. Shake down operations were carried out during the 5<sup>th</sup> & 6<sup>th</sup> of June.
- Nine new sparging wells were built and the system controls and equipment were expended to accommodate the additional wells. Two of the wells were installed immediately west of the existing pilot system, the remaining seven wells were installed along the direction of groundwater flow in the Area North of Facility 471 Coal Bins.
- Milestone presentation for the installation and activation of the full-scale groundwater system was approval by the Army on 1 July 2001.

**LESSONS LEARNED:**

- With Harbor Rocks interest to begin developing the property as soon as possible, it highlights future considerations. Interested private corporations may be willing to fund an expedited clean schedule to gain access to the site sooner. Provisions in the SOW and contract would allow *CTC* to conduct additional/accelerated work on behalf of an interested third party.
- As a result of AG&M's detailed soil characterization and switch from on-site cap to off-site disposal, provisions should be included in the SOW that allow for the substitution of obsolete deliverables items.
- Frequent communications between all parties involved in the review and approval process continues to be a key factor for ensuring timely approval of time-critical documents like the Commander's License and the Remedial Action Workplan Addendum for Groundwater and Soil.

**ACTIONS TO ACCOMPLISH FUTURE PROJECT MILESTONES OR DELIVERABLES:**

- EPA Certification of Full-Scale GW Remedy
- EPA Certification of Full-Scale Soil Remedy
- Approved Remedial Action Report

ID	Task Name	Duration	Start	Finish	2000												2001											
					F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N		
1	<b>Overall Project Schedule</b>	<b>3219 days</b>	<b>Tue 2/22/00</b>	<b>Tue 5/22/12</b>	[Gantt bar spanning from 2/22/00 to 5/22/12]																							
2	Project Initiation	20 days	Tue 2/22/00	Tue 3/21/00	[Gantt bar from 2/22/00 to 3/21/00]																							
3	<b>Project Management Plan</b>	40 days	Tue 2/22/00	Tue 4/18/00	[Gantt bar from 2/22/00 to 4/18/00]																							
4	Project Management Plan Presentation	1 day	Thu 5/18/00	Thu 5/18/00	[Milestone diamond at 5/18/00]																							
5	PMP Revision 1	1 day	Mon 6/19/00	Mon 6/19/00	[Milestone diamond at 6/19/00]																							
6	<b>Remedial Action Workplan</b>	<b>94 days</b>	<b>Tue 2/22/00</b>	<b>Mon 7/3/00</b>	[Gantt bar from 2/22/00 to 7/3/00]																							
7	Prepare Remedial Action Workplan	40 days	Tue 2/22/00	Tue 4/18/00	[Gantt bar from 2/22/00 to 4/18/00]																							
8	Submit Draft RAW to Army - Review Period	15 days	Wed 4/19/00	Tue 5/9/00	[Gantt bar from 4/19/00 to 5/9/00]																							
9	Incorporate Army Comments	8 days	Wed 5/10/00	Fri 5/19/00	[Gantt bar from 5/10/00 to 5/19/00]																							
10	<b>Submittal of RAW to the NJDEP</b>	<b>1 day</b>	<b>Mon 5/22/00</b>	<b>Mon 5/22/00</b>	[Milestone diamond at 5/22/00]																							
11	Receive NJDEP Comments	30 days	Tue 5/23/00	Mon 7/3/00	[Gantt bar from 5/23/00 to 7/3/00]																							
12	Remedial Action Workplan Presentation	1 day	Thu 6/22/00	Thu 6/22/00	[Milestone diamond at 6/22/00]																							
13	PMP Revision 2	1 day	Fri 7/21/00	Fri 7/21/00	[Milestone diamond at 7/21/00]																							
14	<b>Asbestos Abatement</b>	<b>37 days</b>	<b>Wed 5/17/00</b>	<b>Thu 7/6/00</b>	[Gantt bar from 5/17/00 to 7/6/00]																							
15	<b>Initiation of Abatement</b>	1 day	Wed 5/17/00	Wed 5/17/00	[Milestone diamond at 5/17/00]																							
16	Abatement Activities	36 days	Thu 5/18/00	Thu 7/6/00	[Gantt bar from 5/18/00 to 7/6/00]																							
17	<b>Completion of Abatement</b>	1 day	Thu 7/6/00	Thu 7/6/00	[Milestone diamond at 7/6/00]																							
18	Initiation of Abatement Presentation	1 day	Mon 6/19/00	Mon 6/19/00	[Milestone diamond at 6/19/00]																							
19	PMP Revision 3	1 day	Wed 7/19/00	Wed 7/19/00	[Milestone diamond at 7/19/00]																							
20	Completion of Abatement Presentation	1 day	Mon 8/7/00	Mon 8/7/00	[Milestone diamond at 8/7/00]																							
21	PMP Revision 4	1 day	Thu 9/7/00	Thu 9/7/00	[Milestone diamond at 9/7/00]																							
22	<b>Perform Interim Remedial Action (Pilot-Scale System)</b>	<b>5 days</b>	<b>Tue 8/1/00</b>	<b>Mon 8/7/00</b>	[Gantt bar from 8/1/00 to 8/7/00]																							
23	Pilot-Scale System Start up Presentation	1 day	Thu 9/7/00	Thu 9/7/00	[Milestone diamond at 9/7/00]																							
24	Continued Operation of Pilot System (3 months) #1	60 days	Tue 8/8/00	Mon 10/30/00	[Gantt bar from 8/8/00 to 10/30/00]																							
25	Submit Pilot Groundwater Treatment Report #1	1 day	Fri 11/17/00	Fri 11/17/00	[Milestone diamond at 11/17/00]																							
26	Continued Operation of Pilot System (3 months) #2	60 days	Tue 10/31/00	Mon 1/22/01	[Gantt bar from 10/31/00 to 1/22/01]																							
27	Submit Pilot Groundwater Treatment Report #2	1 day	Thu 2/15/01	Thu 2/15/01	[Milestone diamond at 2/15/01]																							
28	PMP Revision 5	1 day	Mon 10/9/00	Mon 10/9/00	[Milestone diamond at 10/9/00]																							
29	<b>Perform Pre-Remedial Characterization</b>	<b>121 days</b>	<b>Mon 7/10/00</b>	<b>Mon 12/25/00</b>	[Gantt bar from 7/10/00 to 12/25/00]																							
30	Conduct Field Work	30 days	Mon 7/10/00	Fri 8/18/00	[Gantt bar from 7/10/00 to 8/18/00]																							

ID	Task Name	Duration	Start	Finish	2001																		
					A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F
31	Data Review and Analysis	30 days	Mon 8/21/00	Fri 9/29/00																			
32	Prepare Proposed Plan	20 days	Mon 10/2/00	Fri 10/27/00																			
33	Submittal of Proposed Plan	1 day	Mon 10/30/00	Mon 10/30/00																			
34	Review of Proposed Plan	40 days	Tue 10/31/00	Mon 12/25/00																			
35	<b>Public Notice</b>	<b>22 days</b>	<b>Tue 12/19/00</b>	<b>Wed 1/17/01</b>																			
36	CTC prepares Public Notice	3 days	Tue 12/19/00	Thu 12/21/00																			
37	Draft public notice to Army	1 day	Fri 12/22/00	Fri 12/22/00																			
38	Army Review of Public Draft	7 days	Mon 12/25/00	Tue 1/2/01																			
39	Receive Army comments	1 day	Wed 1/3/01	Wed 1/3/01																			
40	Incorporate Army comments	1 day	Thu 1/4/01	Thu 1/4/01																			
41	Final Public Notice to Army	1 day	Fri 1/5/01	Fri 1/5/01																			
42	Army Approved Public Notice	8 days	Mon 1/8/01	Wed 1/17/01																			
43	Public Review Meeting	28 days	Tue 12/19/00	Thu 1/25/01																			
44	Secure location of Public Meeting	1 day	Tue 12/19/00	Tue 12/19/00																			
45	Prepare agenda for Public meeting	4 days	Tue 12/19/00	Fri 12/22/00																			
46	Submit agenda for Army Review	6 days	Wed 12/27/00	Wed 1/3/01																			
47	Finalize agenda and distribute	7 days	Thu 1/4/01	Fri 1/12/01																			
48	Publish Public Notice (Newspapers & postings)	7 days	Wed 1/17/01	Thu 1/25/01																			
49	Obtain tape recorder for minutes	1 day	Thu 1/18/01	Thu 1/18/01																			
50	Public Review Meeting	1 day	Thu 1/25/01	Thu 1/25/01																			
51	Proposed Plan Presentation	1 day	Thu 1/25/01	Thu 1/25/01																			
52	PMP Revision 6	1 day	Mon 2/26/01	Mon 2/26/01																			
53	Design of Full-Scale Groundwater Remedy	77 days	Mon 11/20/00	Tue 3/6/01																			
54	Submittal of RAW Addendum (Groundwater) to the NJDEP	1 day	Wed 3/7/01	Wed 3/7/01																			
55	Design of Full-Scale Soil Remedy	40 days	Tue 12/26/00	Mon 2/19/01																			
56	Submittal of RAW Addendum (Soil) to the NJDEP	1 day	Fri 3/9/01	Fri 3/9/01																			
57	Review of Soil RAW Addendum	40 days	Mon 3/12/01	Fri 5/4/01																			
58	<b>Installation of Full-Scale Groundwater Remedy</b>	<b>19 days</b>	<b>Tue 5/8/01</b>	<b>Fri 6/1/01</b>																			
59	Install Full-scale GW Remedy Presentation	1 day	Mon 7/2/01	Mon 7/2/01																			
60	PMP Revision 7	1 day	Wed 8/1/01	Wed 8/1/01																			

