

CHAPTER 1

► INTRODUCTION AND SUMMARY ◀

The purpose of this Base Realignment and Closure (BRAC) Cleanup Plan (BCP) is to summarize the current status of the Umatilla Depot Activity (UMDA) environmental restoration and associated environmental compliance programs. The BCP also presents a comprehensive strategy for implementing response actions at the Depot which are necessary to protect human health and the environment. This implementation strategy integrates activities being performed under the BRAC Installation Restoration Program (IRP) and installation environmental compliance programs to support full restoration of UMDA.

This BCP is a planning document. It was necessary to make certain assumptions and interpretations to develop the schedule and cost estimates provided. As additional data become available, implementation strategies and cost estimates could be altered. Such changes would then be reflected in future updates to the BCP. However, dramatic modifications are not expected because of the advanced stages of the restoration process at UMDA. This version of the BCP was prepared with information available as of January 1995.

Chapter 1 of the BCP describes the objectives of the environmental restoration program, explains the purpose of the BCP, introduces the Project Team formed to review the program, and provides a brief description and history of the installation.

Chapter 2 summarizes the current status of the UMDA property disposal planning process and describes the relationship of the disposal process to other environmental programs.

Chapter 3 summarizes the current status and past history of the UMDA IRP and associated environmental compliance programs, community relations activities that have occurred to date, and the environmental condition of installation property.

Chapter 4 describes the installation-wide strategy for environmental restoration, including the strategies for dealing with each operable unit (OU) on the installation. This chapter also includes plans for managing installation compliance programs, natural resources programs, and community relations activities.

Chapter 5 provides master schedules of planned and anticipated activities to be performed throughout the duration of the environmental restoration program, including associated compliance activities.

Chapter 6 describes specific technical and/or administrative issues to be resolved and presents a strategy for resolving these issues.

Chapter 7 provides a list of primary references utilized in the preparation of the BCP.

The following appendices are included in this document:

- ▶ Appendix A presents summary tables of past, current, and projected costs for the environmental restoration program at the installation.
- ▶ Appendix B presents technical documents, data loading summary, and listings of previous environmental restoration program deliverables by program and by site.
- ▶ Appendix C presents summaries of Decision Documents (DDs) for each site or OU for which a remedial action (RA) was selected.
- ▶ Appendix D presents summaries of the DD for each site or OU for which a no further action (NFA) decision has been made.
- ▶ Appendix E is provided to include working conceptual site models for OUs as they become available.
- ▶ Appendix F presents other ancillary materials relevant to the BCP including a BCP distribution list and a summary of issues related to environmental justice at UMDA.

1.1 Environmental Response Objectives

The UMDA Environmental Office is responsible for the management and overall implementation of environmental programs at the Depot. The U.S. Army Environmental Center (USAEC) has conducted Enhanced Preliminary Assessment (EnPA) and Remedial Investigation/Feasibility Study (RI/FS) investigations at the installation. Other environmental investigation, remedial design (RD), RA and compliance program support is provided by the U.S. Army Corps of Engineers (USACE), Seattle District.

The BRAC Cleanup Team (BCT), UMDA, USAEC, and other supporting U.S. Army agencies combined objectives for the environmental restoration and compliance program at UMDA are as follows:

- ▶ Protect human health and the environment;
- ▶ Strive to meet reuse goals established by the U.S. Army and the community, consistent with legislation relevant to UMDA realignment (and ultimately closure);
- ▶ Comply with existing statutes and regulations;
- ▶ Conduct all environmental restoration activities in a manner consistent with Section 120 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), Resource Conservation and Recovery Act (RCRA), and other applicable State of Oregon regulations;

- ▶ Meet Federal Facility Agreement (FFA) and Record of Decision (ROD) deadlines as detailed in Chapter 5 of this BCP;
- ▶ Continue efforts to identify all potentially-contaminated areas, and incorporate any new sites into the BCP process, as appropriate;
- ▶ Incorporate any new sites into the FFA as appropriate;
- ▶ Establish priorities for environmental restoration and restoration-related compliance activities based on mission requirements, U.S. Army disposal protocols and the community reuse plan so that property disposal and reuse goals can be met;
- ▶ Initiate selected removal actions to control, eliminate, or reduce risks to manageable levels;
- ▶ Continue to identify and map the environmental condition of installation property with the intent of identifying areas suitable for transfer by deed;
- ▶ Complete the environmental restoration process as soon as practicable for each source area, zone, or OU;
- ▶ Commence RAs for (1) environmental and (2) property disposal and reuse priority areas as soon as practicable;
- ▶ Continue RD for four of the OUs;
- ▶ Advise the real estate arm of the USACE of property that is deemed suitable for transfer and properties that are not suitable for transfer because they are either not properly evaluated or pose an unacceptable human health or environmental risk;
- ▶ Conduct long-term RAs for groundwater and any necessary 5-year reviews for wastes left on site; and
- ▶ Establish interim and long-term monitoring plans for RAs as appropriate.

1.2 BCP Purpose, Updates, and Distribution

This BCP presents, in summary fashion, the status of UMDA's environmental restoration and compliance programs and the comprehensive strategy for environmental restoration and restoration-related compliance activities. It lays out the response action approach being implemented at the installation to support realignment/closure. In addition, it defines the status of efforts to resolve technical issues so that continued progress and implementation of scheduled activities can occur. The UMDA BCP strategy and schedule is designed to streamline and expedite the necessary response actions associated with identification of clean property in order to facilitate the earliest possible disposal and reuse activities.

This BCP is a "living document" and will be updated annually, or more frequently if determined to be necessary. Updates of the BCP will be distributed to each member of UMDA Project Team, as well as to additional individuals and addresses identified in the distribution list provided in Appendix F as Table F-1.

1.3 BCT/Project Team

The UMDA BCT has been established and is led by Mark Daugherty who is the BRAC Environmental Coordinator (BEC). Mr. Daugherty represents the Depot Commander. The two other BCT members are Remedial Project Managers from the U.S. Environmental Protection Agency (USEPA), Region X (Harry Craig) and the Oregon Department of Environmental Quality (ODEQ) (Bill Dana).

The UMDA Project Team consists of the BCT and additional individuals whom the BCT selects to assist in the environmental restoration process at UMDA, including the Base Transition Coordinator, representatives from the USAEC, USACE, and others. The Project Team is led by the BEC. Project Team meetings are held regularly for the purpose of conducting periodic program reviews and reaching consensus on decisions with the USEPA and the ODEQ.

Table 1-1 lists the current Project Team members, and specifies individual roles and responsibilities. Other support staff who contribute in the areas of toxicology and risk assessment, legal, Resource Conservation and Recovery Act (RCRA) compliance, fate and transport, field support, ecological, etc. are not all listed. BCT and Project Team members may consult/coordinate with additional staff on an as-needed basis.

TABLE 1-1. CURRENT BCT/PROJECT TEAM MEMBERS

Name	Title	Phone	Role/Responsibility
BCT MEMBERS			
Mark Daugherty	BEC/Remedial Project Manager	(503) 564-5294	UMDA Project Manager
Harry Craig	BCT USEPA Representative	(503) 326-3689	USEPA Project Manager
Bill Dana	BCT ODEQ Representative	(503) 229-6530	ODEQ Project Manager
OTHER KEY PARTICIPANTS			
Chuck Lechner	USAEC Technical Project Manager	(410) 671-1605	Technical Oversight
Clayton Kim	USAEC Technical Project Manager	(410) 671-1604	Technical Oversight
Jeff Rodin	USEPA Remedial Project Manager	(206) 553-4497	USEPA Project Manager
Mike Nelson	USACE Technical Project Manager	(206) 764-3458	RD/RA
Alan Coburn	USACE Project Manager	(206) 764-6849	RD/RA
Fred McLaren	DoD Base Transition Coordinator	(801) 833-3040	Liaison with Community
Larry Anderson	USACE Program Manager	(503) 326-3854	RD/RA
James Kluge	USACE BCP Document Coordinator	(206) 764-3320	BCP Writer/Editor
CONTRACTORS			
EARTH TECH	USACE Contractor	(703) 549-8728	BCP
Woodward-Clyde	USACE Contractor	(206) 343-7933	Technical Support

1.4 Installation Description and History

This section provides a general description and historical summary of UMDA.

1.4.1 General Property Description

UMDA is located in northwest Oregon, almost equally divided between Morrow and Umatilla counties. UMDA is 17,054 acres in size and has an additional 2,674 acres of restrictive easements surrounding the north and east Depot perimeter. The terms of the easements grant perpetual rights to the U.S. Government. Union Pacific Railroad tracks run adjacent to the installation's southern boundary. Interstate 84 runs east-west just south of the Depot and Interstate 82 runs north-south just east of the Depot. The Columbia River which separates the State of Washington from the State of Oregon, is located three miles north of the Depot. The majority of the land adjacent to UMDA is agricultural. Figure 1-1 shows the general location of the installation. Figure 1-2 shows land use surrounding the installation.

The installation consists of eight major areas: the Administration Area, Ammunition Demolition Area (ADA), Warehouse Area, Explosives Washout Plant, QA Function Range, Drill and Transfer Area, 11 Igloo Blocks, and a Magazine Area. Specific land use and acreage on UMDA is as follows: ammunition storage (5,933 acres), open space buffer (4,851 acres), ammunition demolition (1,716 acres), chemical storage (646 acres), former firing range (621 acres), airfield (293 acres), standard magazines (140 acres), administrative (136 acres), facilities maintenance (40 acres), spoil areas (32 acres), abandoned landfills (20 acres), housing (15 acres), landfill (15 acres), utilities service area (7 acres), and Union Pacific Railroad leased land (140 acres).

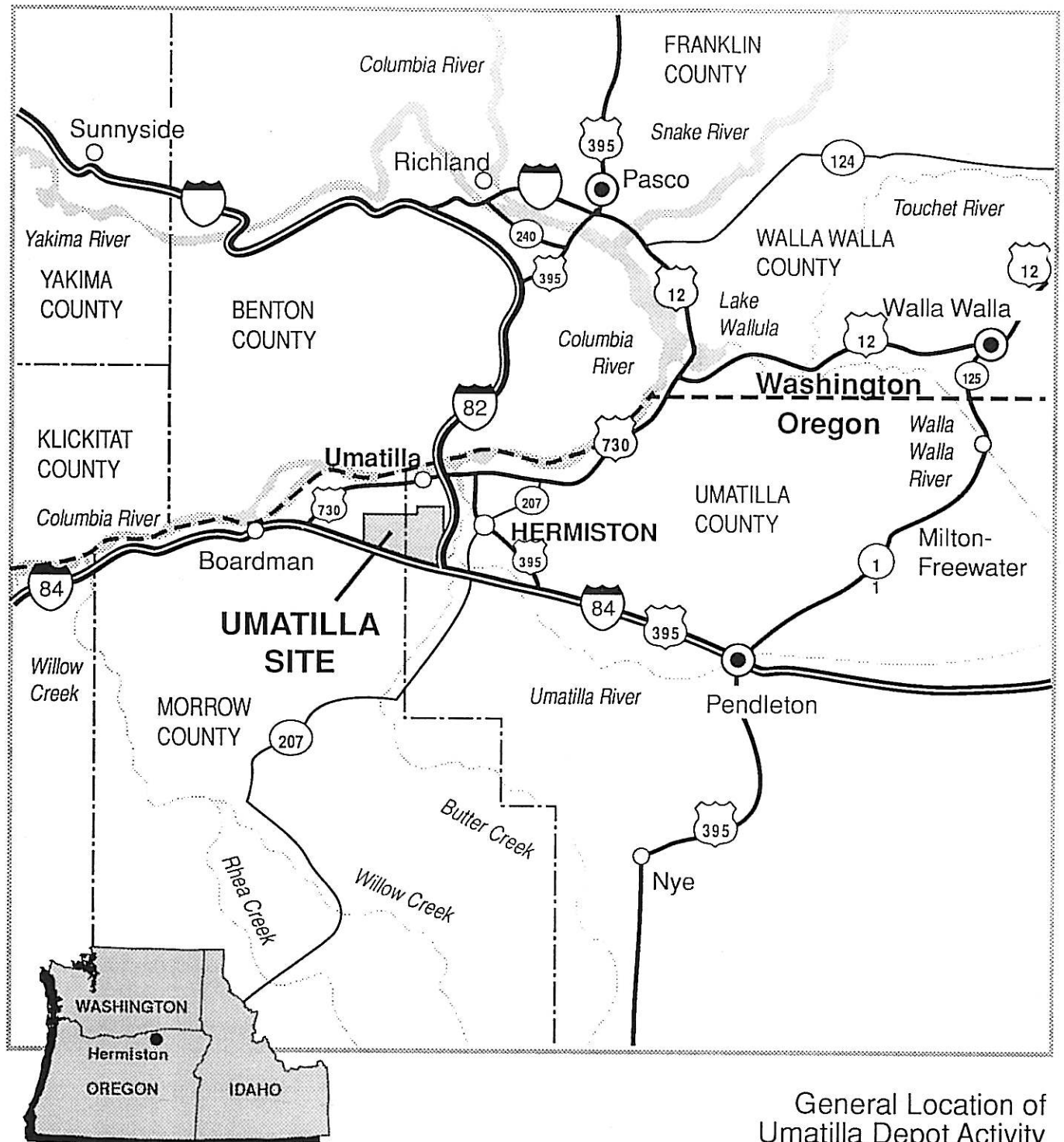
1.4.2 History of Installation

The land currently occupied by the UMDA was originally farmed or idle. The federal government first purchased parcels of land that is now UMDA in 1941 from various owners including Umatilla and Morrow Counties, the Northern Pacific Railroad, and private owners. Parcels were also transferred from the Department of Interior (DOI), Bureau of Land Management (BLM) to the U.S. Army. The construction of 1,001 ammunition storage igloos began in February 1941. By the end of 1941, the Depot began functioning as an ammunition storage facility.

In 1945, ammunition demolition began at the Depot and in 1947, an ammunition renovation complex was constructed. Two ammunition maintenance buildings were added in 1955 and 1958. Chemical agent-filled munitions and one-ton containers of chemical agents have been stored in the K block igloos and Building 659 at UMDA since 1962. No chemical weapons have been used, manufactured, or tested at the Depot. In addition to the chemical munitions, conventional munitions are stored in 14 magazines and the igloos in A-J blocks. Missiles and missile fuel components were stored at the Depot from the mid-1950s to the early 1960s.

No manufacturing operations have been conducted at UMDA. However, munitions testing, rework, demolition, and disassembly operations have been performed in several areas throughout the Depot. The Explosives Washout Plant area, located in the central portion of UMDA and the ADA Area located along the western boundary of UMDA, are the most noteworthy of these areas.

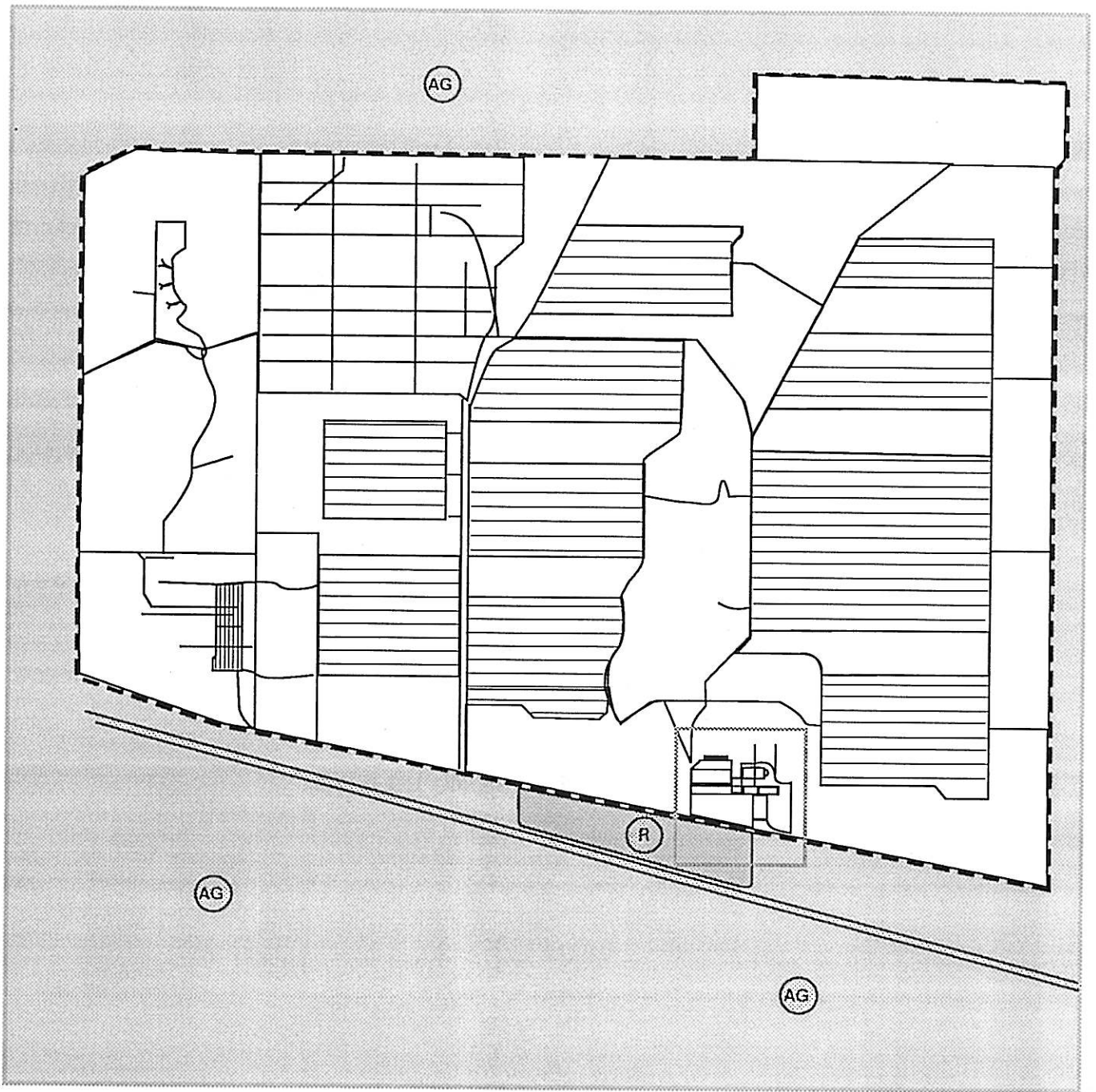
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General Location of Umatilla Depot Activity

Figure 1-1

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EXPLANATION

-  Residential
-  Agricultural
-  Installation Boundary

Surrounding
Off-Post
Land Use

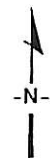


Figure 1-2

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In August 1973, the installation was redesignated as an "Activity" by the U.S. Army Materiel Command. The installation was designated for realignment in 1988. The realignment consisted of shifting the conventional ordnance mission from UMDA to the Hawthorne Army Ammunition Plant and the destruction of conventional ordnance that could not be transferred safely. UMDA's current, realigned mission is the ongoing static storage of chemical munitions. Realignment at UMDA officially began on September 30, 1991 and ended on September 30, 1994.

A historical property acquisition summary is provided in Table 1-2. The tract designations were taken from the Final Project Ownership Map, Drawing SE-RE-720, Real Estate, U.S. Army UMDA. Historical activities conducted at the installation are summarized by time period in Table 1-3.

TABLE 1-2. PROPERTY ACQUISITION SUMMARY

Tract Number	Previous Land Owner	Acreage			Acquisition Date
		Fee Land	Transfer Land	Easement Land	
A	DOI, BLM		6,999.86		June 14, 1941
B	DOI, BLM		160.00		December 26, 1941
C	DOI, BLM		1,280.00		February 10, 1959
1	Umatilla County	323.55			January 10, 1941
2	Umatilla County	320.00			January 10, 1941
20	Umatilla County	160.00			October 24, 1941
4	Morrow County	664.44			January 10, 1941
5	Morrow County	640.00			January 10, 1941
7	Morrow County	560.00			January 10, 1941
8	Morrow County	640.00			January 10, 1941
10	Morrow County	319.95			January 10, 1941
11	Morrow County	320.00			January 10, 1941
13	Northern Pacific Railway Company	667.20			October 4, 1941
14	Northern Pacific Railway Company	640.00			October 4, 1941
15	Northern Pacific Railway Company	640.00			October 4, 1941
16	Northern Pacific Railway Company	367.19			October 4, 1941
17	Northern Pacific Railway Company	640.00			October 4, 1941
18	Northern Pacific Railway Company	83.02			October 24, 1941
19	Northern Pacific Railway Company	320.00			October 24, 1941
3	Western Irrigation Company	135.06			January 10, 1941
6	Marie Alice Hanson	80			January 10, 1941
23E	D.J. Phillips, et ux.			41.32	December 13, 1956
24E	Lawrence P. Doherty			424.25	February 20, 1957
25E	J.A. Robbins, et ux.			640.00	February 20, 1957
26E	Henry C. Vogler, Jr. et ux.			320.00	February 20, 1957
27E	Benjamin E. Conner et ux.			800.00	February 20, 1957
28E	Roger J. Bounds et ux.			143.12	February 20, 1957
29E	Deloss M. Webb et ux.			280.00	May 1, 1958
130E	Lamb-Weston, Inc.			120.00	February 7, 1974
131E	Ronald R. Baker et ux.			40.00	September 6, 1977

TABLE 1-3. HISTORY OF INSTALLATION OPERATIONS

Period	Type of Operation	Weapon System	Hazardous Substance Activities	Map Reference (see Figure 1-3)
Pre-1941	Private, county, and BLM Land	None	None	--
1941-1945	Conventional ordnance storage	None	Ordnance storage area; vehicle maintenance; fuel/oil storage; landfills	1, 2, 3, 4
1945-1947	Conventional ordnance storage/demolition	None	Ordnance storage; vehicle maintenance; fuel/oil storage; landfills; ordnance demolition areas	1, 2, 3, 4, 5
1947-1962	Conventional ordnance storage/demolition/renovation/maintenance	None	Ordnance storage areas; vehicle maintenance; fuel/oil storage; landfills; ordnance demolition areas; ordnance renovation areas; ordnance maintenance areas; machine shop	1, 2, 3, 4, 5, 6, 7, 8,
1962-1994	Conventional ordnance storage/demolition and chemical munitions storage/maintenance	None	Ordnance storage areas; vehicle maintenance; fuel/oil storage; landfills; ordnance demolition; chemical munitions storage areas	1, 2, 3, 4, 5, 9
Present	Depot realigned. Static storage of chemical munitions only	None	Vehicle maintenance; fuel/oil storage; chemical munitions storage	2, 3, 9

1.5 Environmental Setting

This section describes the environmental setting of UMDA including topography, geology, hydrogeology, and surface hydrology.

Topography. The portion of Oregon within an approximate 50-mile radius of UMDA includes parts of two geomorphic regions, the Deschutes-Umatilla Plateau and the Blue Mountains. The Deschutes-Umatilla Plateau is of relatively low relief. It gradually rises southward from elevations near 260 feet at the Columbia River to approximately 800 feet at the base of the Blue Mountains. The edge of the Blue Mountains lies approximately 40 miles south and southeast of UMDA. The Blue Mountains reach elevations ranging from 3,500 to 6,000 feet. The mountains are considerably dissected by streams that have eroded many steep-walled canyons.

Elevations on the Depot range from 400 to 677 feet above sea level. Coyote Coulee, the most prominent surface feature on the Depot, is a valley that cuts across the facility along a north 30° east axis. The western edge of Coyote Coulee slopes at 5 to 10 percent. The eastern edge is an escarpment that rises 60 to 90 feet at a 30 to 45 percent slope. West of Coyote Coulee, the land surface consists largely of rolling hills. East of Coyote Coulee the land slopes gently to the east. The coulee appears to be a large relict sand wave. Its exceptional size is likely due to extraordinary river discharge during prehistoric catastrophic floods.

Geology. Near-surface deposits underlying the bedrock consist primarily of Miocene basalt flows, basalt debris and silts deposited as alluvial fans, Quaternary silts and clays, and Quaternary alluvial gravel and sand deposited by catastrophic flooding of the Columbia River. These catastrophic flood gravels form the surface in a band about 10 miles wide south of the Columbia River including the UMDA property. The flood gravels consist of angular, poorly sorted gravel ranging in size up to large boulders, with coarse sand partly filling the openings between clasts. The gravels have previously been mapped as glaciofluvial or glaciofluvialite and in the vicinity of UMDA are as much as 200 feet thick. They pinch out to the south near an elevation of 750 feet, thin northward from UMDA, and are a few tens of feet thick at places near the Columbia River. These deposits tend to become finer grained with depth, typically grading to sandy or clayey silts near the bottom of the deposits.

Hydrogeology. The flood gravels are the most important aquifer in the lowlands near UMDA. Groundwater is usually unconfined within the gravels. Under such conditions, the upper limit of groundwater is the water table. The water table is free to move up and down in response to changes in recharge and discharge, unlike a confined aquifer whose upper limit is a confining bed with a fixed position. Locally, clay beds may confine groundwater in the gravels. Such confined conditions occur within small areas and restricted vertical intervals. The unconfined aquifer is bounded below by bedrock. The upper part of the bedrock may be fractured and weathered, and thus may be capable of transmitting groundwater. The saturated thickness of the gravel varies according to the elevation of the bedrock surface and the availability of water. Saturated thickness in the area near UMDA ranges from 25 to 100 feet.

Groundwater levels in the flood gravels have been strongly influenced by pumping and other artificial causes. Levels were relatively stable until about 1965, then declined by an average of 16 feet between 1965 and 1973 as irrigation pumping increased. Levels were stable until 1977, and then recovered by about 10 feet between 1977 and 1984. The recovery is apparently in response to reduced pumping and increased natural and artificial recharge.

The direction of groundwater flow in the flood gravels outside UMDA is uncertain. This is in part due to low water-table gradients and a lack of surveyed elevations for wells in the area surrounding UMDA. Interpretation of water levels is greatly complicated by large-scale pumping from, and artificial recharge to, the flood gravels. Some hydrogeologists in the area consider groundwater flow near UMDA to be generally to the northwest.

Potable water for the Depot is supplied by seven U.S. Army-owned wells on the UMDA property. According to well logs, all seven wells are deep wells, installed in the basalt aquifers. The medium depth to groundwater in the basalt aquifer wells is 104 feet.

Surface Hydrology. There are no surface water bodies on UMDA and no surface runoff from the Depot drains to nearby surface water sources. The closest surface water sources are the Columbia River, located 3 miles north of the Depot and the Umatilla River located approximately 4 miles to the northeast.

1.6 Hazardous Substances and Waste Management Practices

A variety of activities involving the handling of hazardous substances and generation of listed hazardous wastes have occurred at UMDA through its history. These activities include fuel oil storage and distribution, motor pool and service station operations, munitions renovation and ammunition maintenance. These activities generated waste petroleum, oil, and lubricants (POL), battery acid, solvents, paints, and pesticides. Renovation of conventional munitions also generated the following hazardous wastes: red fuming nitric acid, aniline, explosive contaminated rinsewater, and solvents. Other hazardous wastes generated at the installation include expired ordnance, and ordnance propellant.

Recognized past waste disposal practices at UMDA have included the disposal of red fuming nitric acid, aniline, and pesticides into pits, burning of ordnance propellant in burning pans; and demolition of expired ordnance in covered pits. In the Explosives Washout Plant Area, explosive contaminated rinsewater was allowed to evaporate in unlined lagoons. These activities were conducted in the Ammunition Demolition Activity Area. In addition, landfilling of solid waste has occurred in several locations at UMDA. There are five small inactive landfills at the Depot and the active landfill no longer accepts solid waste. At this time, the active landfill accepts only solidified soil from the remediation activities on the Depot. Releases to the environment which have occurred as a result of these various historical disposal activities are being addressed under the ongoing BRAC environmental restoration program.

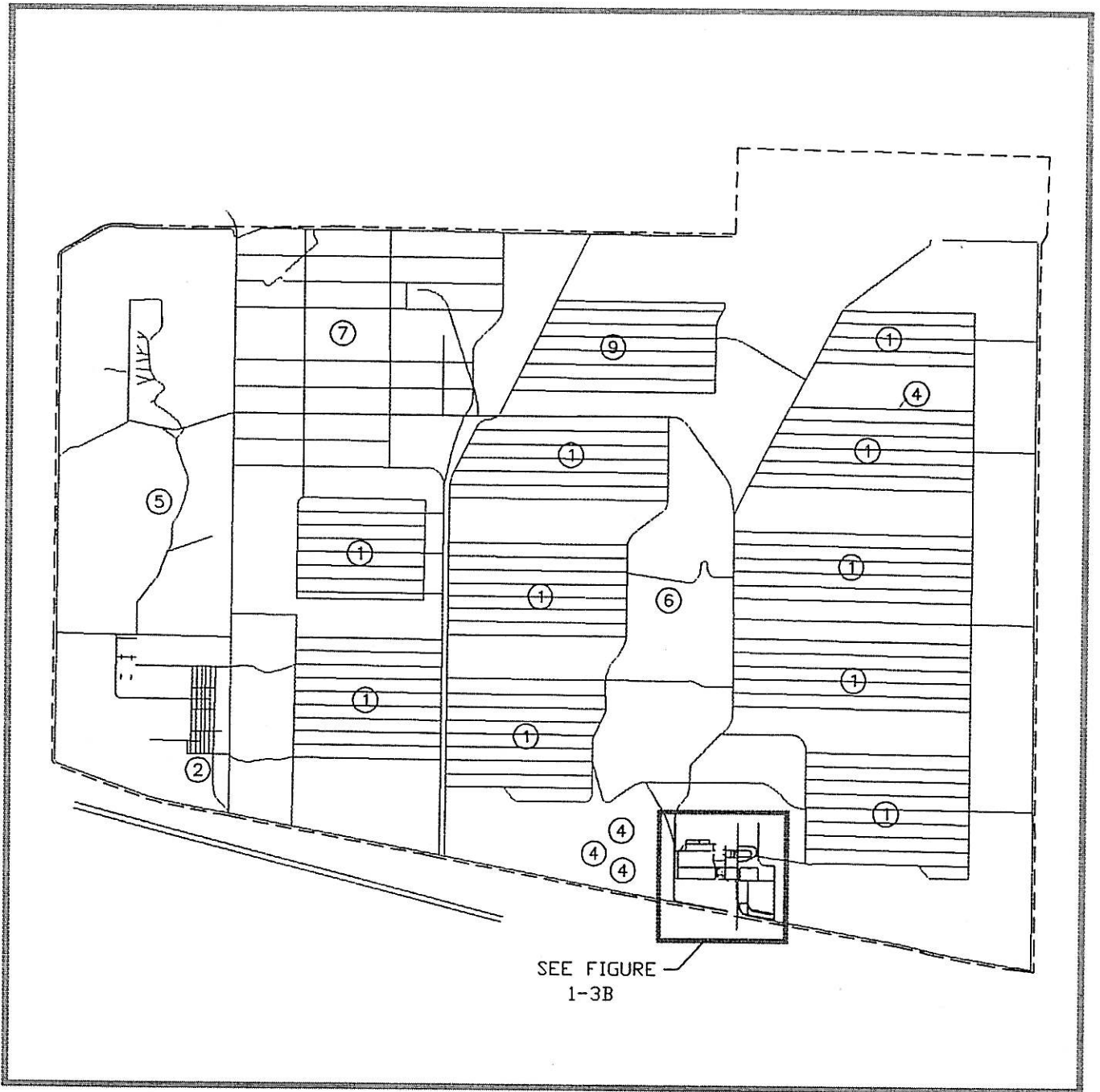
Table 1-4 identifies the hazardous substance activities conducted at UMDA. Figures 1-3A and 1-3B show the location of these past hazardous substance activities. Table 1-5 outlines the current hazardous waste generating activities at UMDA.

TABLE 1-4. HAZARDOUS SUBSTANCE ACTIVITIES AT UMDA

Hazardous Substance Activity	Map Reference (see Figure 1-5)
Ordnance Storage	1
Vehicle Maintenance	2
Fuel/Oil Storage	3
Landfilling	4
Ordnance Demolition	5
Ordnance Renovation	6
Ordnance Maintenance	7
Machine Shop Operation	8
Chemical Munitions Storage	9

1.7 Off-Post Property/Tenants

Off-Post Properties. There are no off-post properties currently owned by UMDA nor are there any anticipated in the future. In the unlikely event that off-post properties are acquired by UMDA in the future, these properties will be identified in Table 1-6 and Figure 1-4.



EXPLANATION

- ① Designation of Activity Location*
- Installation Boundary

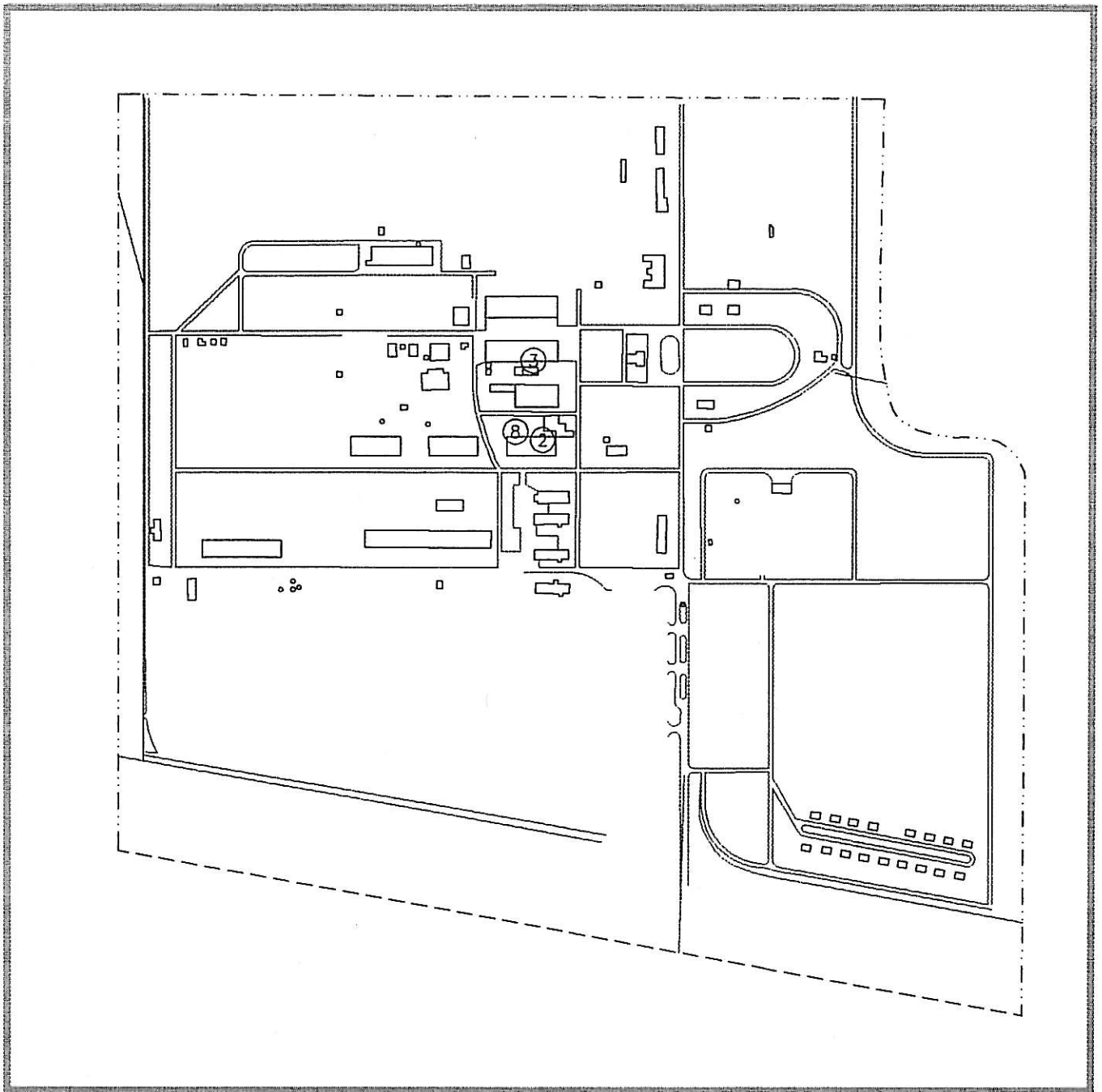
Location of Past
Hazardous
Substance
Activities



Figure 1-3A

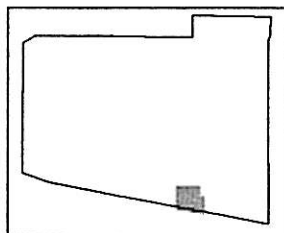
* See Table 1-3 for activity number designations

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EXPLANATION

- ① Designation of Activity Location*
- Installation Boundary
- · - Administration Area Boundary



Location of Past
Hazardous
Substance
Activities
in
Administration
Area



Figure 1-3B

* See Table 1-3 for Activity Number Designations

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TABLE 1-5. HAZARDOUS WASTE GENERATING ACTIVITIES

Facility	Unit	Activity	Name of Waste Material	Generation Rate	Disposition
Vehicle Maintenance Garage, Building 5	GOCO	G, AS	Paint waste/thinner	650 lbs/yr	DRMO
Carpenter Shop, Building 7	UMDA	G, AS	Paint waste/thinners	900 lbs/yr	DRMO
Chemical Laboratory, Building 656	UMDA	G, AS	Chemical Agent related wastes	Unknown	Storage in J-Block

Key: G = Generator
AS = Satellite Accumulation
DRMO = Defense Reutilization Marketing Office
GOCO = Government-owned, Contractor-operated
ST = Short Tons

TABLE 1-6. OFF-POST PROPERTIES

Description	Acreage	Date of Acquisition	Environmental Status	Location	Remarks
	There are currently no off-post properties associated with UMDA. Future changes will be reflected here.				

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**There are currently no Off-Post
Properties associated with Umatilla
Depot Activity. Future changes will be
reflected here.**

Off-Post Properties

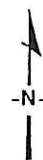


Figure 1-4

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1.8 Tenant Units

Table 1-7 lists the significant tenant organizations on the installation that were identified from installation real property records and tract maps. The Medical Detachment (headquartered at Fort Lewis, WA), Defense Logistics Agency, the Federal Contracting Corporation, and the U.S. West Communications, Inc. provide support to the Depot. The Oregon National Guard leases a space for equipment storage and motor pool facilities and the Union Pacific Railroad leases the railroad tracks on the Depot for railroad car storage. None of the tenant units have conducted significant industrial operations at UMDA.

TABLE 1-7. ON-POST TENANT UNITS

Tenant	Building
Oregon National Guard	115 and part of 52
Defense Logistics Agency	42 and part of 18
Union Pacific Railroad	Railroad tracks in southern portion of Depot
U.S. West Communications, Inc.	2
Federal Contracting Corporation	5
Medical Detachment (out of Fort Lewis, WA)	11

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