Overall Management Plan

Installation Restoration Program (IRP)

Griffiss Air Force Base

Prepared for

416th Combat Support Group



416th Bombardment Wing (SAC)

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1.0 Executive Summary

The purpose of this Overall Management Plan is to review the status of thirty-five (35) identified IRP sites, provide a mechanism for updating and maintaining status information, evaluate these sites for regulatory requirements, and prioritize activities in order to meet the objective of removing Griffiss AFB from the NPL.

It is estimated to take up to 24 months to provide the RI/FS document required by EPA and at least an additional 18-24 months after EPA reaches a Record of Decision to remediate those sites in the RI/FS. Based on a similar Air Force Base, the RI/FS document is expected to cost $1-1.5 million and the total effort of removing Griffiss AFB from the NPL will exceed $3.0 million, and will take 3-5 years.

Section 3.0 of this document presents the status of each of the sites and a mechanism for keeping that status current. Sections 4.0 and 5.0 present the activities necessary to prepare an RI/FS and Section 6.0 prioritizes those activities with the critical path being to initiate a basewide hydrogeological study as soon as possible, followed by the RI/FS activities.

2.0 Introduction

This section is intended to familiarize the reader with the objective of this document, the background of Griffiss AFB, a description of the installation along with its environment and hazardous waste practices, and the scope of this document.

2.1 Objective

The objective of this document is to provide the U.S. Air Force Strategic Air Command (HQ SAC/DEPV) a comprehensive overall Management Plan that identifies the prioritized requirements necessary to remove Griffiss Air Force Base (GAFB), New York from the National Priority List (NPL).

2.2 Background

Griffiss AFB was activated February 1, 1942 and is named for Lt. Col. Townsend E. Griffiss who was killed in an aircraft accident February 15, 1942. Lt. Col. Griffiss was the first United States airman to lose his life in Europe in the line of duty.

Griffiss AFB was established and has remained a "bomber" base and part of the "Eighth Air Force" of Strategic Air Command.

2.3 Installation Description

Griffiss Air Force Base is located in central New York State, approximately two miles northeast of Rome, Oneida County, New York (Figures 2.1 and 2.2). The base proper covers (Figure 2.3) approximately 3900 acres and is situated in the broad, relatively flat valley of the Mohawk River at an altitude of 504 feet. Besides the main base, there are 11 annexes that are part of the Griffiss Air Force Base facilities. Two of these annexes are dedicated to base support and the remaining nine are utilized for research and development purposes by the Rome Air Development Center of the Air Force Systems Command. The locations of the annexes are shown in Figure 2.4.

The 416th Bomb Wing is the host unit at Griffiss Air Force Base under the supervision of Strategic Air Command (SAC). The Wing's mission is the maintenance and implementation of effective air refueling operations, while providing long-range bombardment capability on a global scale. The 416th Bomb Wing is composed of two operational squadrons, six maintenance and support squadrons, and the 416th Combat Support Group.

In addition to the Rome Air Development Center, other major units are Headquarters 24th Air Division of Tactical Air Command which includes the Northeast Air Defense Sector, the 485th Engineering installation group of Air Force Communications Command, and the 933rd Civil Engineering Squadron of the Air Force Reserve.

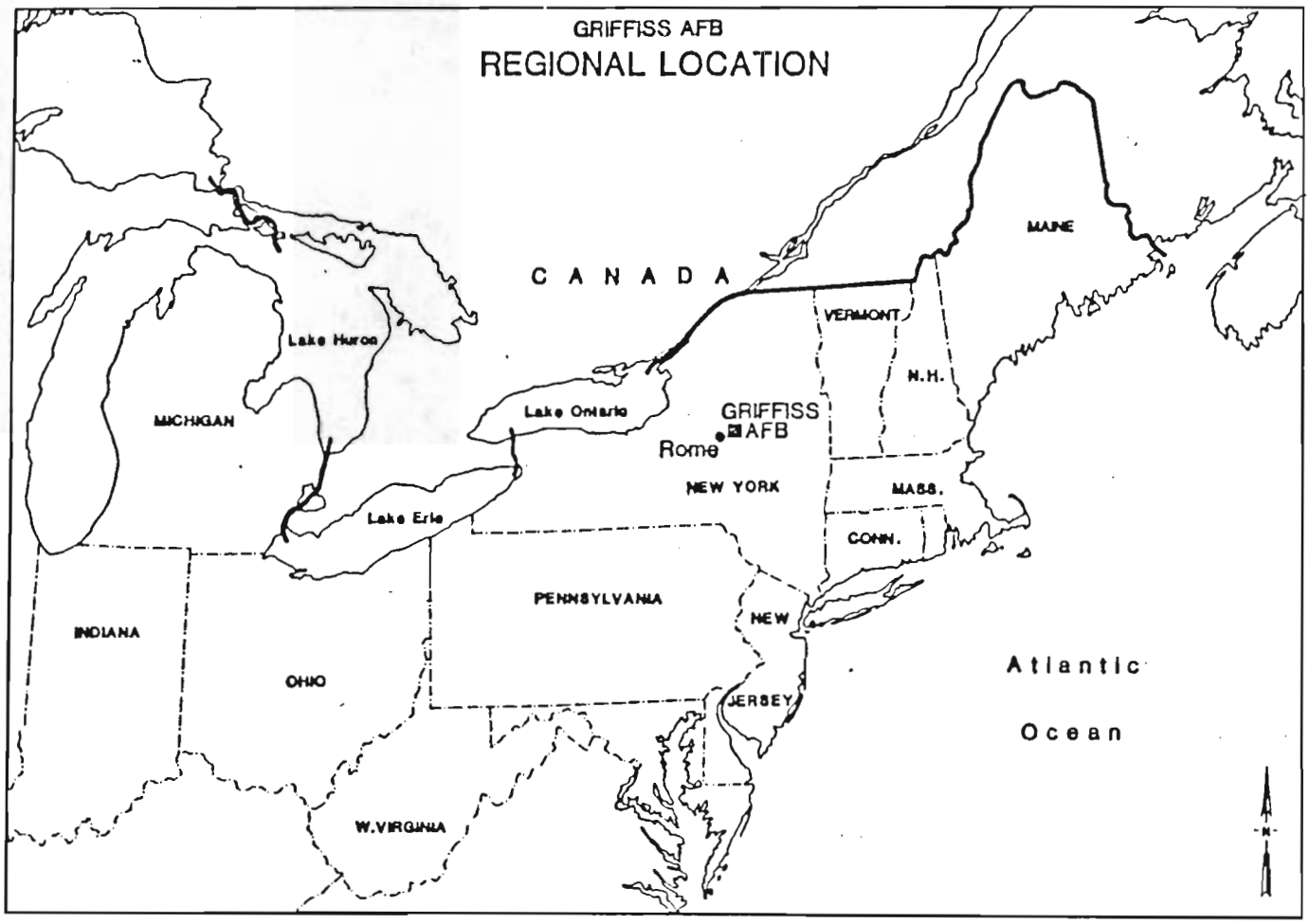


Figure 2.1 Griffiss AFB - Regional Location

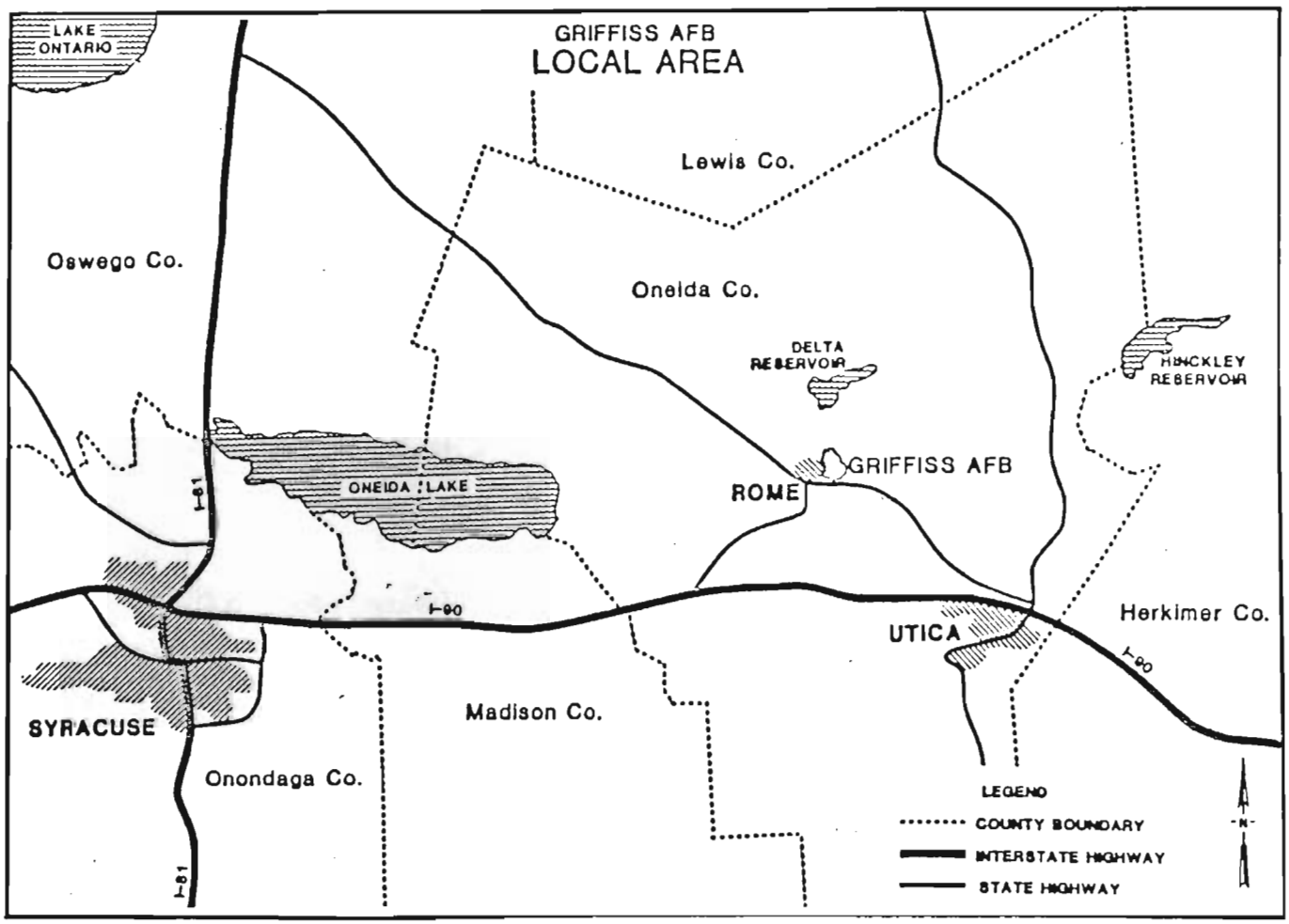


Figure 2.2 Griffiss AFB - Local Area

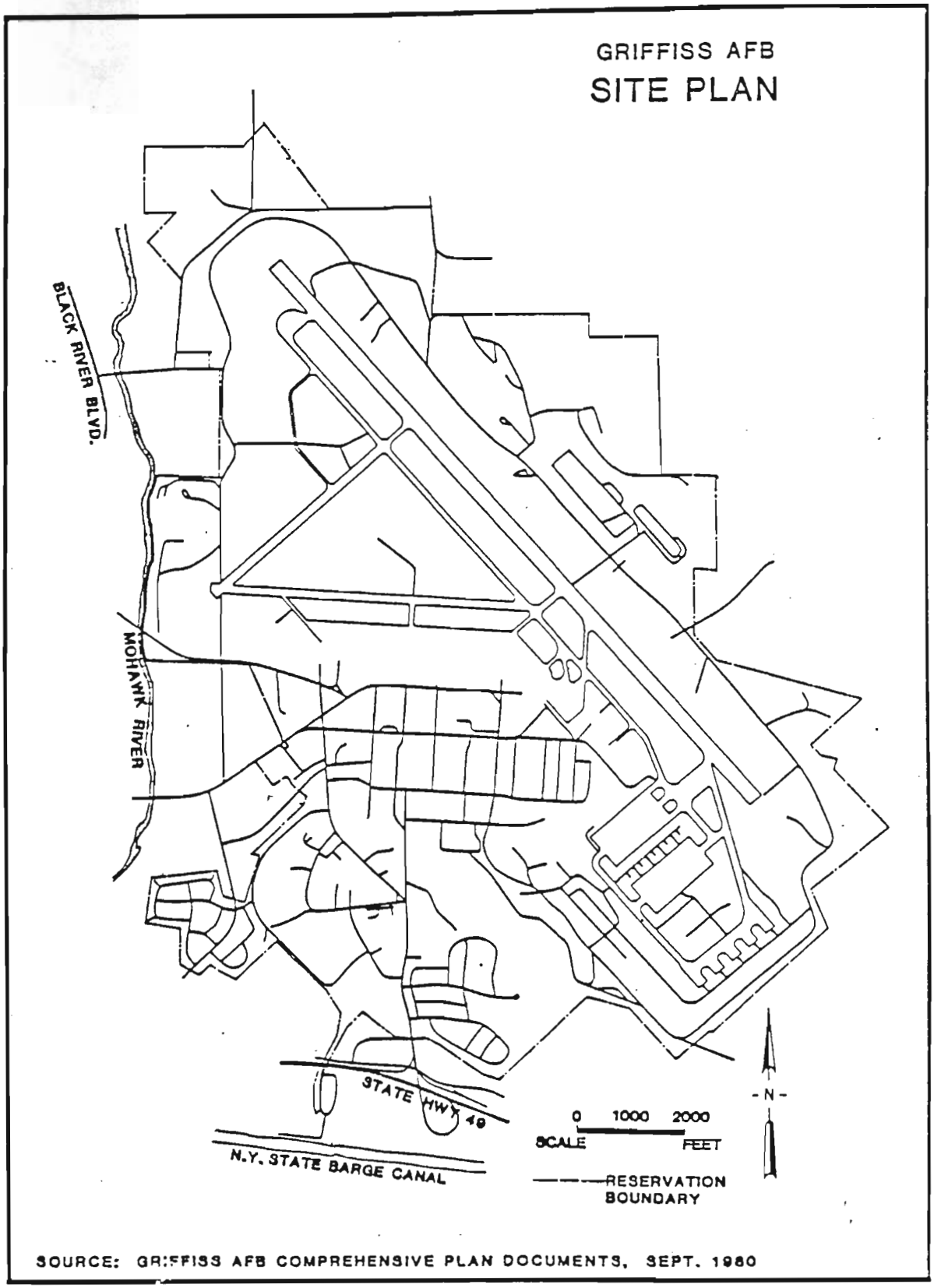


Figure 2.3 Griffiss AFB - Site Plan

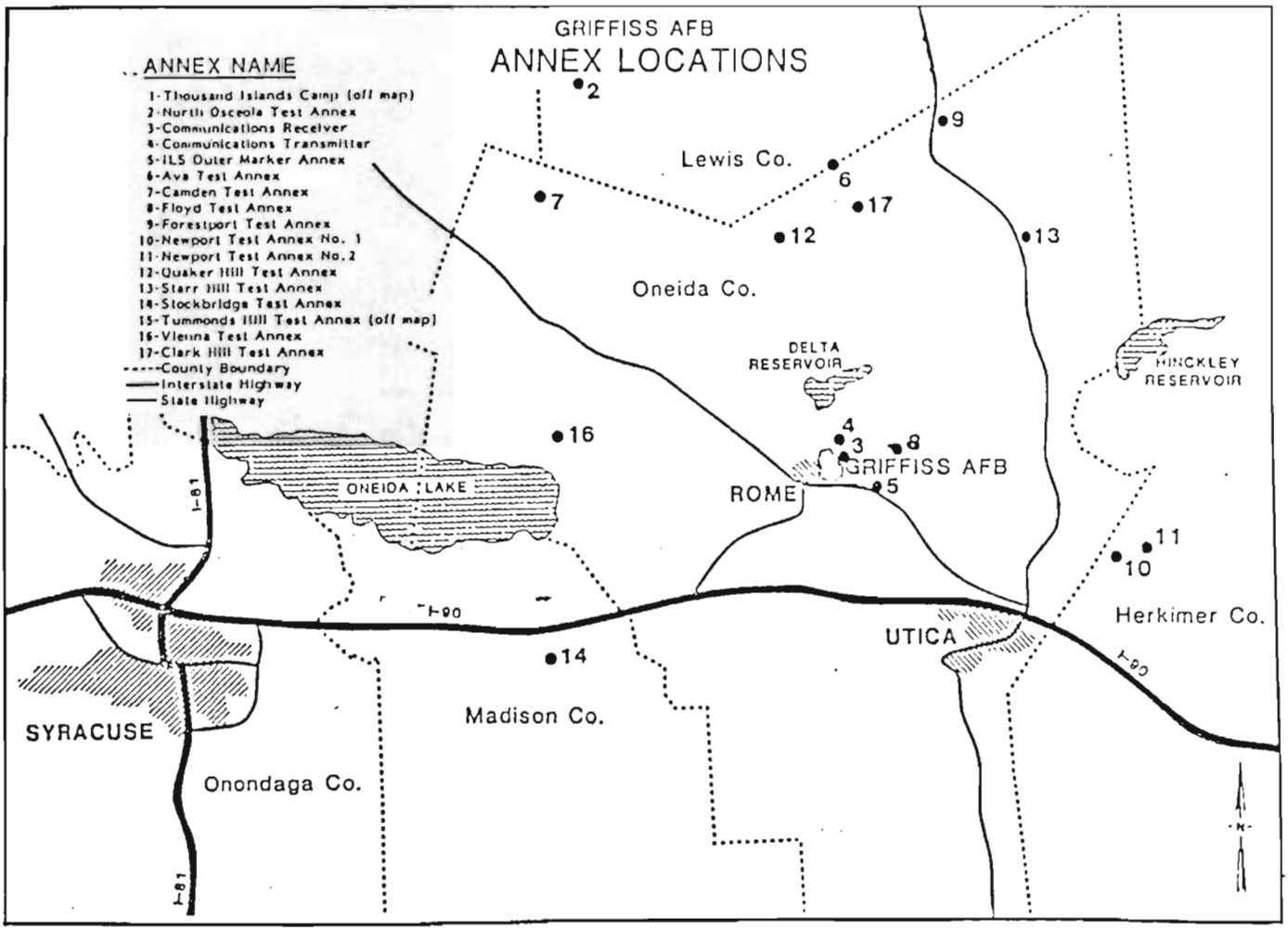


Figure 2.4 Griffiss AFB - Annex Locations

Because of its host position, the 416th Bomb Wing is responsible for support of the various tenant units on Griffiss AFB. This responsibility includes law enforcement, health care, administration, civil/environmental engineering, commissary, and other services and facilities for approximately 4500 military and 3200 civilian personnel.

2.4 Environmental Setting

The overall environmental setting of Griffiss Air Force Base is in this section with the primary emphasis directed toward identifying features that could transport hazardous waste contaminants on or off the base.

2.4.1 Meteorology

Precipitation and snowfall data furnished by Detachment 8, 26 Weather Squadron, Griffiss Air Force Base are summarized in Table 2.1. Mean annual precipitation is 45.6 inches, and mean annual snowfall is 107 inches. The evapotranspiration rate for the area is approximately 23 inches. Winter weather generally occurs between mid-December and mid-March with temperatures normally around 20°F. The spring, summer and fall are relatively mild with temperatures ranging from 31°F to 81°F. Wind speed averages 5 knots from the southwest.

2.4.2 Geography

Griffiss Air Force Base is located within the Mohawk Valley, a feature of the Ontario-Mohawk Lowland, which comprises the eastern-most extremity of the Central Lowland physiographic region. The Mohawk Valley forms a trough between the north margin of the Appalachian Plateau to the south and the Adirondack Mountains to the north. The Mohawk Valley is conspicuous due to a general absence of relief.

2.4.3 Topography

Topography of the Griffiss Air Force Base area is due primarily to the deposition and subsequent erosion of glacial and alluvial sediments (from the now extinct Glacial Lake Iroquois) resting upon nearly flatlying bedrock. The generally flat topography is typical of the region, with no dominant hills present and elevations averaging 500 feet above sea level. The Mohawk River Basin which has a drainage area of 3,456 square miles includes three streams draining the immediate area of the installation: the Mohawk River, Six Mile Creek and Three Mile Creek. The Mohawk flows southward along the west installlation boundary, changing to an eastward course at a point southwest of the base. Both Three Mile and Six Mile Creeks follow generally southward courses, intersecting the Mohawk just to the south of Griffiss Air Force Base (Figure 2.5). Much of the

Table 2.1

PRECIPITATION AND SNOWFALL DATA
GRIFFISS AFB

Month	Precipitation (In)				Snowfall (In)		
	Monthly				Monthly		
	Mean	Max	Min	Max 24 Hrs	Mean	Max	Max 24 Hrs
JAN	4.0	7.6	1.5	2.9	27	63	15
FEB	3.7	8.0	1.8	2.1	25	46	24
MAR	3.3	6.4	.8	2.3	17	41	13
APR	3.8	6.0	1.7	2.1	2	11	5
MAY	3.9	7.1	.8	2.7	*	6	3
JUN	3.8	9.9	.9	3.1	0	0	0
JUL	3.9	7.5	1.4	3.9	0	0	0
AUG	3.5	7.9	1.4	2.6	0	0	0
SEP	3.8	9.3	.8	2.5	0	0	0
OCT	3.4	8.7	.3	3.0	*	1	1
NOV	4.3	8.7	1.0	3.1	9	21	7
DEC	4.2	7.2	.9	3.0	27	54	15
ANNUAL	45.6	9.9	.3	3.9	107	63	25

Note: Indicated period of record is 35 years.

* Data not available.

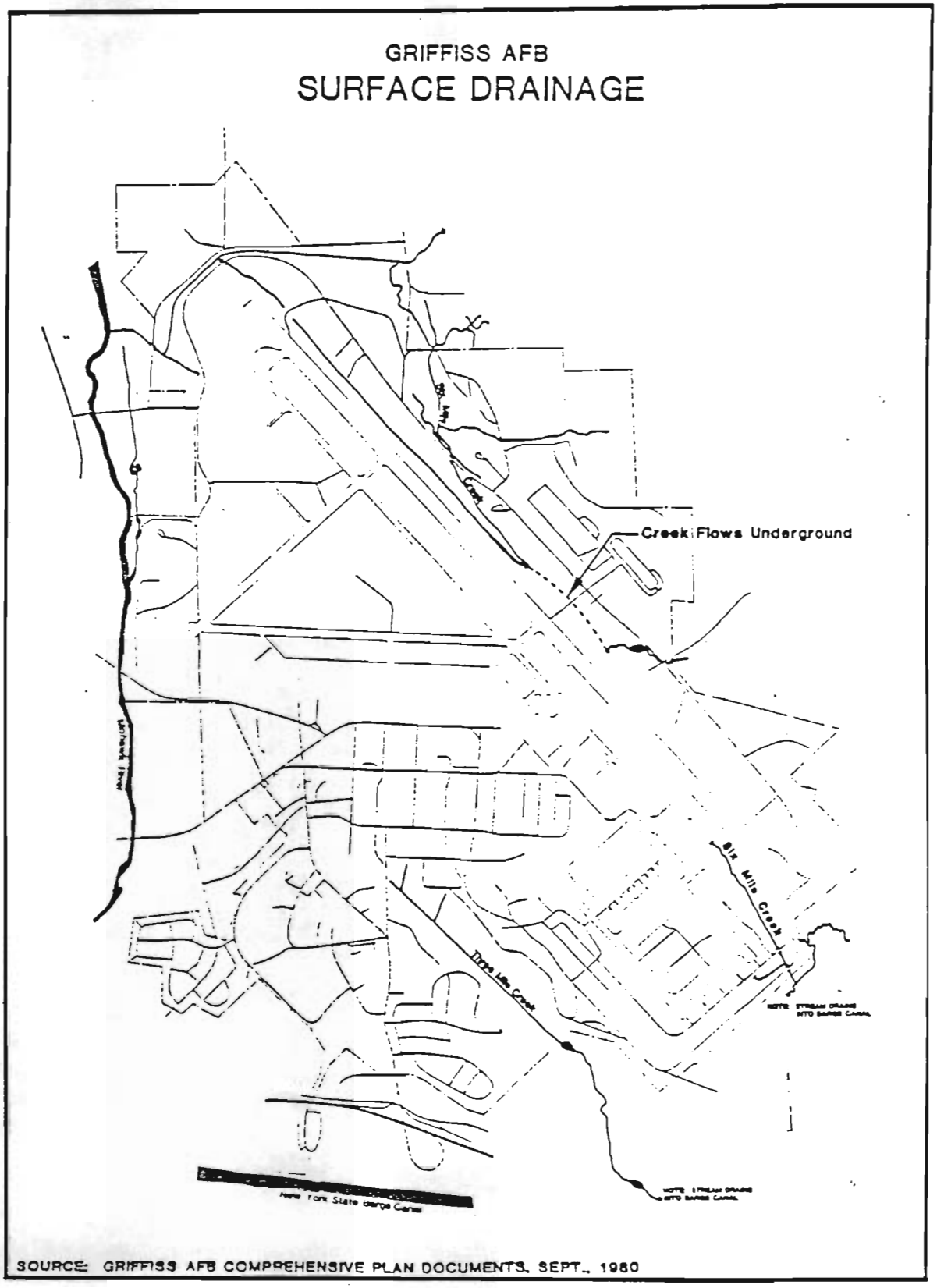


Figure 2.5 Griffiss AFB - Surface Drainage

Mohawk River has been channelized to form part of the New York State Barge Canal System, which extends from the Hudson River to Lake Erie.

Streamflow is primarily the result of runoff in the Griffiss area. Many local Streams are reported to run dry during summer months due to typically reduced precipitation. Flooding is not a significant problem for the Griffiss Air Force Base Area. Flooding of local streams is normally confined to stream channels. The flow of the Mohawk River north of Griffiss is regulated by the dam at the Lake Delta Reservoir. Below Griffiss the Mohawk becomes part of the Barge Canal System and the river flow is regulated by a system of locks.

2.4.4 Surface Geology

The surface geology of the installation area is two distinct soil units, both of glacial origin (Figure 2.6). The Peistocene age lacustrine and recent alluvial deposits are essentially fine-grained stratified deposits of fine sands, sandy silts, silts, sandy clays and clays that are typically confined to lowland areas and existing or former stream channels and alluvial deposits are associated with modern stream channel development. The unit varies in thickness from 70 to 150 feet where present.

Pleistocene age glacio-fluvial and deltaic deposits consist of medium- to coarse-grained sands and gravels associated with glacial activity. The fluvial and deltaic materials are generally confined to upland areas, are stratified and vary in thickness from 10 to 140 feet.

In general, soils within the base boundaries, with the exception of wet areas and stream channels, tend to be sandy and moderately well-drained.

2.4.5 Subsurface Geology

The only significant consolidated geologic unit present at Griffiss Air Force Base is the Ordovician Age Utica Shale. The Utica is a relatively soft, black and gray carbonaceous shale containing calcareous argillites. Typically, the Utica varies in thickness from 300 to 400 feet. Faulting of this unit is not directly observable as considerable overburden conceals discontinuities. The relationship between earthquake activity and locally mapped lineaments and faults is unknown; however, numerous small, non-damaging earthquakes have occurred in central New York.

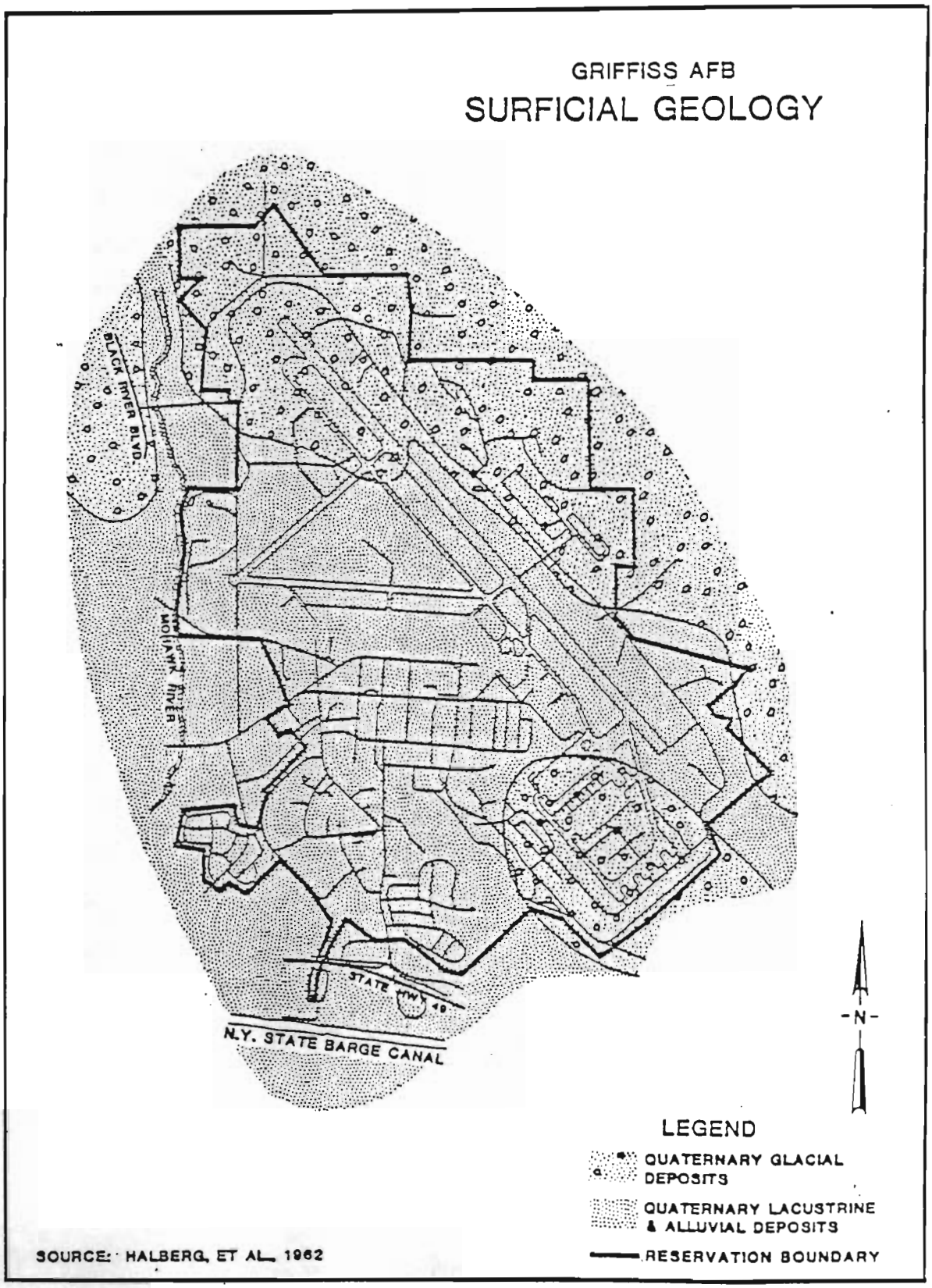


Figure 2.6 Griffiss AFB - Surficial Geology

Sedimentary strata of the Rome area are known to be jointed. The joint planes are oriented north, west and southwest, with the predominant direction being east or southeast along the Mohawk Valley. Joint planes tend to be vertical or nearly vertical.

2.4.6 Groundwater

The actual groundwater flow directions for the Griffiss Air Force Base area are undefined. Similarly, groundwater flow velocities and other physical characteristics of local aquifers have not been determined.

It has been stated that one reason for a lack of groundwater resources data has been the region's traditional dependence on surface water supplies and the lack of regulations requiring the permitting of industrial or domestic supply water wells. It is estimated that approximately 95 percent of the region's water supplies are derived from surface sources. Groundwater sources are primarily utilized by individuals in areas not served by regional or community systems such as the sparsely populated town of Floyd, or by farmers for irrigation purposes.

Most of the Griffiss Air Force Base area appears to lie within a groundwater recharge area and the following hydrogeologic units appear to be present in the area which correspond directly to the geologic units described:

- Quaternary lacustrine and alluvial deposits comprise an unconsolidated, unconfined aquifer made up of primarily fine-grained sediments. It varies in thickness from 70 to 150 feet. Wells screened into this unit average 68 feet in depth. The well yield ranges from 2 to 40 gallons per minute, averaging 11 gpm. Water derived from this unit is of variable quality, and is usually hard.

- Quaternary glacial deposits make up an unconsolidated unconfined aquifer comprised of primarily coarse-grained sediments. It varies in thickness from 10 to 140 feet. Wells screened into this unit average 67 feet in depth. This is the most productive aquifer of the region, with typical yields varying from 10 to 290 gallons per minute, averaging 80 gpm. The water is reported to be of good quality.

- Utica shale comprises a consolidated, usually unconfined aquifer containing water in weathered upper zones, in joints, bedding planes and in secondary fissures. This unit may function under confined (artesian) conditions locally. The unit ranges in thickness from 300 to 400 feet and typically yields from 0.5 to 48 gallons per minute, averaging 7.5 gpm. Water supplies are normally drawn from upper reaches of this unit since reliability declines with

depth, and lower elevations may be naturally contaminated by salts, hydrogen sulfide or methane.

The unconsolidated hydrogeologic units receive recharge from precipitation and from streamflow in dry periods. The unconsolidated aquifers serve as both recharge and storage units for the underlying rock aquifer. Groundwater levels in the Rome-Utica area are reported to fluctuate seasonally from 3 to 15 feet per year.

2.4.7 Surface Water

The New York State Department of Environmental Conservation has primary regulatory responsibility for the maintenance of water quality in the Griffiss Air Force Base area. Section 17-0301 of the State Environmental Conservation Law (Classification of Waters and Adoption of Standards) sets forth the legislative authority for both the assignment of stream classifications for all the waters of the state and the adoption of standards applicable to those classifications. The existing standards applicable to all classes of waters are set forth in Part 700-703, Title 6, Official Compilation of Codes, Rules and Regulations. Waters of the Mohawk-West Canada Creek Planning Area are classified according to the following schedule, based upon utilization:

Classification	Utilization
AA	Water Supply - no discharges permitted
A	Water Supply
B	Bathing
C (T)	Fishing - trout stream
C	Fishing
D	Secondary contact recreation

The above classifications are subject to review every three years, or on an interim basis when circumstances warrant such a review.

Waters adjacent to and flowing within the limits of Griffiss Air Force Base are classified as follows:

Classification	Utilization
C	Mohawk River, from Lake Delta to Rome/Floyd boundary
B	Mohawk River, east of Floyd boundary
C	Six Mile Creek, 0.0 miles to Tributary 2
C (T)	Six Mile Creek, Tributary 2 to Tributary 4
D	Six Mile Creek, Tributary 4 to Tributary 6 (within Griffiss AFB)
C (T)	Six Mile Creek, from installation to Mohawk River
D	Three Mile Creek, entire length

Note: The State of New York DEC identifies Six Mile Creek as Tributary No. 231 of the Mohawk and Three Mile Creek as Tributary No. 234 of the Mohawk River.

Water quality monitoring of surface water at Griffiss Air Force Base is conducted by Air Force personnel in order to comply with State Pollutant Discharge Elimination System (SPDES) regulations, to determine the environmental impact of installation activites as mandated by applicable Air Force Regulations, and to comply with EPA directives relative to the discharge of leachate from Landfill No. 1.

Griffiss Air Force Base currently maintains two SPDES permits. Permit No. NYD070860507 is applicable to the main installation. SPDES Permit No. NY0037371 is applicable to the Verona Test Annex water treatment plant outfall.

Surface water quality monitoring is also performed by the State of New York Department of Environmental Conservation at selected locations in order to check STP efficiency and to comply with provisions of the Federal Clean Water Act (FCWA). The sampling point in closest proximity to Griffiss Air Force Base is located at the Mohawk River at Canal Gate 6, southwest of the installation.

As of February 1988, the New York Department of Environmental Conservation has identified the following non-installation discharge sources to surface waters adjacent to Griffiss Air Force Base:

Discharger	Type	Capacity (MGD)	Effluent	Receiving Waters
Rome STP*	STP*	9.0	Secondary Treat	Mohawk River-Barge Canal
Revere Copper & Brass Rolling Mill	IND+	8.26	Process & Cooling	Barge Canal
Revere Ware	IND	0.8	Cooling	Barge Canal
Rome Cable	IND	1.79	Process & Cooling	Wood Creek to Oneida River

* Sewage Treatment Plant
\+ Industrial Waste

2.4.8 Wetlands

The State of New York Department of Environmental Conservation has designated certain areas of Griffiss AFB as Wetlands. These areas are east of the primary runway and in the southern portion of the base (Figure 2.7).

2.5 Hazardous Waste Practices (IRP)

Griffiss Air Force Base (GAFB), operating under the Environmental Installation Restoration Program (IRP) since 1976, has taken a leading role to reduce the impact to the environment from hazardous wastes associated with the base. During this time 35 sites on the base (Table 2.2 and Figure 2.8) having known or potential hazardous waste contamination have been identified. Of these sites, six were investigated and no contamination was found; approximately 19 have had remedial action performed; and 13 are currently being monitored for potential contaminant migration. To date, 59 monitoring wells have been installed and most are being sampled semi-annually. More detailed information is in the IRP Phase I & II documents.

2.6 Scope

This document is a compilation of the following efforts:

2.6.1 A thorough review of existing Griffiss AFB environmental and hazardous waste records to determine the status of each of the identified IRP sites (Section 3.0).

2.6.2 A comparison with existing Environmental Protection Agency (EPA) evaluation of the IRP sites and a determination of the actions necessary for each site (Sections 4.0 and 5.0).

2.6.3 Prioritization of those actions and compilation of them into an Overall Management Plan (a road map) for removing Griffiss AFB from the National Priority List (NPL) (Section 6.0).

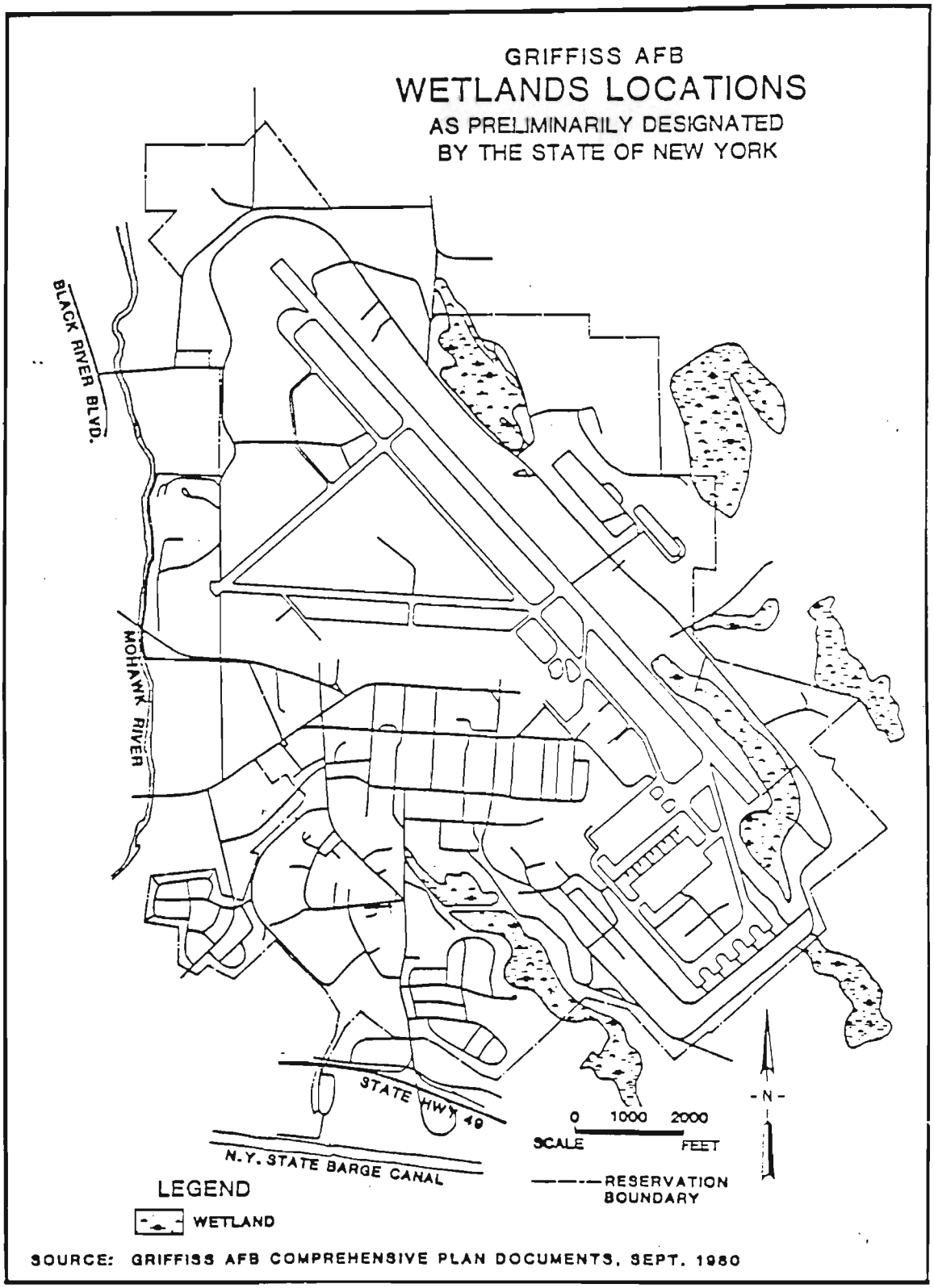


Figure 2.7 Preliminary Wetlands Location

Table 2.2. IRP Sites at Griffiss Air Force Base

Number	Site Name	Status
1	Landfill No. 1	RA[a]-1985, Monitoring
2	Landfill No. 2	RA-1984, Monitoring
3	Landfill No. 7	RA-1985, Monitoring
4	Bulk Fuel Storage Area (Barge Canal)	RCRA Site
5	Lindane Spill at Former Entomology Storage Building	No Detected Contamination
6	Building 101 Yello Submarine Holding Tank	Inoperable
7	Landfill No. 5	Monitoring
8	Building 112 PCB Dump Area	RA-1986
9	Landfill No. 6	Monitoring
10	Building 117 Drywell (Steam Plant)	RA-1986
11	Building 3 Drywell	RA-1987
12	Building 301 Drywell (Entomology Shop)	No Detected Contamination
13	Building 225 Drywells (Two)	Drywells Not Found
14	General Chlordane Application	Discontinued Use in 1981
15	Building 219 Drywell	Drywell Not Found
16	PCB Spill at Floyd	RA-1981
17	Lot 69 Hazardous Waste Storage Area	Discontinued Use
18	Building 101 Waste Oil Storage Area	RCRA Site
19	Building 112 PCB Leak (See Site No. 8)	RA-1985
20	Tank Farm Nos. 1 and 3	RA-1986
21	Building 210 Underground Storage Tank	RA-1984
22	Building 222 Battery Acid Disposal Pits	RA-1985
23	Building 20, Locomotive Roundhouse	RA-1985
24	Fire Demonstration Area	Monitoring
25	T-9 Storage Area	Monitoring
26	Building 43 Refueling Station	Monitoring
27	Building 101 Battery Acid Disposal Pits	RA-1985
28	Landfill No. 4	RA-1977, No Monitoring
29	Landfill No. 3	RA-1984, See Site No. 2
30	Fire Training Area	RA-1985
31	Three Mile Creek	Monitoring
32	Six Mile Creek	Monitoring
33	Coal Yard PCB Contamination	RA-1988
34	Building 786 Contamination	RA-1988
35	Building 26 Underground Storage Tank	RA-1988

[a]RA - Remedial Action

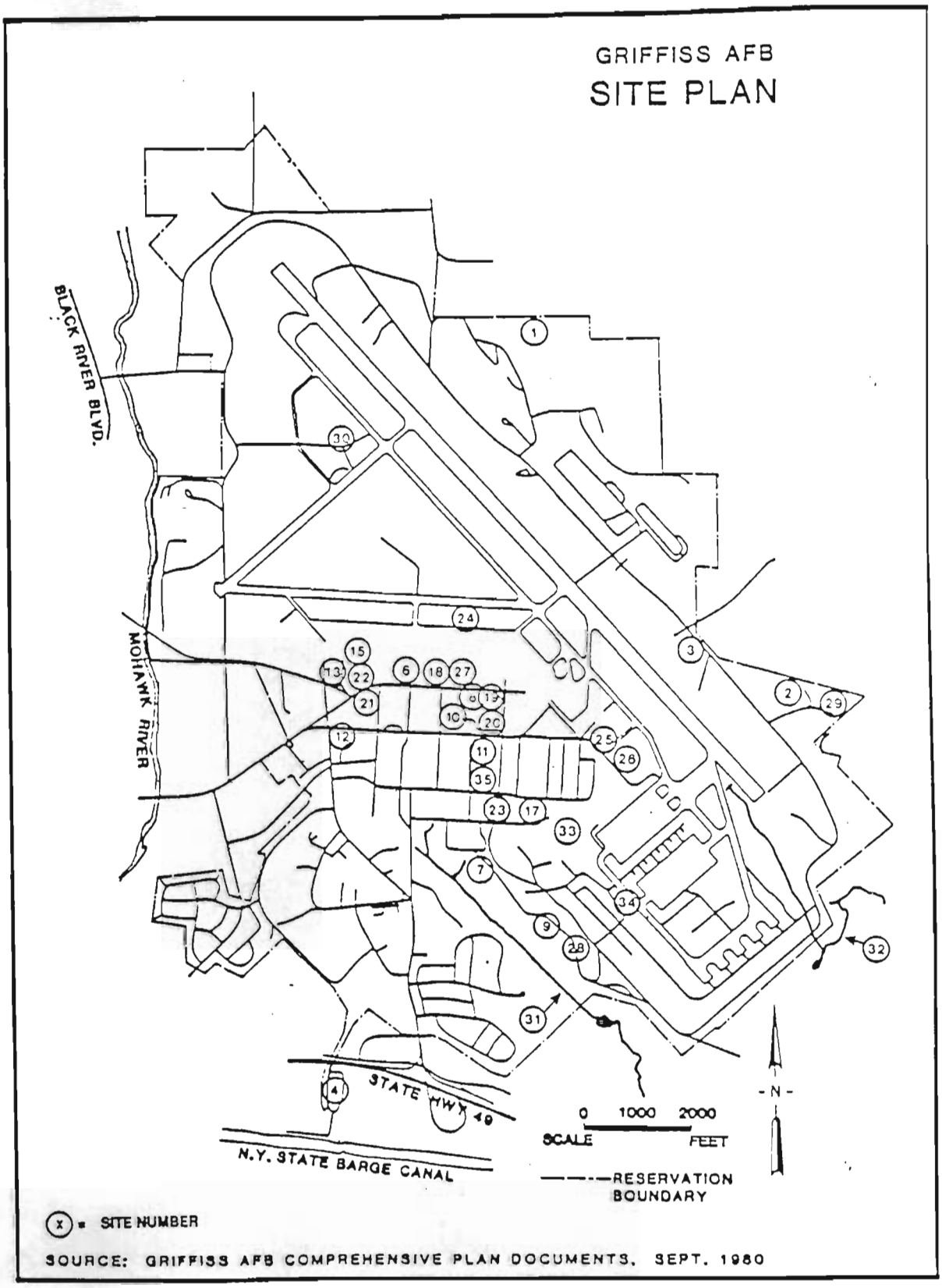


Figure 2.8 Griffiss AFB - IRP Site Locations

3.0 Summation of Site Information

This section presents the existing information on each of the IRP sites in site numerical order. Information presented is summarized but can be referenced in the IRP Phase I, Phase II reports and ongoing base monitoring activity reports. Each of the site information sheets presents the site number/name; its history; waste profile including monitoring, groundwater, surface water, and soil; the environmental concerns; and activity status.

This section is compiled to facilitate adding or removing sites; i.e. if a new site is discovered, its information sheet can be prepared and added to the section. If a site is closed then its information sheet can be stamped closed (or deleted) and dated. The Activity Status section of each site information sheet is purposely placed last to facilitate periodic updating as activities occur.

In this manner, this section should be used as an up-to-date summary of each of the IRP sites. When all the sites identified in this section are stamped closed, it will become the basis for removing Griffiss AFB from the NPL.

3.1 Site No. 1/Landfill No. 1

A. Operating History: 1960-1973, 22 acres. Accepted general refuse and boiler ash from site. Trench and cover method.

B. Waste Profile: Mostly municipal-type wastes, some unidentified 55-gal. empty barrels.

C. Present GW Monitoring System: Nine wells installed, two upgradient, W1,P2, and seven downgradient, W5, W6, W7, P2, P3, P4, and P5.

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected

Trichloroethylene (0.5)
Toluene (5.3)
O-Xylene (2.9)
P-Xylene (11.9)
-Xylene (11.9)
1,4 Dichlorobenzene (7.6)
Ethylbenzene (33)
Phenols (36)
Benzene (8.3)

2) Inorganics

Barium (223)
Copper (35)
Iron (101,200)
Lead (20)
Magnesium (34.6)
Manganese (6090)
Nitrate (0.4mg/L)
Sulfate (24mg/L)
Zinc (378)

E. Surface Water Contamination Profile (max concentration ug/L):

1) Organics Detected

1,1,1-Trichloroethane (1.3)
O-Xylene (30)
M-Xylene (9.3)
P-Xylene (11.3)
Phenols (60)

2) Inorganics

Manganese (2090)
Copper (146)
Iron (110975)
Nitrate (1.3mg/L)
Sulfate (11.3mg/L)

F. Sediment/Soil Contamination Profile (max concentration ug/g):

No Data

G. Environmental Concerns/Pathways: Six-Mile Creek borders on the west (downgradient). Leachate has drained into the creek in the past, although capping has lowered water table beneath landfill. Possible natural spring beneath pile.

H. Activity Status: IRP Phase I report recommended ground-water and surface water monitoring. Monitor wells were installed and monitoring continues. The IRP Phase II report recommended cleanup of exposed waste, regrading for better drainage, and capping with clay and topsoil. This was performed in 1984. Leachate has been observed but not sampled since capping. No inorganics have been detected in wells since 1985.

3.2 Site No. 2/Landfill No. 2

A. Operating History: 1973-1982, 60 acres. Accepted general refuse and hardfill from site operations. Trench and cover, and area methods. Operated as a permitted facility, in accordance with the NYS Department of Conservation Solid Waste Regulations.

B. Waste Profile: Domestic refuse from on-base Military Family Housing areas and office refuse.

C. Present GW Monitoring System: Three wells - W2, W10, and W11.

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected

Phenols (10 -detection limit)

2) Inorganics

Chromium (74)
Copper (84)
Manganese (3520)
Iron (200,000)
Zinc (490)

Nitrate (0.8mg/L)
Sulfate (24mg/L)

E. Surface Water Contamination Profile (max concentration ug/L):

None collected

F. Sediment/Soil Contamination Profile (max concentration ug/g):

None collected

G. Environmental Concerns/Pathways: Site drains into Slate and Six-Mile Creeks. No leachate observed.

H. Activity Status: IRP Phase II report recommended closure in accordance with state regulations. Site was closed in 1982 and in 1984 the surface was regraded for better drainage, and clay and topsoil cover was installed.

3.3 Site No. 3/Landfill No. 7

A. Operating History: 1950-1954, 4.5 acres, east of runway. Trench method - four - 20 ft deep by 50-60 ft wide by 400 ft long trenches. Wastes were burned, liquid wastes were buried in bottom of trenches.

B. Waste Profile: General refuse with some liquid wastes, ash, possible spent solvents, petroleum products, aircraft parts.

C. Present GW Monitoring System: Five wells, W3-1981 downgradient, and W15, W16, W17, W18-1984.

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected

Trichloroethylene (58)
Tetrachloroethylene (2.6)
1,1,1-Trichloroethane (3.3)
Bromodichloromethane (2.5)
Chloroform (0.2)
Phenols (24-1982)
1,2-Dichloroethene (0.3)
Methylene Chloride (0.4)
Oil and Grease (4.8 mg/L)

2) Inorganics

Arsenic (25)
Chromium (100-1982)
Copper (222)
Iron (140000)
Lead (44)
Magnesium (183)
Manganese (9730)
Zinc (858)
Nitrate (4.6 mg/L)
Sulfate (220 mg/L)

E. Surface Water Contamination Profile (max concentration ug/L):

1) Organics Detected

Methylene Chloride (0.4)

2) Inorganics

Magnesium (7.3)
Manganese (665)
Iron (2211)
Sulfate (56 mg/L)
Nitrate (0.2 mg/L)

F. Sediment/Soil Contamination Profile (max concentration ug/g):

No Data

G. Environmental Concerns/Pathways: Prior to remedial action, water table was shallow, landfill was on topographic high, percolation of surface water through landfill was rapidly producing a seepage southwest of fill area.

H. Activity Status: IRP Phase I report recommended ground-water and surface-water monitoring. Monitor wells were installed and monitoring continues. IRP Phase II report recommended additional sampling for EPA Priority Pollutants due to the discovery of Tetrachloroethylene in one well. The landfill was capped in July 1985. Organics have been detected since cap was installed (TCE-58ug/l, Bromodichloromethane-2.5ug/l, 1,2-Dichloroethene-0.3ug/l, Tetrachloroethylene-2.6).

3.4 Site No. 4/Bulk Fuel Storage Area

A. Operating History: 1942-present. Jet Aircraft fuel, JP-4, is brought on base either by river barge, pipeline or tank truck. Fuel arriving either by river barge or pipeline is stored at the fuel storage site near the New York State Barge Canal just south of the main base. As of 1981, the site consists of three tanks with a capacity of 630,000 gallons each. The tanks are individually diked with gravel and the diked volume appears to be one to two times the volume of the tank. Rainwater is manually discharged, after observation, to the storm drainage system. The truck loading/unloading area is paved and spills are collected. From the bulk storage area, JP-4 is piped to several storage areas on base which serve the hydrant fuel supply system.

B. Waste Profile: JP-4

C. Present GW Monitoring System: No Data

D. Ground Water Contamination Profile (max concentration ug/L):

No Data

E. Surface Water Contamination Profile (max concentration ug/L):

No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

No Data

G. Environmental Concerns/Pathways: Spilled fuel may enter the barge canal system.

H. Activity Status: This is an active site covered under RCRA regulations. No recommendations were made in the IRP reports. No spills have been detected. EPA suggested deletion from list in December 4, 1985 meeting notes.

3.5 Site No. 5/Lindane Spill at Former Entomology Storage Building

A. Operating History: Located adjacent to Building 321. Spill (<50 gal) occurred in 1955 and building has since been torn down.

B. Waste Profile: Lindane (pesticide)

C. Present GW Monitoring System: None

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected - No Data

2) Inorganics - No Data

E. Surface Water Contamination Profile (max concentration ug/L):

1) Organics Detected - No Data

2) Inorganics - No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

1) Organics Detected - No Data

2) Inorganics - No Data

G. Environmental Concerns/Pathways: Pesticide could leach into ground water.

H. Activity Status: Location of spill could not be verified, EPA suggested deletion from list in December 4, 1985 meeting notes.

3.6 Site No. 6/Yellow Submarine Holding Tank, Building 101

A. Operating History: The Yellow Submarine Holding Tank (12000 gal) received effluent from the Plating Shop before being pumped to the sanitary sewer system. The system was closed and rendered inoperable in 1987.

B. Waste Profile: Rinse water from plated-item wash. Plating metals include cadmium, nickel, copper, silver, gold, and brass.

C. Present GW Monitoring System: Not Applicable

D. Ground Water Contamination Profile (max concentration ug/L):

Not Applicable

E. Discharge Water Contamination Profile (max concentration ug/L):

1) Organics Detected - No Data

2) Inorganics

Cadmium (50000-max, 2000-mean)
Chromium-Tot (430000-max, 16000-mean)
Chromium-Hex (215000-max, 8000-mean)
Cyanide (120000-max, 11000-mean)
Iron (500000-max, 5000-mean)
Zinc (70000-max, 1000-mean)

F. Sediment/Soil Contamination Profile (max concentration ug/g):

Not Applicable

G. Environmental Concerns/Pathways: Effluent from the holding tank enters the sanitary sewer system and continues to the City of Rome Sewage Treatment Plant.

H. Activity Status: No information.

3.7 Site No. 7/Landfill No. 5

A. Operating History: Landfill No. 5 was used during 1959 following the abandonment of Landfill No. 6. It was constructed using an area-type method to a total depth of six feet. Wastes were burned then covered.

B. Waste Profile: General refuse

C. Present GW Monitoring System: One monitor well, W8, installed downgradient in 1982.

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected - None

2) Inorganics

Chromium (100)
Copper (90)
Zinc (430)
Nitrate (0.9mg/L)
Sulfate (150mg/L)

E. Surface Water Contamination Profile (max concentration ug/L):

No Leachate

F. Sediment/Soil Contamination Profile (max concentration ug/g):

No Data

G. Environmental Concerns/Pathways: The southern part of the site lies in the Three Mile Creek designated wetland area. The site drains south to Three Mile Creek.

H. Activity Status: One monitor well was installed and monitoring continues. IRP Phase II report recommended no further action.

3.8 Site No. 8,19/Building 112, PCB Dump Area and Transformer Leak

A. Operating History: Building 112 houses the High Power Laboratory. PCB oil has leaked from a roof-mounted transformer and PCB oil has reportedly been dumped outside the building.

B. Waste Profile: Polychlorinated biphenyl

C. Present GW Monitoring System: None

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected - No Data

2) Inorganics - No Data

E. Surface Water Contamination Profile (max concentration ug/L):

1) Organics Detected - No Data

2) Inorganics - No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

1) Organics Detected

PCB (530) Soils prior to remedial action
PCB (990,000) Grease from roof near transformer prior to remedial action

No data after remedial action.

2) Inorganics - No Data

G. Environmental Concerns/Pathways: Human exposure to contaminated soils and migration to groundwater.

H. Activity Status: The IRP Phase II report recommended repair of the leaking transformer. The roof-mounted transformer was replaced in January, 1985. The contaminated concrete mounting pad and approximately 800 square feet of contaminated built-up roofing was removed, containerized and disposed. PCB spills which were documented on the west side of Building 112 were excavated in 1984 and removed to <50 ppm PCB.

3.9 Site No. 9/Landfill No. 6

A. Operating History: 1955-1959, 8 acres. Site is divided by an access road into a north area and south area. The north area is located on a hillside. Wastes were dumped at the top of the hill and burned on the hillside. Thickness of wastes and burned residue is estimated at five to ten feet. The south area being flat, wastes were spread to an average thickness of four feet then covered. In 1986, fuel-contaminated wastes from the removal of Tank Farms 1 and 3 were deposited and capped on the south side of Landfill 6.

B. Waste Profile: Hardfill (construction/demolition debris, wooden pallets, etc.), municipal solid wastes and other base wastes, fuel-contaminated soils.

C. Present GW Monitoring System: One monitor well, W9, was installed in 1982 downgradient from the landfill towards Three Mile Creek.

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected

Phenols (14)

2) Inorganics

Chromium (80)
Copper (80)
Iron (5730)
Zinc (450)
Nitrate (0.28mg/L)
Sulfate (1525mg/L)

E. Surface Water Contamination Profile (max concentration ug/L):

No Leachate

F. Sediment/Soil Contamination Profile (max concentration ug/g):

No Data

G. Environmental Concerns/Pathways: Site drains into Three Mile Creek

H. Activity Status: Monitoring was implemented in 1982. IRP Phase II report recommended no further action. No remedial action has been performed.

3.10 Site No. 10/Building 117 Drywell

A. Operating History: 1940s? - 1986

B. Waste Profile: Steam boiler blowdown and zeolite ion exchange rinse were deposited into this concrete-lined sediment basin. Effluent was discharged into the sanitary sewer.

C. Present GW Monitoring System: None

D. Ground Water Contamination Profile (max concentration ug/L):

No Data

E. Surface Water Contamination Profile (max concentration ug/L):

No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

No Data

G. Environmental Concerns/Pathways: Contaminants might leach into surrounding soil and water.

H. Activity Status: IRP Phase I and II recommended discontinued use of all drywells. Building 117 and drywell are scheduled to be demolished in 1988. In 1985, EPA suggested resampling for heavy metals and deletion.

3.11 Site No. 11/Building 3 Drywell

A. Operating History: 1960s - 1984

B. Waste Profile: Cleaning solvents, etching acids and solutions, containing metal salts, and paint thinner.

C. Present GW Monitoring System:

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected - No Data

2) Inorganics - No Data

E. Surface Water Contamination Profile (max concentration ug/L):

Not Applicable

F. Sediment/Soil Contamination Profile (max concentration ug/g):

1) Organics Detected - No Data

2) Inorganics (Sample collected after remedial action)

Arsenic (<.001)
Barium (<.3)
Cadmium (<.005)
Chromium (<.05)
Lead (<.1)
Mercury (<.0004)
Selenium (<.001)
Silver (<.05)

G. Environmental Concerns/Pathways: Contaminants could leach into surrounding soil and water.

H. Activity Status: IRP Phase I report recommended discontinued use of drywells. The drywell and contaminated soil were removed (completed June 1987). Contractor was required to collect samples during excavation to determine extent of excavation. Only one sample analysis was found dated August 14, 1987 (see above).

3.12 Site No. 12/Building 301, Entomology Drywell

A. Operating History: 1940s - 1982. Until 1987, Building 301 housed the Entomology Shop which provides pest control for the base. The drywell was used to dispose of rinse water from pesticide containers, excess pesticide, and shower and washer effluent. Use of the drywell was discontinued in 1982.

B. Waste Profile: Pesticides

C. Present GW Monitoring System: Well W4 was installed in 1982 downgradient and as close to the drywell as possible (within 50 feet). Samples were collected in 1982 and no pesticides were detected.

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected

Phenols (21)

2) Inorganics

Chromium (170)
Copper (30)
Zinc (2490)

E. Surface Water Contamination Profile (max concentration ug/L):

1) Organics Detected - Not Applicable

2) Inorganics - Not Applicable

F. Sediment/Soil Contamination Profile (max concentration ug/g):

1) Organics Detected - No Data

2) Inorganics - No Data

G. Environmental Concerns/Pathways:

H. Activity Status: IRP Phase I report recommended discontinued use of drywells. A monitoring well was installed and no contamination was found. In meeting notes dated 4 December 1985, EPA suggested deletion.

3.13 Site No. 13/Drywells (two) Building 225

A. Operating History: These drywells are stone and gravel filled pits roughly three or four feet square and up to ten feet deep. They had the potential to have had hazardous waste disposed in them.

B. Waste Profile: Potential lube oil, engine cleaning compounds, caustics, acids, and small amounts of paint.

C. Present GW Monitoring System: Not applicable.

D. Ground Water Contamination Profile (max concentration ug/L):

Not applicable

E. Surface Water Contamination Profile (max concentration ug/L):

No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

No Data

G. Environmental Concerns/Pathways: Contaminants could enter surface water from runoff and the groundwater from infiltration.

H. Activity Status: Drywells could not be located. In meeting notes dated December 4, 1985, EPA suggests and concurs with deletion.

3.14 Site No. 14/General Chlordane Application

A. Operating History: Chlordane was used at GAFB until early 1980 for termite and ant control. Application consisted of spraying a 0.5% solution of chlordane around the interior and exterior baseboards of buildings. No ground drilling was carried out. The average usage of chlordane was 10-15 lbs. (dry) per month.

B. Waste Profile: Chlordane (pesticide)

C. Present GW Monitoring System: Not Applicable

D. Ground Water Contamination Profile (max concentration ug/L):

Not Applicable

E. Surface Water Contamination Profile (max concentration ug/L):

No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

No Data

G. Environmental Concerns/Pathways: Chlordane was sprayed on the ground before foundations were poured during new construction and periodically around the foundation and interior of buildings for termite and ant control. Measurable levels of Chlordane can enter the building through the foundation especially if sub- or intra-slab heating or cooling ducts are present.

H. Activity Status: DOD established a plan (1981) to assess and abate the potential health hazards associated with chlordane. This includes an inventory and sampling of all base buildings suspected of having chlordane contamination. An inventory of buildings which were treated with chlordane was made and air samples were taken in selected buildings. DOD has initiated a plan to remediate buildings with sub-slab heating systems or enclosed crawl spaces with HVAC ducting exposed to the ground.

3.15 Site No. 15/Drywell Building 219

A. Operating History: This drywell is a stone and gravel filled pit roughly three or four feet square and up to ten feet deep. It had the potential to have had hazardous waste disposed in it.

B. Waste Profile: Potential caustics, acids, and ethylene glycol.

C. Present GW Monitoring System: Not applicable

D. Ground Water Contamination Profile (max concentration ug/L):

Not Applicable

E. Surface Water Contamination Profile (max concentration ug/L):

No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

No Data

G. Environmental Concerns/Pathways: Contaminants could enter surface water from runoff and the groundwater from infiltration.

H. Activity Status: Drywell could not be located. In meeting notes dated December 4, 1985, EPA suggests and concurs with deletion.

3.16 Site No. 16/PCB Spill at Floyd Annex

A. Operating History: The annex is a former Research and Development facility, located approximately four miles southeast of GAFB. An oil spill occurred on 15 April 1981, during an attempted theft of copper pipe connected to a storage tank containing 5,000 gallons of oil with 60 ppm PCB. Approximately 3,600 gallons spilled into the diked area, of which 1,000 gallons were recovered and pumped back into the tank. The soil was excavated to a depth of approximately two feet and placed in 100 55-gallon drums for disposal by a licensed contractor. The oil remaining in the tank was transported to Building 112 for storage.

B. Waste Profile: PCB (Aroclor 442/1260)

C. Present GW Monitoring System: None

D. Ground Water Contamination Profile (max concentration ug/L):

No Data

E. Surface Water Contamination Profile (max concentration ug/L):

No Data

F. Soil Contamination Profile (max concentration ug/g): Samples were collected following the removal of the spilled oil.

1) Organics Detected

PCB (8.9 ppm)

2) Inorganics - No Data

G. Environmental Concerns/Pathways: Site has been cleaned.

H. Activity Status: No IRP Phase I or II recommendations were made. Oil and contaminated soils were removed immediately following the spill. The removal standard for soil cleanup was 50 ppm PCB.

3.17 Site No. 17/Lot 69

A. Operating History: 1965 - 1982. This unfenced storage area was used to store containers of liquid and solid wastes. In the past, small quantities of waste spilled onto the ground. In 1982, wastes were moved to Lot 69 East for construction of a new vehicle maintenance facility. No spills occurred during the active life of this lot. The wastes were stored approximately six months at this lot before being transferred to Lot 11.

C. Waste Profile: Flammable liquid and solid wastes, spent corrosives, trap grease, spent solvents, neutralized acids, spent paint thinners, fuel spill residues, waste oils and soot from #6 fuel oil.

D. Present GW Monitoring Sytem: None

E. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected - No Data

2) Inorganics - No Data

F. Surface Water Contamination Profile (max concentration ug/L):

1) Organics Detected - No Data

2) Inorganics - No Data

G. Sediment/Soil Contamination Profile (max concentration ug/g): Collected prior to closure of the site

1) Organics Detected

Trichloroethylene (70)
Toluene (15)
Xylene (471)

2) Inorganics - No Data

H. Environmental Concerns/Pathways: See below

I. Activity Status: No IRP recommendations were made. Site was closed prior to new construction. No remedial action was performed.

3.18 Site No. 18/Building 101 Waste Oil Storage Area

A. Operating History: This is an operating RCRA accumulation point.

B. Waste Profile: Waste Oil

C. Present GW Monitoring System: None

D. Ground Water Contamination Profile (max concentration ug/L):

No Data

E. Surface Water Contamination Profile (max concentration ug/L):

No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

No Data

G. Environmental Concerns/Pathways: Spilled contaminants could migrate into soil and groundwater, although this is unlikely since spills would have to flow 500 feet over concrete before soil and groundwater would be effected.

H. Activity Status: No IRP recommendations. EPA suggested deletion in December 4, 1985 meeting notes since this site is used strictly as an accumulation area before the barrels were picked up by a contractor.

3.19 Site No. 19/PCB Leak Building 112 (See Site No. 8, Section 3.8)

A. Operating History: Building 112 houses the High Power Laboratory. PCB oil has leaked from a roof-mounted transformer and PCB oil has reportedly been dumped outside the building.

B. Waste Profile: Polychlorinated biphenyl

C. Present GW Monitoring System: None

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected - No Data

2) Inorganics - No Data

E. Surface Water Contamination Profile (max concentration ug/L):

1) Organics Detected - No Data

2) Inorganics - No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

1) Organics Detected

PCB (530) Soils prior to remedial action
PCB (990,000) Grease from roof near transformer prior to remedial action

No data after remedial action.

2) Inorganics - No Data

G. Environmental Concerns/Pathways: Human exposure to contaminated soils and migration to groundwater.

H. Activity Status: The IRP Phase II report recommended repair of the leaking transformer. The roof-mounted transformer was replaced in January 1985. The contaminated concrete mounting pad and approximately 800 square feet of contaminated built-up roofing was removed, containerized and disposed. PCB spills which were documented on the west side of Building 112 were excavated in 1984 and removed to <50 ppm PCB.

3.20 Site No. 20/Tank Farm Area

A. Operating History: 1943-1986?. This area consists of two adjacent former tank farm areas (Tank Farms 1 and 3) where Avgas, Mogas, JP-4, FS-6, and propanol had been stored.

As of 1985, Tank Farm 1 consisted of seven active and two inactive buried tanks containing Avgas, Mogas, propanol, and JP-4, and one above-ground tank containing propanol. The tanks ranged in capacity from 25,000 to 50,000 gallons.

Tank Farm 3 consisted of three above-ground tanks containing No.6 fuel oil and four 25,000 gallon underground tanks containing JP-4.

A leak was discovered in 1982 during construction of a steam pipeline. Measurable quantities of light fuel product were found in the ground water.

During 1986, both tank farms were removed with the exception of the FS-6 tanks. Removal included tanks, piping, wiring, and buildings. Contaminated soil was hauled to Landfill 6 where it was capped with a clay and topsoil cover.

B. Waste Profile: Fuel Related Products

C. Present GW Monitoring System: Eight wells installed in 1984. Locations of the wells were based on soil borings and explosimeter readings. MW-21 and MW-22 were located within the fuel spill area near the trench where the steam line was installed. MW-23 and MW-24 were located downgradient of the contaminated area. MW-25 and MW-26 were located within the contaminated area just south of the tank farm. MW-27 was located north of the tank farms in the Fuel Loading area. MW-28 was located upgradient (north) of the contaminated area. Up to five inches of product was observed floating on the groundwater in the soil boring holes prior to monitor well installation. MW-23 has since been destroyed.

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected

Pre-Remedial Action:
Oil and Grease (20.6mg/L)
TOC (30mg/L)

Post-Remedial Action:

Oil and Grease (1mg/L)	Bromodichloromethane (2.7)
TOC (11mg/L)	1,1-Dichloroethane (0.4)
Trichloroethylene (1.5)	1,2-Dichloroethane (<.2)
Tetrachloroethylene (7.2)	Chloroform (2.6)
Toluene (16)	Carbon Tetrachloride (3.6)

2) Inorganics

Pre-Remedial Action:	Post-Remedial Action:
Lead (20)	Lead (375)
	Iron (142000)

E. Surface Water Contamination Profile (max concentration ug/L):

1) Organics Detected - Not Applicable

2) Inorganics - Not Applicable

F. Sediment/Soil Contamination Profile (max concentration ug/g):

1) Organics Detected
Oil and Grease - 11,119

2) Inorganics - No Data

G. Environmental Concerns/Pathways: The central part of the base where the Tank Farm is located is underlain by glacially derived coarse sands and gravels estimated to be up to 80 feet thick. These overlay the Utica Sand. The sediments constitute a highly permeable unconfined aquifer surface. See Phase II - Confirmation/Quantification Stage II, 1985.

H. Activity Status: IRP Phase II recommended remedial action. During remedial action, contaminated soil was removed in one foot increments until in-situ measurements indicated combustible gas levels below 10 ppm or until water level was reached. Also, soil samples were to be collected and analyzed by an independent testing laboratory. Copies of these data are on file in the Environmental Coordinator's office at Griffiss.

3.21 Site No. 21/Building 210, Buried Tank

A. Operating History: Building 210 is a water treatment facility. A 275 gallon underground gasoline tank was located along the east side of the building. In 1984, during excavation near the tank, a leak was discovered. A review of the inventory records confirmed a steady loss of fuel had been occurring for an indefinite period of time. The tank was taken out of service. In November 1984, the tank was removed and replaced.

B. Waste Profile: Petroleum-based Fuel Products

C. Present GW Monitoring System: Two monitoring wells, MW19 and MW20, were installed in 1984 along with seven soil borings.

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected

Chloroform (2.1)
Methylene Chloride (0.4)
Tetrachloroethylene (2.0)
Oil and Grease (200)
Total Organic Carbon (40000)

2) Inorganics

Iron (2448)

E. Surface Water Contamination Profile (max concentration ug/L):

1) Organics Detected - Not Applicable

2) Inorganics - Not Applicable

F. Sediment/Soil Contamination Profile (max concentration ug/g):

1) Organics Detected - No Data

2) Inorganics - No Data

G. Environmental Concerns/Pathways: Site is underlain with highly permeable coarse sands and gravels up to 80 feet thick underlain by the Utica Shale. Groundwater is 15 feet below surface and flows to nearby streams.

H. Activity Status: In 1984, the tank was removed and replaced. IRP Phase II recommended continued monitoring.

3.22 Site No. 22/Building 222 Battery Acid Disposal Pit

A. Operating History: 1940's-1984. Used to dispose of spent battery electrolytes

B. Waste Profile:

C. Present GW Monitoring System:

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected - No Data

2) Inorganics - No Data

E. Surface Water Contamination Profile (max concentration ug/L):

Not Applicable

F. Sediment/Soil Contamination Profile (max concentration ug/g):

1) Organics Detected - No Data

2) Inorganics

Manganese (4)
Mercury (<.5ug/L)
Chromium (6)
Copper (500)
Iron (366)
Lead (65800-Surface)
Zinc (329)

G. Environmental Concerns/Pathways: Contaminants could leach into the surrounding soil and groundwater.

H. Activity Status: IRP Phase II report recommended discontinued use and sealing, and analysis of sludge. The use of the drywell was discontinued in 1984 and remedial action was performed in 1985. Contaminated soil was removed and the pit was backfilled and capped with concrete.

3.23 Site No. 23/Locomotive Roundhouse, Building 20

A. Operating History: In 1985, while excavating near the northwest corner of Building 20, an oily liquid was encountered. Upon further investigation, a floor drain in the building had developed a leak and a cavity beneath the floor had filled up with liquid waste.

B. Waste Profile: The liquid contained oil and grease and inorganics.

C. Present GW Monitoring System: One monitoring well, MW-1, was installed in 1986. It is located within 10 feet of the northwest corner of the building. In October 1986, soil borings were drilled through the concrete floor inside the building. Soil samples were collected at two feet intervals to groundwater.

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected

1,1,1-Trichloroethane (3)
Oil and Grease (5000)

2) Inorganics

Cadmium (830)
Chromium (1260)
Lead (3310)
Nickel (1770)
Silver (90)
Zinc (7330)

E. Surface Water Contamination Profile (max concentration ug/L):

Not Applicable

F. Sediment/Soil Contamination Profile (max concentration ug/g):

1) Organics Detected

Oil and Grease (65)

2) Inorganics

Lead (.130)
Zinc (.09)

G. Environmental Concerns/Pathways: Waste liquids could contaminate the groundwater in the vicinity of Building 20.

H. Activity Status: No IRP recommendations. Remedial action has been performed on the site and, based on the post-remedial action sample analysis, the Base Civil Engineer has concluded that no further remedial action is required (ref. B. Mero/USEPA letter dated 3/27/87).

3.24 Site No. 24/Fire Demonstration Area, Building 101

A. Operating History: 1974-1984

B. Waste Profile: Fuels, mostly JP-4.

C. Present GW Monitoring System: In 1986, three boreholes were augered to groundwater and soil and water samples were collected. One borehole (MW-1) was completed as a monitoring well, downgradient from the site.

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected - None, Analyzed for Oil and Grease, Trichloroethane, and PCB.

2) Inorganics

Cadmium (630)
Chromium (930)
Lead (2500)
Nickel (2000)
Zinc (5130)

E. Surface Water Contamination Profile (max concentration ug/L):

No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

1) Organics
Oil and Grease (29)
Trichloroethane (<.01)

2) Inorganics

Cadmium (<.04)	Nickel (<.05)
Chromium (<.05)	Silver (<.02)
Lead (.2)	Zinc (.14)
Mercury (<.3)	

G. Environmental Concerns/Pathways: Contaminants have entered the groundwater.

H. Activity Status: No information in IRP reports. No remedial action has been performed.

3.25 Site No. 25/T-9 Storage Area

A. Operating History: Storage area for herbicides and other chemicals used for pavements and grounds maintenance. Asphalt trucks were rinsed with kerosene and the rinsate dumped onto the ground. An above-ground kerosene tank at this site leaked on numerous occasions.

B. Waste Profile: Herbicides and kerosene

C. Present GW Monitoring System: 24 Boreholes were drilled and sampled (1986), and four of these were completed as permanent monitoring wells, MW-1,-2,-3,and -4. No data after first sampling.

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected

1,1,1-Trichloroethane (3740)
PCB (1820)
Oil and Grease (436)

2) Inorganics

Cadmium (520)
Chromium (890)
Lead (2230)
Nickel (1290)
Silver (80)
Zinc (3830)

E. Surface Water Contamination Profile (max concentration ug/L):

Not Applicable

F. Sediment/Soil Contamination Profile (max concentration ug/g): (from borings)

1) Organics Detected

1,1,1-Trichloroethane (.110)
Oil and Grease (452)

2) Inorganics

Chromium (.07)
Lead (.54)
Nickel (.09)
Zinc (1.05)

G. Environmental Concerns/Pathways: Contaminant has leached into the groundwater.

H. Activity Status: No information

3.26 Site No. 26/Building 43 Refueling Station

A. Operating History: Operated as a refueling station. Consists of three pump islands.

B. Waste Profile: Fuel

C. Present GW Monitoring System: One monitoring well, 4.4-MW1. Four boreholes were drilled in 1986. Soil and water samples were collected from each and one borehole was completed for monitoring. We have no data at this time.

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected - No Data

2) Inorganics - No Data

E. Surface Water Contamination Profile (max concentration ug/L):

1) Organics Detected - No Data

2) Inorganics - No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

1) Organics Detected

Oil and Grease - 2430

2) Inorganics - No Data

G. Environmental Concerns/Pathways: Leakage could occur from surface spills or underground pipes and tanks.

H. Activity Status: No information.

3.27 Site No. 27/Battery Acid Disposal Pit, Building 101

A. Operating History: 1940s - 1984. Neutralized battery acid was dumped into a pit measuring 2x2x8 feet through a steel grate in the floor. The liquids were allowed to percolate into the surrounding soils.

B. Waste Profile: Spent battery electrolytes

C. Present GW Monitoring System: None

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected - No data

2) Inorganics - No Data

E. Surface Water Contamination Profile (max concentration ug/L):

1) Organics Detected - No Data

2) Inorganics - No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

1) Organics Detected - No Data

2) Inorganics - Prior to Remedial Action

Antimony (232.5)	Manganese (161)
Arsenic (3)	Mercury (.21)
Barium (30)	Nickel (9.6)
Beryllium (0.1)	Selenium (<0.1)
Cadmium (0.7)	Silver (7.7)
Chromium (34)	Thallium (<0.1)
Copper (784)	Tin (193)
Iron (26000)	Zinc (262)
Lead (83000)	

G. Environmental Concerns/Pathways: Wastes could migrate into the groundwater.

H. Activity Status: IRP reports recommended discontinued use of drywells. In 1985, the contaminated soil was removed to eight feet and the drywell was cemented closed. Spent battery electrolyte is now neutralized and containerized for disposal.

3.28 Site No. 28/Landfill No. 4

A. Operating History: Used in the mid-1950s for disposal of low-level radioactive vacuum tubes. Initially an open vertical pipe, four feet diameter. Filled with concrete in 1977. Posted sign indicates radioactivity.

B. Waste Profile: Low-level radioactive vacuum tubes

C. Present GW Monitoring System: None

D. Ground Water Contamination Profile (max concentration ug/L):

No Data

E. Surface Water Contamination Profile (max concentration ug/L):

No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

No Data

G. Environmental Concerns/Pathways: Site drains into Three Mile Creek, which, in turn, flows into the New York State Barge Canal.

H. Activity Status: IRP Phase II report recommended no further action.

3.29 Site No. 29/Landfill No. 3

A. Operating History: 1980- 1981, <1 acre. Operated as a disposal area for asbestos wastes generated from demolition and repair of asbestos insulated piping. Within boundary of Landfill No. 2, IRP Site No. 2.

B. Waste Profile: The asbestos was wetted, double-bagged, and disposed of in pits dug to about 8 feet deep. A sign designates the area, all asbestos is said to be within 25 feet of the sign. Method of disposal was approved by the State of New York, EPA, and Air Force.

C. Present GW Monitoring System: None

D. Ground Water Contamination Profile (max concentration ug/L):

No Data

E. Surface Water Contamination Profile (max concentration ug/L):

No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

No Data

G. Environmental Concerns/Pathways: Site is within the boundary of Landfill No. 2. See Site No. 2 summary.

H. Activity Status: See Site No. 2 summary

3.30 Site No. 30/Fire Training Area

A. Operating History: The Fire Control Department operates a fire training area just east of the north end of the runway. This area serves as a practice burning/extinguishing area, where petroleum product fires are set. The product most utilized is JP-4 jet fuel. When available, waste JP-4 is used. The area was an open, undeveloped field and infiltration into the ground of the fuel and extinguishing chemicals occured.

B. Waste Profile: Fuels, mostly JP-4.

C. Present GW Monitoring System: None

D. Ground Water Contamination Profile (max concentration ug/L):

No Data

E. Surface Water Contamination Profile (max concentration ug/L):

No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

1) Organics Detected

Oil and Grease (21,310)

2) Inorganics

Lead (.20)
Zinc (.14)

G. Environmental Concerns/Pathways: Contaminants could enter surface water from runoff and the groundwater from infiltration.

H. Activity Status: No recommendations. Contaminated soil (>10 ppm oil and grease) was removed in 1985 and a new fire training facility was constructed at this location.

3.31 Site No. 31/Three Mile Creek

A. Operating History: Pre-Griffiss

B. Waste Profile: Many wastes were dumped into the storm-sewer system which ultimately drains to either Three-Mile or Six-Mile Creeks. These wastes include rinse water from the plating shop, equipment washdown from various shops (oils, solvents, and fuel), excess herbicides and pesticides from grounds application, and general runoff.

C. Present GW Monitoring System: Thirteen wells (USGS-1 through -13) were drilled in 1987 by the USGS. One well USGS-12 was vandalized before samples could be obtained. No data received as of this writing.

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected - No Data

2) Inorganics - No Data

E. Surface Water Contamination Profile (max concentration ug/L):

1) Organics Detected

Tetrachloroethylene (.3)
1,1,1-Trichloroethane (.4)
Trichloroethylene (1.3)
Toluene (20)
Oil and Grease (1800-1979)

2) Inorganics

Arsenic (1)
Manganese (120)
Molybdenum (2)
Chromium (6)
Copper (66)
Iron (560)
Lead (5)
Nickel (2)
Strontium (520)
Zinc (110)
Aluminum (110)

F. Sediment/Soil Contamination Profile (max concentration):

1) Organics Detected (ug/kg)

Phenanthrene (31000-Site3)
Pyrene (24000-Site3)
Dieldrin (12-Site5)
Heptachlor (0.2-Site2)
Benzo(ghi)perylene (88000-Site3)
Benzo(a)anthracene (130000-Site3)
1,2 Dichlorobenzene (1400-Site6)
1,4 Dichlorobenzene (490-Site6)
1,2,5,6 Dibenzathracene (59000-Site3)

2,4-DP (1800-Site3)
Phenol (1700-Site3)
PCB (20000-Site3)
Diazinon (5-Site5)
Mirex (33-Site6)
Benzo(b)fluoranthene (150000-Site3)
Benzo(k)fluoranthene (190000-Site3)
Benzo(a)pyrene (190000-Site3)
Chrysene (110000-Site3)
Flouranthene (300000-Site3)
Flourene (62000-Site3)
Indeno(1,2,3-CD)Pyrene (110000-Site3)
Naphthalene (52000-Site3)
Oil and Grease (8000-Site4)
Anthracene (63000-Site3)
Acenaphthene (75000-Site3)
Acenaphthylene (340-Site4)

2) Inorganics (ug/g)

Arsenic (18-Site6)
Barium (50-Site4)
Cadmium (16-Site6)
Chromium (40-Site3)
Copper (70-Site3)
Iron (10000-Site4)
Lead (350-Site4)
Antimony (9-Site6)
Aluminum (48000-Site6)
Magnesium (3100-Site2)
Manganese (200-Site5)
Mercury (0.29-Site6)
Selenium (2-Site6)
Strontium (50-Site3)
Zinc (200-Site3)

G. Environmental Concerns/Pathways: Three-Mile Creek originates on the base and drains the south-central portion of the base. It connects with the New York State Barge Canal just south of the base. The areas surrounding the creek are designated wetlands by the state. SPDES Permit.

H. Activity Status: No recommendations have been made and no remedial action has been performed.

3.32 Site No. 32/Six Mile Creek

A. Operating History: Pre-Griffis

B. Waste Profile: Surface runoff, Landfills 1 and 7 leachate.

C. Present GW Monitoring System: Ten monitor wells, surface water collection at entrance to and exit from the site, and downstream from Landfill 1 leachate.

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected

Chloroform (8500)
Bromodichloromethane (600)
Methylene Chloride (500)

2) Inorganics - No Data

E. Surface Water Contamination Profile (max concentration ug/L):

1) Organics Detected

Trichloroethylene (0.5)
PCB (2.8)
Phenols (24)
Oil and Grease (6000-1979)

2) Inorganics

Manganese (2830)
Mercury (3)
Magnesium (21400)

F. Soil Contamination Profile (max concentration ug/g):

1) Organics Detected - No Data

2) Inorganics

Vanadium (82.7)

G. Environmental Concerns/Pathways: Six Mile Creek drains into the New York State Barge Canal just south of the site. SPDES Permit.

H. Activity Status: No recommendations have been made and no remedial action has been performed.

3.33 Site No. 33/PCB Hotspot

A. Operating History: No Data

B. Waste Profile: PCB contaminated soil, origin unknown.

C. Present GW Monitoring System: None

D. Ground Water Contamination Profile (max concentration ug/L):

No Data

E. Surface Water Contamination Profile (max concentration ug/L):

No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

1) Organics Detected

PCB - 480

2) Inorganics Detected - No Data

G. Environmental Concerns/Pathways: PCB's could enter ground water.

H. Activity Status: No recommendations. A project to remove PCB contamination was to begin in 1988.

3.34 Site No. 34/Building 786 Contamination

A. Operating History: Building 786 houses the Aerospace Ground Equipment Shop which is responsible for the repair and maintenance of equipment.

B. Waste Profile: Oil, solvents, and fuel. Waste oil, fuels, and solvents are collected in 55 gallon drums and/or tanks.

C. Present GW Monitoring System: No Data

D. Ground Water Contamination Profile (max concentration ug/L):

No Data

E. Surface Water Contamination Profile (max concentration ug/L):

No Data

F. Sediment/Soil Contamination Profile (max concentration ug/g):

No Data

G. Environmental Concerns/Pathways: If leakage/spillage occurred, possible contamination of soil/water might result.

H. Activity Status: No recommendatons. A contract to remove the drum storage area and contamination was planned for 1988. Architectural and engineering investigations are underway.

3.35 Site No. 35/Building 26, Underground Storage Tanks

A. Operating History: Underground storage of fuel in five tanks.

B. Waste Profile: Tanks may have leaked fuel to surrounding areas.

C. Present GW Monitoring System: None

D. Ground Water Contamination Profile (max concentration ug/L):

1) Organics Detected

Oil and Grease (96000)

2) Inorganics - No Data

E. Surface Water Contamination Profile (max concentration ug/L):

Not Applicable

F. Sediment/Soil Contamination Profile (max concentration ug/g):

1) Organics Detected

Oil and Grease (71000)

2) Inorganics - No Data

G. Environmental Concerns/Pathways: Leaking tanks may contaminate ground water.

H. Activity Status: No recommendations. Remedial action was performed in 1987 which included removal of five underground oil/fuel tanks, all associated piping and pumps, demolision and removal of Building 26, and backfilling with clean fill. The tanks were not replaced.

4.0 Specific Site Recommendations

4.1 Introduction

The EPA reviewed the IRP Phase I and II documents to determine if the Remedial Investigation/Feasibility Study (RI/FS) objectives set by the EPA had been met. In the draft report Griffiss Air Force Base, Technical Review of Documents, they cite several deficiencies in meeting RI/FS requirements. However, there are no site specific recommendations in the report, such as to delete a site or include a site in the RI/FS. For management purposes all deficiencies cited by EPA are 1) considered as basewide, general requirements, and 2) provide information input to a RI/FS document. These are covered in Section 5.0 of this document.

In a meeting at Griffiss AFB, December 4, 1985 with EPA and State of New York personnel, some sites were discussed and specific recommendations were made by EPA. These recommendations along with a detailed study of all available data including the IRP reports, laboratory reports, statements of work, and internal memorandum form the basis for the site specific recommendations.

4.2 No Further Action Documentation

The goal of removing Griffiss AFB from the NPL requires the eventual "No Further Action Documentation" on all sites identified in the preliminary assessment (IRP Phase I) and subsequent site identifications. However, some of the identified sites cannot be found; some have analyses showing either no hazardous contaminant exists or, if it does, the level of contamination is below regulatory concern; and some have had remediation to either remove the contaminant or contain it. These sites need to be documented to EPA with "No Further Action Documents" and Griffiss AFB needs written EPA concurrence so that these sites do not need to be included in the RI/FS process.

These sites are listed below with a brief rationale for writing a "No Further Action Document."

	Site No./Location	Rationale
1.	Site No. 4/Bulk Fuel Storage Area	Meets RCRA requirements, no spills, no contaminants; EPA suggests deletion.
2.	Site No. 5/Lindane Spill at Former Entomology Building	Location cannot be verified; EPA suggests deletion.
3.	Site No. 6/Yellow Submarine Holding Tank	Inoperable and sealed in 1987; no identification of contaminant release after 1987.
4.	Site No. 7/Landfill 5	No hazardous contaminants - general refuse burned/covered.

Site No./Location	Rationale
5. Site No. 8,19/PCB Dump Area & Transformer Leak (includes site number 19)	Transformer replaced, contamination cleaned up to below limits.
6. Site No. 11/Building 3 Drywell	Drywell and contaminated soil were removed. Analysis clean.
7. Site No. 12/Building 301	No contaminants detected. EPA suggested deletion.
8. Site No. 13/Building 225 Drywells (two)	Cannot locate. EPA suggested deletion.
9. Site No. 14/General Chloradane Use	No contaminant present.
10. Site No. 15/Building 219 Drywell	Cannot locate. EPA suggested deletion.
11. Site No. 16/PCB Spill at Floyd Annex	Cleaned up to less than regulatory limit (8.9 ppm).
12. Site No. 18/Building 101 Waste Oil Storage	No contaminants identified, EPA suggested deletion.
13. Site No. 22/Building 222 Battery Acid Pit	Drywell and soil removed/area capped in 1985.
14. Site No. 23/Building 20 Drain	Remedial action performed, analysis clean.
15. Site No. 27/Building 101 Battery Acid Pit	Drywell and soil removed/area capped in 1985.
16. Site No. 30/FTA NE of Runway	Contaminated soil (>10ppm oil and grease) removed in 1985, new FTA constructed.
17. Site No. 34/Building 786 Contamination	Completion of 1988 contract to remove contamination is basis for clean area.
18. Site No. 35/Building 26 UST's (5)	Five (5) tanks removed in 1987, Building 26 removed, backfilled with clean fill.

This completes the list of sites for which "No Further Action Documents" must be prepared and written EPA concurrence obtained. This list is compiled in "good faith" and based on previous work performed by Griffiss AFB to provide an environmentally acceptable solution to contamination potential at these sites. If EPA does not concur then it will be EPA's responsibility to define what

additional information is required to complete a "No Further Action Document." Any further action identified by EPA will be programmatically scheduled after receipt of written documentation from EPA and in accordance with Griffiss AFB mission and budget constraints.

4.3 Further Confirmation Sites

This section contains those sites which with further confirmation of contaminant extent and levels may need to be evaluated for writing "No Further Action Documents."

Site No./Location	Rationale
1. Site No. 2/Landfill No. 2 (includes site 29)	Was a New York State permitted site, domestic/office refuse, capped/graded. Asbestos within regulations.
2. Site No. 9/Landfill No. 6	More data is required to identify possible contaminants.
3. Site No. 10/Building 117 Drywell	Building 117 and drywell to be removed in 1988. At completion need to resample.
4. Site No. 17/Lot 69	Organics detected (all volatile). Maintenance Facility constructed over area in 1982. Need more data.
5. Site No. 20/Tank Farm Area	After remedial action (tank removal) chlorinated solvents in ground water still high and inorganics increased? Soil still contaminated with oil/grease. Further confirmation is needed.
6. Site No. 21/Building 210 Buried Tank	Leaking tank replaced, no soil data, groundwater high in TOC, no gasoline analysis.
7. Site No. 26/Building 43 Refueling Station	No data available - need confirmation sampling.
8. Site No. 33/PCB Hotspot	Removal of PCB contamination in 1988. Need confirmation data.

4.4 Sites in RI/FS Process

This section contains those sites which, based on present knowledge, need to be included in a basewide RI/FS document.

Site No./Location	Rationale
1. Site No. 1/Landfill No. 1	Organics/inorganics present, leachate observed, possible source of ground and surface water contamination.

	Site No./Location	Rationale
2.	Site No. 3/Landfill No. 7	Organics detected in monitoring well, possible source of ground and surface water contamination.
3.	Site No. 24/Building 101 Fire Demo Area	Inorganics in groundwater, organics in soil.
4.	Site No. 25/T-9 Storage Area	Organics and inorganics in soil and groundwater.
5.	Site No. 31/Three Mile Creek	Organics and inorganics in water and soil sediment.
6.	Site No. 32/Six Mile Creek	Organics and inorganics in water and soil sediment.

4.5 Other

Site No. 28/Landfill No. 4 contains low-level radioactive vacuum-tubes. The cylinder in which these are contained was sealed with concrete in 1977. No monitoring wells have been installed. To eliminate long term monitoring of the site, the radioactivity of the vacuum tubes should be determined and, if necessary, the tubes should be exhumed and disposed of offsite at a radioactive disposal facility.

5.0 General Basewide Recommendations

The EPA Office of Solid Waste and Emergency Response published a directive titled "Guidance for Conducting Remedial Investigations and Feasibility Studies" (OSWER Directive 9335.3-01) in March 1988. This document provides the format for a Remedial Investigation/Feasibility Study (RI/FS) document and identifies the specific information required to be in the document. The EPA Region II draft report Griffiss Air Force Base, Technical Review of Documents is a comparison of the IRP reports and other records provided by GAFB with the OSWER Directive 9335.3-01.

A review of the EPA and GAFB documents results in the following basewide activities necessary to provide the information needed in the RI/FS and to provide information necessary for further evaluation of the specific sites included in the RI/FS.

5.1 Hydrogeologic Study

Surface water onto, on, and off base is shown in Figure 2.5 and reported in the IRP Phase 1 document. Additional information is required on water flow, quality, and chemistry. In particular organic/inorganic analysis prior to entering the base, at selected points on base to determine site leachate inclusion, and at exit points from the base.

Subsurface groundwater information is not available except depth to groundwater as noted in monitoring well reports at some sites. A basewide subsurface water characterization is required for the RI/FS and is critical to evaluating remediation alternatives at those sites with identified groundwater contamination. After groundwater flow(s) and direction(s) are determined, then organic/inorganic analyses will be needed at entrance/exit points of GAFB, and at selected points on base to determine sources of contamination. The extent of this effort is that which is necessary to define any plumes of groundwater contamination on base and any that exit the base.

5.2 Public Health Assessment

This is a required section in the RI/FS and is necessary to assure the public that remediation activities will not endanger their health. This effort requires knowledge of the contamination, transport mechanisms (air, soil, or water), receptors, and effect on receptors. This data is necessary to complete the evaluation of remediation technologies which is the Feasibility Study (FS) part of the RI/FS. A public health assessment must be provided for the selected remediation activity in order for the EPA to reach a Record of Decision.

In order to conduct a Public Health Assessment, the following additional information is needed.

5.2.1 Meteorological/Climatological Study

Phase I (IRP) provided monthly precipitation data (Table 2.1) and annual means. The same type of information needs to be compiled for temperatures and winds. In particular, the information for winds should present velocity, direction, and chemical analysis sufficient to evaluate this important transport mechanism for contaminant transport during a remediation activity.

5.2.2 Demographic/Socioeconomic Study

The Phase I (IRP) report provided generalize population density and land use in 1980. This information needs to be updated and expanded to specific data on populations and land use surrounding the base and should be mapped with reference to the base and the RI/FS sites. This information is necessary to define the potential receptor(s) in the Public Health Assessment.

There doesn't appear to be any information on the socioeconomics of the base on the local area. This information needs to be compiled to evaluate the impact of any significant remediation activity on the area. Concerns such as transportation, lodging, available work force, local supplies, and economics of the area should be addressed.

5.2.3 Offbase Contamination Study

The State of New York reported that chlorinated ethylene compound contamination of a monitoring well off base has been detected. There is no confirmation that this contamination is a result of Griffiss AFB, nor are the levels of contamination above EPA action levels.

Therefore, no immediate action is required. However, a file should be implemented and maintained to accumulate information on off base contamination and its media, location, and levels. If information is obtained during the Base Hydrogeological Study or the Remedial Investigation activities that contamination is moving off the base, as a result of base activities, then this off base contamination file should be cross checked to determine if there is a possibility of the base being a responsible party. If the base is a responsible party, then an agreement would be needed between Griffiss AFB and the State of New York defining U.S. Air Force involvement in off base activities.

6.0 Prioritization of Tasks

Griffiss AFB is on the EPA National Priority List (NPL) for Federal Facilities. As such, the most significant requirement is that an EPA Record of Decision must be obtained for the remediation of identified hazardous waste sites on base, and EPA requires a Remedial Investigation/Feasibility Study document prepared in accordance with "Guidance for Conducting Remedial Investigation and Feasibility Studies" (OSWER Directive 9335.3-01)

In order to prepare this document in the most timely and cost effective manner, the following prioritization of activities is suggested. Following each item is a rationale statement and an estimate of the amount of time to complete the activity.

6.1 Priority I Items

6.1.1 Basewide Hydrogeological Study. This information is vital to the RI/FS and is expected to require 9-12 months. It is anticipated that this activity has the highest priority of all activities and should begin as soon as possible - Ref. Section 5.1.

6.1.2 Further Confirmation Sites. These sites (Ref. Section 4.3) do not have enougn information to write "No Further Action Documents" or to include in the RI/FS process. In general, confirmation sampling and analysis needs to be performed in order to provide the necessary data. This effort needs to start as soon as possible and can be accomplished in conjunction with all other activities. It is estimated to require 6-9 months to complete.

6.1.3 No Further Action Documents

The sites listed in Section 4.2 need to have individual "No Further Action Documents" prepared and submitted to EPA to obtain written EPA concurrence. This effort needs to be completed prior to starting the actual RI effort in order to delete as many sites as possible from the process. As more sites are confirmed, in the above "Confirmation" activity, they should be documented to EPA or included in the RI/FS. This activity should start immediately and the documents for the sites listed in Section 4.2 could be prepared in less than three months. This activity would not actually close until the last No Further Action Document for the last site has written concurrence by EPA.

6.1.4 RI/FS Work Plan

In order to ensure efficient cost effective performance of the activities required in an RI/FS, it is necessary to develop an RI/FS Work Plan which defines the scope and schedule of the subtasks required in the EPA "Guidance for Conducting Remedial Investigation and Feasibility Studies" (OSWER Directed

9335.3-01). The Work Plan also provides the basis of cost estimates. This activity could start immediately, but cannot be finalized until completion of the hydrogeological study and determination from the confirmation study of those sites to be included in the RI/FS process. It is estimated to take approximately four months.

6.2 Priority II Items

6.2.1 RI/FS. Complete those items identified in the Work Plan (Section 6.1.4) and compile in the EPA prescribed format to provide the RI/FS document. This effort is expected to take 8-10 months and concludes the Priority I and II activities into the prime deliverable, the RI/FS document for Griffiss AFB to submit to the State of New York and EPA, Region II. As shown in Figure 6.1, this will take approximately 24 months.

6.3 Follow-on Activities

It will be necessary to resolve any comments from EPA/State of New York during their review of the RI/FS document and following the public hearing. When this review/comment period is complete, EPA will issue a Record of Decision approving the RI/FS. This process should take less than six months, but is dependent upon EPA and the time necessary to resolve comments.

Following a Record of Decision, a Remedial Engineering Design Document (REDD) should be prepared that provides the design and applied engineering analysis of the technology(ies) identified in the RI/FS for the sites. For those sites requiring construction type activity, the REDD provides the basis for a Construction Management Plan which identifies the scope, schedule, subcontracting, and budget required to remediate the sites. All remediation activities must include a confirmatory sampling and analysis effort to provide the data necessary to close the site and write a "No Further Action" document.

An estimate to complete this activity cannot be given at this time due to the number of sites, the number of contaminants, the lack of groundwater information, and regulatory response. However, it can be anticipated to be at least 24 months after the RI/FS is submitted, and therefore it will take 3-5 years to remove Griffiss AFB from the NPL. It is suggested that this overall management plan be reviewed and updated on an annual basis to incorporate information obtained and account for future requirements.

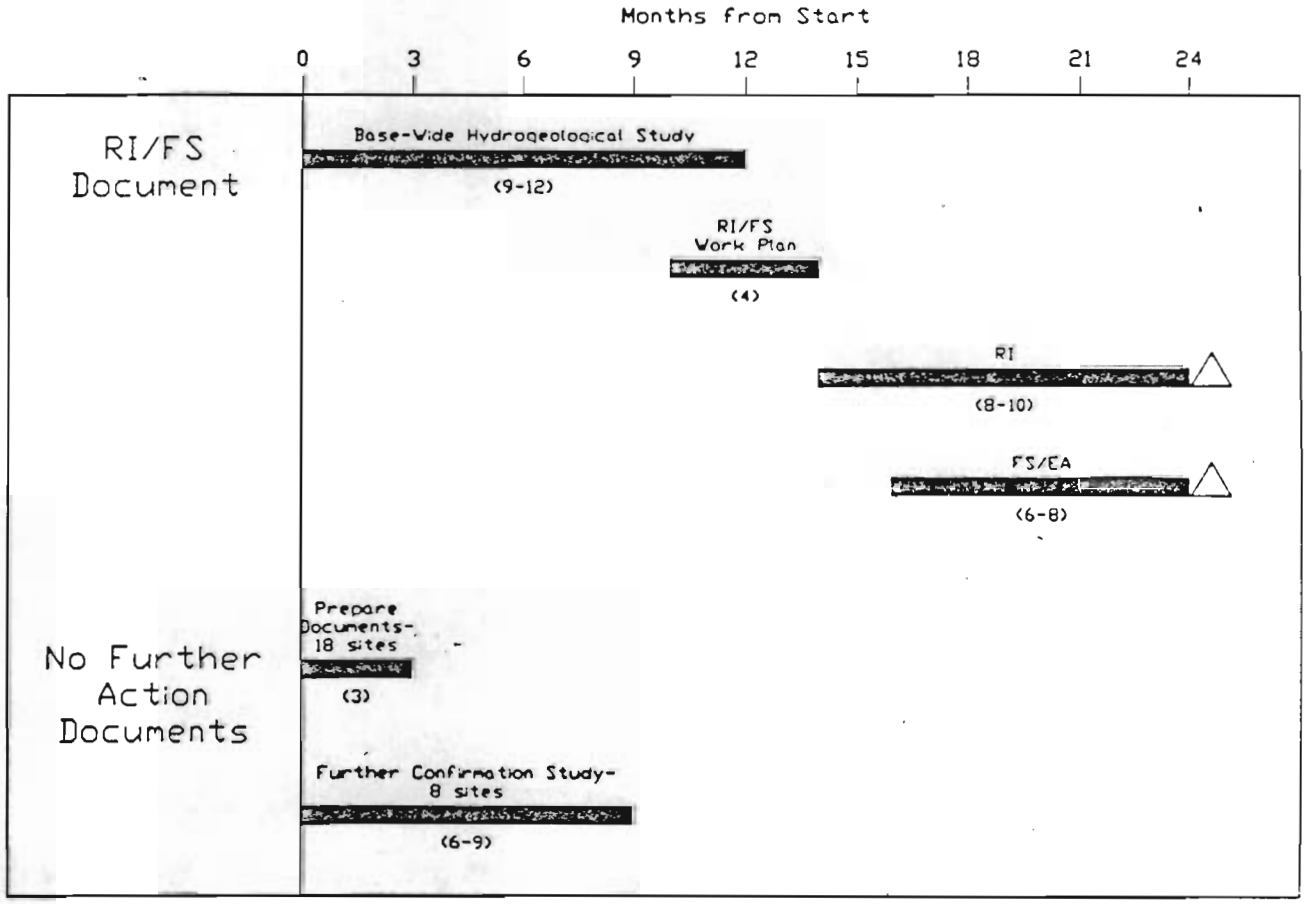


Figure 6.1 Overall IRP Activities for Griffiss AFB

7.0 Conclusions

Griffiss AFB is on the National Priority List (NPL) for Federal Facilities. As such, all actions taken in the hazardous waste/environmental areas of identified Installation Restoration Program (IRP) sites are governed by the regulations imposed by Section 120(e)(1) & (2) of CERCLA, Sections 6001, 3008(h) and 3004 (u) and (v) of RCRA, Executive Order 12580, the National Environmental Policy Act, 42 U.S.C. Section 4321, and the Defense Environmental Restoration Program (DERP), 10 U.S.C. Section 2701 et seq.

In brief, these regulations require written EPA concurrence of a "No Further Action" on a site or the site becomes part of the Remedial Investigation/Feasibility Study (RI/FS) process. Following a Record of Decision (ROD) on the RI/FS, a Remedial Engineering Design (RED) and Construction Management Plan (CMP) are developed to design and manage the remediation of the site. This process culminates with a "No Further Action" having written EPA concurrence. When all thirty-five (35) identified sites have written EPA concurrence of "No Further Action," Griffiss AFB will be removed from the NPL.

This document presents an overview of the present thirty-five (35) IRP sites, assesses the status of each site against regulatory requirements, evaluates the actions to be taken and schedule required in order to meet those requirements and compiles the information into one document.

It is concluded that eighteen (18) of the present sites can have "No Further Action Documents" prepared for submittal to EPA. Another eight (8) sites need more data but it is anticipated that the data will allow these sites to be included in "No Further Action."

The number of sites to be included in the RI/FS process is six (6) and finally, site number 28/Landfill No. 4 should be exhumed and shipped to an approved low level radioactive waste disposal site. (It should be noted that site number 19 is included in site number 8 and site number 29 is included in site number 2.)

In order to complete the RI/FS, site information is required for those sites included, and basewide information is required in hydrogeology and factors considered in Public Health assessment. The hydrogeologic study should begin as soon as possible and should be completed prior to initiating RI/FS activities. To obtain the necessary and required information and compile into the format for presentation to EPA is estimated to take up to 24 months. Following a Record of Decision by EPA, remediation is anticipated to take an additional 18-24 months minimum, therefore it will take 3-5 years minimum to remove Griffiss AFB from the NPL.

It is recommended that this Overall Management Plan be reviewed and updated on an annual basis.

Note: Although not part of this plan, the following is included for the information of the reader. At a similar Air Force base (Military Airlift) a cost estimate of $1.2 million has been prepared to produce a RI/FS for eight (8) IRP sites. This amount of FY-1988 dollars does not include escalation or management reserve.

8.0 References

Draft Work Plan for Remedial Investigations/Feasibility Studies, prepared for 439th Air Base Group and 439th Military Airlift Wing, Westover Air Force Base, Massachusetts.

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