Engineering Evaluation/Cost Analysis Report for Dry Well 100 at the Former Griffiss Air Force Base
Rome, New York

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Prepared for:
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List of Abbreviations and Acronyms

AFB	Air Force Base
AMSL	above mean sea level
AOC	Area of Concern
AOI	Area Of Interest
ARAR	Applicable or Relevant and Appropriate Requirement
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DEQPPM	Defense Environmental Quality Program Policy Memorandum
DoD	Department of Defense
DOT	Department of Transportation
DQO	Data Quality Objective
DRY-100	Dry Well 100
E & E	Ecology and Environment, Inc.
EE/CA	Engineering Evaluation/Cost Analysis
FFS	Focused Feasibility Study
GLDC	Griffiss Local Development Corporation
IRA	Interim Remedial Action
IRP	Installation Restoration Program
J	estimated
MCL	Maximum Contaminant Level
mg/Kg	milligrams per kilogram
NCP	National Contingency Plan
NYSDEC	New York State Department of Environmental Conservation
OHM	OHM Remediation Services
PCB	polychlorinated biphenyl
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
SARA	Superfund Amendments and Reauthorization Act
SB	site background
SVOC	semivolatile organic compound
TAGM	Technical and Administrative Guidance Memorandum
TAL	Target Analyte List
TBC	to be considered
TCL	Target Compound List
TOGS	Technical and Operational Guidance Series
TRPH	total recoverable petroleum hydrocarbon
TSCA	Toxic Substances Control Act

List of Abbreviations and Acronyms (cont.)

USAF	United States Air Force
USEPA	U.S. Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound

1 Introduction

This Engineering Evaluation/Cost Analysis (EE/CA) report has been prepared in support of the proposed removal action at the Dry Well 100 (Dry-100) site that was identified as an Area of Concern (AOC) at the former Griffiss Air Force Base (AFB) in Rome, New York. This EE/CA has been prepared pursuant to Section 300.415(b)(4)(i) of the National Contingency Plan (NCP).

The objectives of this EE/CA report are to:

- Satisfy environmental review requirements for a Source Removal Action;
- Satisfy administrative record requirements (documentation of removal action selection); and
- Provide the framework for evaluating and selecting alternative technologies.

This EE/CA provides a comparative analysis of three alternatives for a site identified as suitable for implementation of a non-time-critical interim remedial action (IRA) for soil contamination at the former Griffiss AFB. These alternatives were identified in the Focused Feasibility Study (FFS) completed in July 2002 (E & E 2002) as the most applicable technologies for this IRA.

1.1 The United States Air Force Installation Restoration Program

This EE/CA report was prepared as part of the United States Air Force (USAF) Installation Restoration Program (IRP) in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (i.e., Superfund). The purpose of the USAF IRP is to assess past hazardous waste disposal and spill sites at USAF installations and to develop remedial actions consistent with the NCP for sites that pose a threat to human health and welfare or the environment. This section presents information on the program origins, objectives, and organization.

In 1980 Congress enacted CERCLA, which outlines the responsibility for identifying and remediating contaminated sites in the United States and its possessions.

CERCLA legislation identifies the United States Environmental Protection Agency (USEPA) as the primary policy and enforcement agency regarding contaminated sites.

In 1986, the Superfund Amendments and Reauthorization Act (SARA) extended the requirements of CERCLA and modified CERCLA with respect to goals for remediation and the steps that lead to the selection of a remedial process. Under SARA, technologies that provide permanent removal or destruction of a contaminant are preferable to action that only contains or isolates the contaminant. SARA also provides for greater interaction with public and state agencies and extends USEPA's role in evaluating health risks associated with contamination. Under SARA, early determination of Applicable or Relevant and Appropriate Requirements (ARARs) is required, and the consideration of potential remediation alternatives is recommended at the initiation of a Remedial Investigation/Feasibility Study (RI/FS). SARA is the primary legislation governing remedial action at past hazardous waste disposal sites.

Executive Order 12580, adopted in 1987, gave various federal agencies, including the Department of Defense (DoD), the responsibility to act as lead agencies for conducting investigations and implementing remediation efforts when they are the sole or co-contributors to contamination on or off their properties.

To ensure compliance with CERCLA, its regulations, and Executive Order 12580, the DoD developed the IRP, under the Defense Environmental Restoration Program, to identify potentially contaminated sites, investigate, and evaluate and select remedial actions for potentially contaminated facilities. The DoD issued the Defense Environmental Quality Program Policy Memorandum (DEQPPM) 80-6 regarding the IRP program in June 1980, and implemented the policies outlined in this memorandum in December 1980. The NCP was issued by USEPA in 1980 to provide guidance on a process by which (1) a contaminant release could be reported, (2) contamination could be identified and quantified, and (3) remedial actions could be selected. The NCP describes the responsibility of federal and state governments and those responsible for contaminant releases.

The DoD formally revised and expanded the existing IRP directives and amplified all previous directives and memoranda concerning the IRP through DEQPPM 81-5, dated 11 December 1981. The memorandum was implemented by a USAF message dated 21 January 1982.

The IRP is the DoD's primary mechanism for response actions on USAF installations affected by the provisions of SARA. In November 1986, in response to SARA and other USEPA interim guidance, USAF modified the IRP to provide for an RI/FS program. The IRP was modified so that RI/FS studies could be conducted as parallel activities rather than serial activities. The program now includes SARA determinations, identification and screening of technologies, and development of alternatives. The IRP may include multiple field activities and pilot studies prior to a detailed final analysis of alternatives. Over the years, requirements of the IRP have been developed and modified to ensure that DoD compliance with federal laws, such as RCRA, NCP, CERCLA, and SARA, can be met.

2 Site Description and History

This section describes the Base location and history; provides detailed descriptions of the site and its history; discusses the regional and site-specific topography, geology, hydrogeology, hydrology, and meteorology; and presents available information regarding the nature of contamination at the site.

2.1 Location and History

The Dry-100 site is located inside the generator room on the south side of Building 100, an inactive aircraft maintenance hangar located in the central portion of former Griffiss AFB (see Figures 2-1 and 2-2). The former dry well consisted of a perforated 55-gallon drum directly under the floor slab of the generator room, between two active generators used for emergency lighting and power generation. In 1998 PCB contamination was detected in a sample taken from the sludge in the drum. In July 2000, OHM completed a removal action where the drum was removed from the site, and soil down to approximately 4 feet was excavated and disposed off-site. The excavation could not be expanded due the presence of two active generators in the building. Characterization sampling indicated that elevated PCB concentrations still remain at the site.

2.2 Environmental Description

2.2.1 Topography and Surface Features

The former Griffiss AFB lies within the Mohawk Valley between the Appalachian plateau and the Adirondack Mountains. The topography across the former base is relatively flat with elevations ranging from 435 to 595 feet above mean sea level (AMSL). The highest elevations are to the northeast. A rolling plateau northeast of the former base reaches an elevation of 1,300 feet.

The New York State Barge Canal and the Mohawk River valley lie south of the base at approximately 430 feet AMSL.

The immediate area of the Dry-100 site is an industrial setting that has little or no change in topography. The area surrounding Building 100 is completely paved.

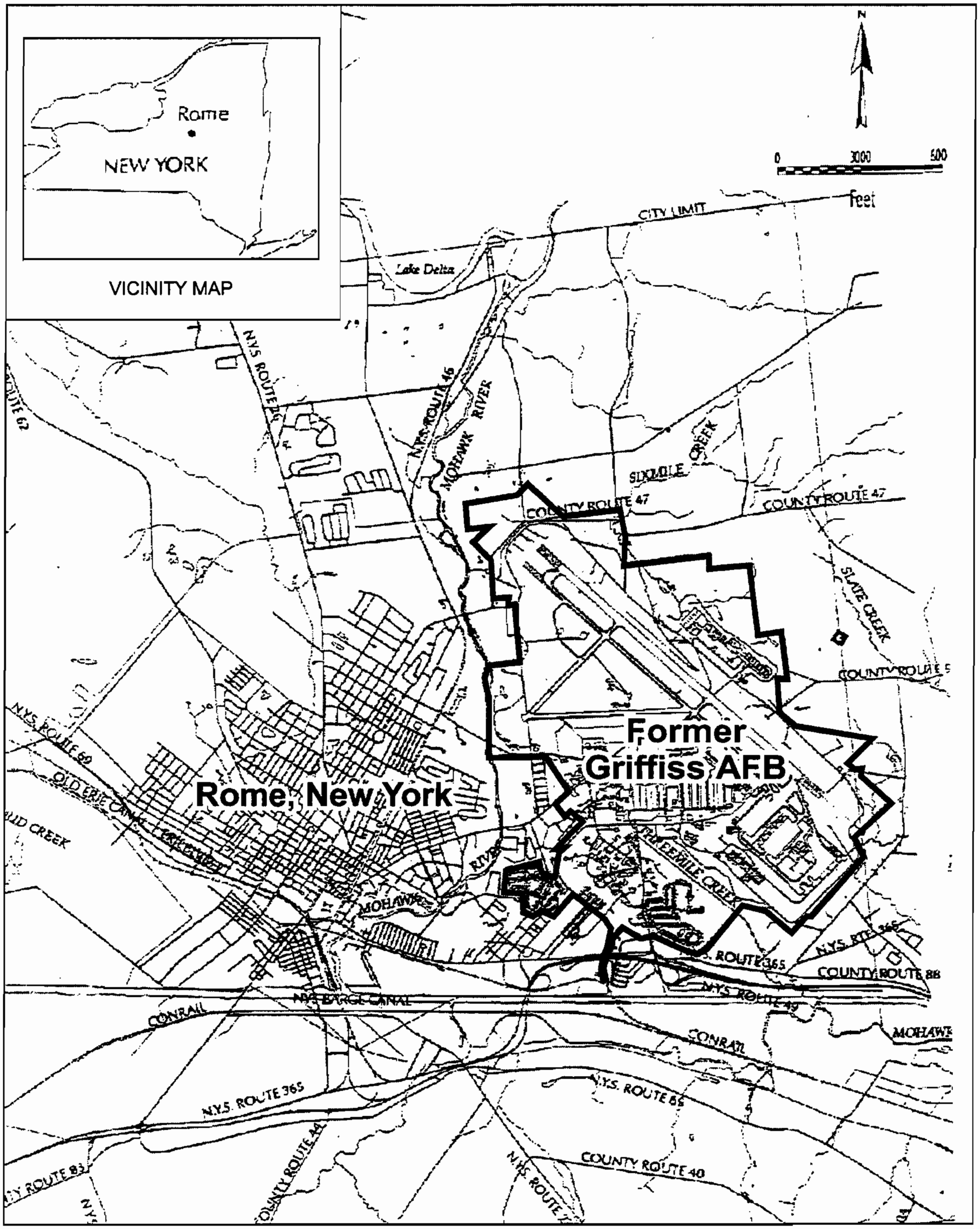
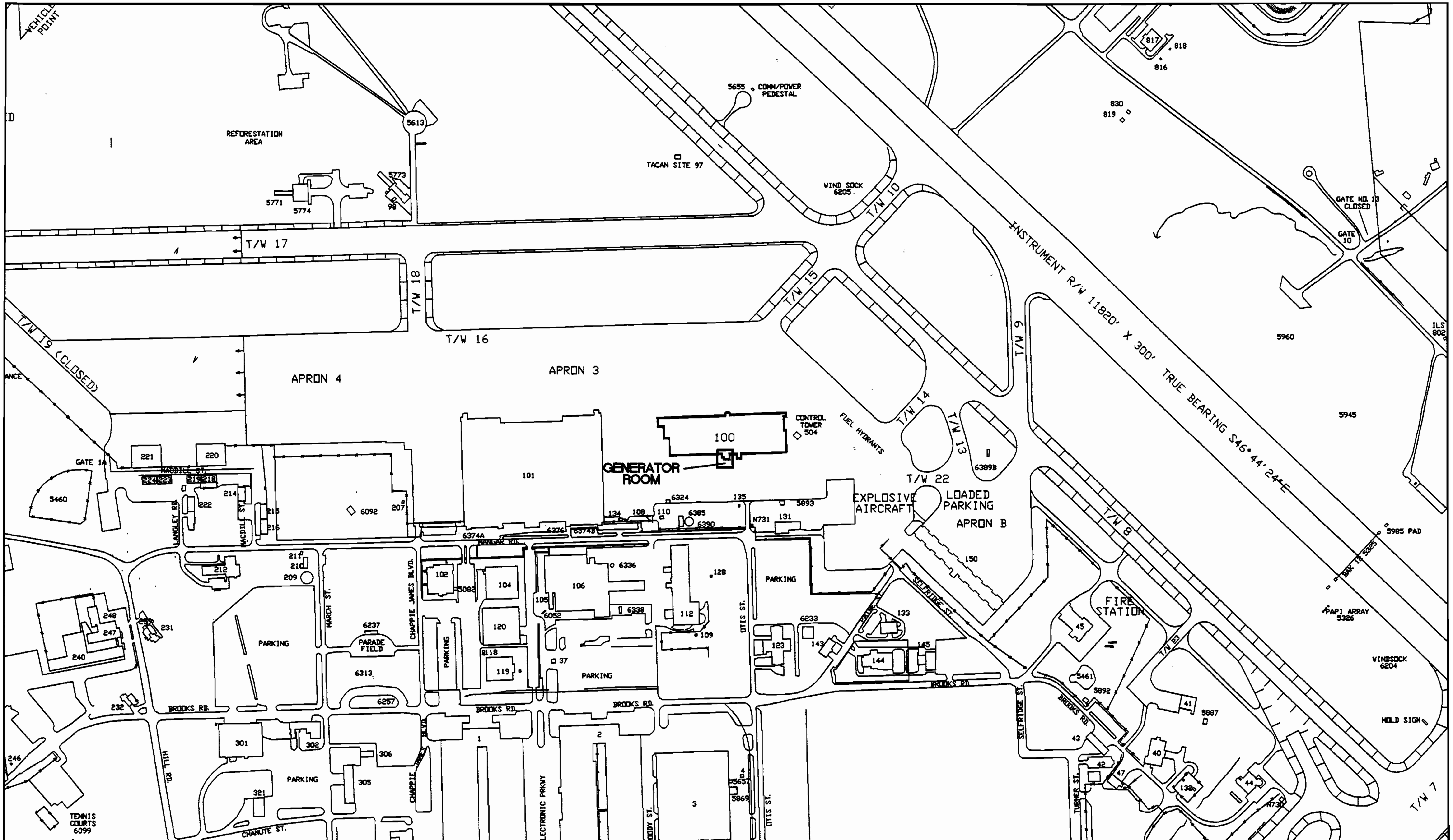


Figure 2-1 ormer Griffiss AFB – Site Location Map



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NO.	DATE	DRN	APP'D	DESCRIPTION
				REVISIONS

ecology and environment engineering, p.c.
International Specialists in the Environment

DESIGNED BY: B. MEYERS	CHECKED BY: W. KAWAR
DRAWN BY: K. KRAJEWSKI	APPROVED BY: D. ALBERS

FORMER GRIFFISS AIRFORCE BASE

ROME NEW YORK

FIGURE 2-2
BUILDING 100 LOCATION

SCALE	DATE ISSUED	C.A.D. FILE NO.	DRAWING NO.	REV.
1"=500'	1/17/02	Build100a.dwg		

2.2.2 Geology

Unconsolidated sediments at the former Griffiss AFB consist primarily of glacial till with minor quantities of clay and sand and significant quantities of silt and gravel. The thickness of these sediments ranges from 0 to 12 feet in the northeast to 130 feet in the south. In general, the average thickness of the unconsolidated sediments is 25 to 50 feet in the central portion and 100 to 150 feet in the south and southwest portions of the former base. The bedrock beneath the base is composed of black Utica shale. The bedrock generally slopes from the north to the south and southwest. The depth to bedrock ranges from 0 foot on the north side to as much as 150 feet on the south side.

The site-specific geology in the vicinity of the Dry-100 site is characterized by a 12- to 13-foot-thick layer of coarse to fine sands with gravel; and approximately 6 inches of fill material under the building floor slab consists of crushed stone.

2.2.3 Hydrogeology

The shallow water table aquifer at the former Griffiss AFB lies within the unconsolidated sediments, where depth to groundwater ranges from ground surface to 57 feet below ground surface (bgs). Most groundwater at the base is encountered within 20 feet bgs. The shallow groundwater flow across the base generally moves from the topographic high in the northeast towards the Mohawk River and New York Barge Canal in the south. There are several creeks that act as discharge areas for shallow groundwater. Drainage culverts and sewers installed throughout the base also act as a discharge conduit for subsurface water.

The groundwater in the vicinity of the Dry-100 site exists under unconfined conditions within the unconsolidated aquifer. Groundwater was encountered approximately 12.6 feet bgs and flows in a south, southwesterly direction.

2.2.4 Meteorology

The former Griffiss AFB experiences a continental climate characterized by warm, humid, moderately wet summers and cold winters with moderately heavy snowfalls. Because of its flat topography and high average precipitation, the former base is considered a groundwater recharge zone. The mean annual precipitation is 45.6 inches and the mean annual snowfall is 107 inches. The evapotranspiration rate is 23 inches. The average temperature during the winter season is 20° Fahrenheit (F). Temperatures during the spring, summer, and fall vary from 31 to 81° F. The prevailing winds are from the southwest, with an average wind speed of 5 knots.

2.3 Demographic Profile

The former Griffiss AFB has a daytime population of approximately 3,500. This population includes Department of Defense employees and employees at the Griffiss Business and Technology Park.

2.4 Current and Future Site Use

The Dry-100 site is located inside the generator room on the south side of Building 100. Building 100 site is currently an inactive aircraft maintenance hangar located in the central portion of former Griffiss AFB. The generator room has two active generators that serve as a backup power source for base facilities. The future use of the site is assumed to remain the same at the time this report was published.

3 Site Characterization

3.1 Previous Investigations

During a site investigation conducted by E & E in 1998 (E & E 1998), polychlorinated biphenyls (PCBs) were detected at a concentration of 1,900 milligrams per kilogram (mg/kg) in sludge found in the bottom of Dry-100. Fourteen metals, benzo(b)fluoranthene, and benzo(a)pyrene were also detected at concentrations higher than NYSDEC TAGM 4046 criteria. Total recoverable petroleum hydrocarbon (TRPH) was also detected at a concentration of 15,000 mg/kg. One subsurface soil sample was also collected from a temporary well installed 5 feet outside Building 100. No PCBs were detected in this soil sample. One volatile organic compound (VOC) and three semivolatile organic compounds (SVOCs) were detected in this sample below New York State Department of Environmental Conservation (NYSDEC) standards. No metals were detected in this sample above NYSDEC recommended soil cleanup objectives (see Appendix C). As part of this investigation, one groundwater sample was also collected from this temporary well (D100-SS01GW) (see Appendix B) and analyzed for the target compound list (TCL) VOCs, TCL SVOCs, PCBs, and TRPH. No VOCs or PCBs were detected in this groundwater sample (see Appendix C). Three SVOCs were detected at concentrations below NYSDEC Class GA groundwater standards. Several metals were detected in the unfiltered sample at concentrations exceeding NYSDEC and Maximum Contaminant Level (MCL) criteria; however, only manganese was detected in the filtered sample above screening criteria. One groundwater sample was also collected from the permanent monitoring well (100MW01) at the former underground storage tank (UST), UST-100 south of Building 100. No VOCs or SVOCs exceeding regulatory limits were detected in the groundwater sample collected from this well. It should also be noted that no VOCs, SVOCs, or PCBs exceeding regulatory limits were detected in the quarterly groundwater samples collected from November 1992 through September 1993 from 100MW01, which were analyzed for VOCs, SVOCs, pesticides/PCBs, metals, cyanide, and ethylene glycols (Law 1994) (see Appendix C).

In July 2000, OHM Remediation Services (OHM) completed an interim remedial action, which included removal of the dry well (a 55-gallon steel drum), and excavation and off-site disposal of visually contaminated soil. The remedial activities were based on the preliminary site assessment completed by OHM in June

2000. Wipe samples collected from the floor of Building 100 showed PCB concentrations ranging from 3.68 to 22.4 g/100 cm^2. Two groundwater samples were collected from Geoprobe borings GW01 and GW02 (see Appendix B) immediately downgradient of Dry-100 (approximately 5 feet south of the generator building). Locations of these samples are shown in Appendix B. Groundwater was encountered 12.6 feet bgs. These groundwater samples were analyzed for VOCs, SVOCs, Target Analyte List (TAL) metals, and PCBs. No PCBs were detected in either the filtered or unfiltered samples. Chloroform, methylene chloride, trichloroethene, and bis(2)ethylhexyl phthalate were detected at concentrations lower than their respective NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 limits.

Following the initial site assessment, a 30-inch by 32-inch hole was cut into the concrete floor of the generator room, and the 55-gallon steel drum was removed (see Appendix B). Contaminated soil was removed to a depth of 44 inches below the surface and properly disposed of off site at CWM Chemical Services, LLC, Model City, New York. Based on OHM's observation, the soil was extremely dense and compact. Soil removal was stopped at that depth due to the proximity of the generators and the south wall; however, residual subsurface contamination remained at the site. Initially, five grab soil samples (D100SS01 through SS05) were collected from the walls and bottom of the excavation and analyzed for PCBs. Reported PCB concentrations ranged from 48 mg/kg on the east wall to 700 mg/kg on the south wall. (The PCB concentration at the bottom of the excavation was 330 mg/kg.)

Based on the level of effort involved in expanding the excavation within the generator room, a decision was made not to conduct further remediation and to collect soil characterization samples from the two walls with the highest PCB concentrations and from the excavation bottom. Soil characterization samples were collected from the north wall, south wall, and bottom of the excavation and analyzed for TCL VOCs, SVOCs, PCBs, and TAL metals. The excavated area was lined with plastic sheeting and backfilled with clean borrow soil to within 15 inches of the floor surface. Six inches of crushed stone and reinforced concrete was then used to restore the concrete floor over the excavated area.

PCB Aroclor 1254 was detected in all three soil characterization samples at concentrations ranging from 124.8 to 335.6 mg/kg, higher than the Technical and Administrative Guidance Memorandum (TAGM) 4046 criteria of 10 mg/kg for soils at depths of 10 inches or more bgs. In addition, the results of the soil samples collected from these locations indicated the presence of 1,2,4-trichlorobenzene (a common component of transformer oils) at concentrations ranging between 13.4 and 50.3 mg/kg, higher than the TAGM 4046 criteria of 3.4 mg/kg. Chrysene (0.83 estimated [J] mg/kg), benzo(b)fluoranthene (1.1J mg/kg), benzo(a)anthracene (0.74J mg/kg), and benzo(a)pyrene (0.66J mg/kg) were detected in the bottom wall sample at or higher than their respective TAGM 4046 criteria of 0.4, 1.1, 0.224, and 0.061 mg/kg. Cadmium, mercury, potassium, sodium, and zinc were also detected higher than site background (SB) or TAGM 4046 criteria in at least one sample. SB concentrations for metals at the former Griffiss AFB are presented in the *Draft Report for Expanded Site Investigation and Conformity Sampling of Areas of Interest and Drywell/Wastewater-Related Systems* (E & E 1998). Cadmium and mercury were detected at concentrations of 2.61 and 1.1 mg/kg in the sample from the bottom of the excavation. Selenium, arsenic, and lead were present in at least one of the samples higher than SB (0.349, 4.9, and 36 mg/kg respectively) but lower than their respective TAGM 4046 criteria. Concentrations higher than TAGM 4046 and SB levels were detected twice for sodium and once for zinc and potassium. Finally, calcium was higher than SB levels in all three samples.

In addition to the removal of Dry-100, OHM decontaminated the generator room floor several times until the USEPA PCB action level of 10 µg/100 cm^2 (40 CFR 761.125[b][1]) was attained through confirmation wipe samples.

3.2 Nature and Extent of Contamination

Soil contamination remains at the Dry-100 site. The primary contaminants of concern at the site are PCBs. Residual PCB contamination is present in subsurface soils at depths exceeding approximately 4 feet bgs. Although other relatively low-level hydrocarbon contamination was detected during the Dry-100 removal, PCBs will be used as an indicator compound for the site, because other low-level contaminants at the site are related to the presumed source of the PCBs. In addition, removal/treatment of PCB contaminated soil will inherently remove/treat other low-level contaminants at the site. Since no PCBs were detected in groundwater samples collected downgradient of the site, groundwater remediation is not addressed further in this EE/CA report.

Soil samples were collected prior to and after removal of Dry-100 in July 2000. Soil samples from the excavation at a depth of approximately 4 feet bgs indicated PCB contamination (Aroclor 1254) ranging from 48 to 700 mg/kg. Since neither the lateral nor vertical extent of contamination is known, and for purpose of developing budget remedial cost estimates, E & E assumed that the area of contamination is approximately 80 square feet and extends to immediately above the reported groundwater depth of approximately 12.6 feet (see Figure 3-1). The volume of contaminated soil is therefore estimated at approximately 40 cubic yards. Note that this volume does not include the soil volume from the original excavated area of Dry-100.

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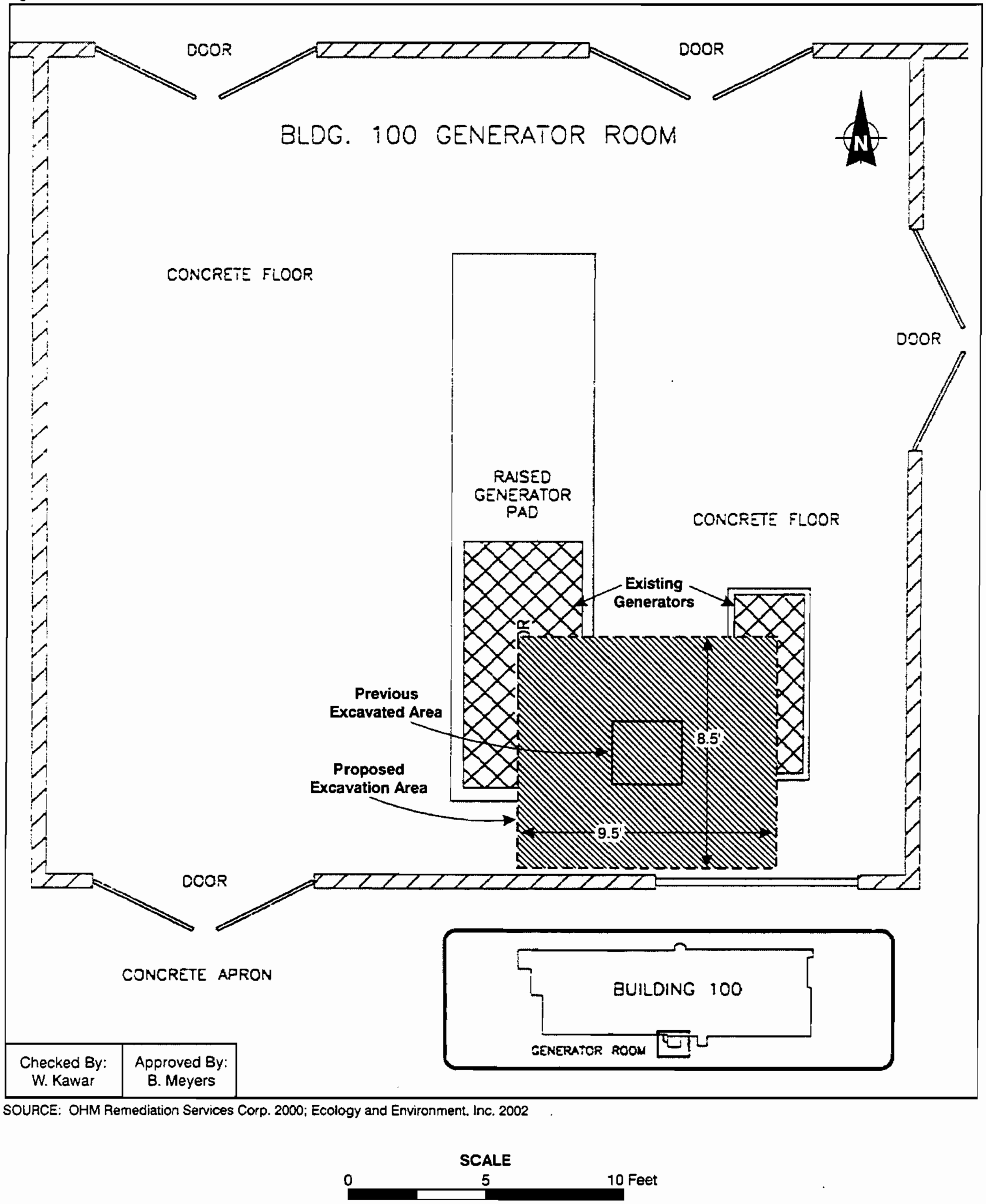
Fig3-1.CDR-1/22/03-GRA



SOURCE: OHM Remediation Services Corp. 2000; Ecology and Environment, Inc. 2002

Figure 3-1 Assumed Extent of PCB Contamination

4 Identification of Response Action Objectives

The primary objective of the response action alternatives is to comply with the ARARs to the fullest extent possible, with consideration of costs and the feasibility of implementation.

4.1 Definition of Removal Scope

The scope of this response action encompasses the removal of contaminated soil from the Dry-100 site to the extent practical so that it no longer poses a threat to human health or the environment.

4.2 Specific Response Action Objectives

The following are specific objectives for this removal action:

- Remove and properly dispose of contaminated soil material above the proposed soil cleanup criteria for contaminants of concern;
- Define and characterize the extent of any remaining on-site contamination;
- Properly dispose of miscellaneous construction and demolition debris;
- Relocate existing generators;
- Maintain a source of backup power to meet base requirements during removal action;
- Complete the removal action in the shortest practical time period; and
- Restore the site and the two existing generators as an emergency power source.

4.3 Applicable or Relevant and Appropriate Requirements

Applicable requirements are defined as those promulgated federal, state, and local requirements that specifically address a hazardous substance, or contaminant found at the site. Relevant and appropriate requirements are those promulgated federal, state, and local requirements that, while not applicable, address problems sufficiently similar to those encountered at the site that their application is appropriate.

In addition to ARARs, there are non-promulgated advisories or guidance referred to as "to be considereds" (TBCs). TBCs may be used to determine cleanup levels when ARARs do not exist or when use of ARARs alone would not be protective of human health or the environment. TBCs are not legally binding, however, if a TBC is selected, it becomes a performance standard to which the following selected response actions must comply.

- Chemical-specific ARARs establish numerical standards limiting the concentration of substances in the media of concern and/or the media affected by the response action;
- Location-specific ARARs are restrictions or considerations placed upon the conduct of activities in critical environments such as floodplains, wetlands, endangered species habitats, or historically significant areas; and
- Action-specific ARARs are technology or activity based restrictions controlling the response action, and include performance and design standards.

A summary of the potential ARARs and TBCs for the former Griffiss AFB is provided in Table 4-1. This table was used in the evaluation of alternatives described in Section 5 of this report.

Table 4-1 ARARs or TBCs[1]

Type	Citation
Chemical-Specific	
Requirements for PCB Spill Cleanup (TSCA)	40 CFR part 761.125(c)(4)(v)
Identification and Listing of Hazardous Waste	40 CFR Part 261
State of New York, Technical Administrative Guidance Memorandum TAGM 4046.	NYSDEC TAGM 4046 (revised 12/20/2002)
EPA Guidance on Remedial Actions for Superfund Sites with PCB Contamination	EPA/540/G-90-007
Location-Specific	
None	
Action-Specific	
USEPA National Ambient Air Quality Standards	40 CFR Part 50
Resource Conservation and Recovery Act	
■ Hazardous Waste Management System	40 CFR Part 260
■ Standards For Transporters of Hazardous Waste	40 CFR Part 263
■ Standards for Generation, Temporary Storage, and Shipment of Hazardous Waste.	40 CFR Part 262 Subparts A, B, C, and D

Table 4-1 ARARs or TBCs[1]

Type	Citation
■ Land Disposal Restrictions	40 CFR Part 268
Occupational and Health Safety Act (OSHA)	29 CFR Parts 1904, 1910, and 1926
Department of Transportation (DOT) Rules for Hazardous Materials Transport	49 CFR Parts 107 and 171-173
USEPA's Revised Procedures for Planning and Implementing Off-Site Response Actions	OSWER Directive #9834.11

1. When Federal Citations are referenced, State and Local Citations also apply when more stringent.
2. Technical and Administrative Guidance Memorandum (TAGM).

5 Evaluation of Alternatives

This section identifies the response action alternatives, describes the evaluation process utilized in selecting the best alternative, and evaluates the alternatives.

5.1 Response Action Alternatives

Three alternatives are presented as viable response actions that should be further evaluated so that the best alternative can be utilized. These alternatives address the cleanup of contaminated soil at the Dry-100 site in order to be protective of the human health and the environment. The alternatives are:

- Alternative 1 - No Action;
- Alternative 2 - Institutional Controls and Groundwater Monitoring; and
- Alternative 3 - Excavation and Off-Site Disposal of Contaminated Soil, and Institutional Controls.

The alternative selected from the EE/CA process may not be the final remedy for the site. Changes in the future use of the site or additional discoveries may require additional work to be performed in order to prevent contact with the contaminated subsurface soils

5.1.1 Alternative 1 - No Action

The No Action alternative is presented as a requirement of the NCP and as a baseline for comparison with the other alternatives. This alternative does not involve any active treatment or removal of the contaminated soil, or institutional and engineering controls.

5.1.2 Alternative 2 - Institutional Controls and Groundwater Monitoring

This alternative involves placing institutional controls on the site that limit the future use of the site to non-residential activities. The controls would also include provisions for notifying NYSDEC of any subsurface disturbances or excavations, and it would require appropriate health and safety measures to be taken. In addition to placing institutional controls, this alternative includes a groundwater monitoring program to evaluate any potential future migration of the contamination. Since PCBs are relatively immobile, the monitoring program would consist of annual sampling from a newly installed groundwater monitoring well downgradient of Dry-100.

5.1.3 Alternative 3 – Excavation and Off-Site Disposal of Contaminated Soil, and Institutional Controls

This alternative involves excavation of contaminated soil inside the generator room, characterizing the soil prior to disposal, and off-site disposal at an appropriate facility. In addition, institutional controls would be placed that would limit the use of the site, including provisions for notifying NYSDEC of any subsurface disturbances, and including appropriate health and safety measures to be taken. In accordance with New York State Hazardous Waste and Toxic Substances Control Act (TSCA) regulations, material containing PCBs at concentrations at or higher than 50 mg/kg, if excavated and removed from the site, must be disposed of at a Resource Conservation and Recovery Act (RCRA)-permitted facility.

Due to the unknown lateral and vertical extent of contamination inside the building, proximity to the two existing generators (west and east of Dry-100), and the base requirement to maintain a backup power supply during remedial activities; special measures will need to be put in place during remedial activities to provide temporary backup power to base facilities. Based on a visit to the site, Ecology and Environment, Inc. (E & E) determined that it would not be feasible to completely remove the generators from the building. Instead, the existing west generator currently installed on the concrete pad would be relocated north of its current location to provide more working room for excavation activities. The smaller east generator would be moved to a location away from the proposed excavation. The two generators would need to be taken off-line, and temporary equivalent backup generators and connections would be provided outside the building. In order to facilitate the movement of small construction equipment inside the generator room to complete the remedial work, an overhead door would also be installed to replace the existing window on the south wall of the generator room.

Since the extent of contamination is presently unknown, excavation of contaminated soil would continue until grab samples indicate PCB concentrations are lower than 10 mg/kg or the groundwater level is reached, whichever is encountered first. Verification samples would also be collected from the walls of the excavation to confirm acceptable cleanup levels prior to backfilling. Verification samples will be analyzed for PCBs and also for TCL VOCs, TCL SVOCs, TPH, and TAL metals to ensure that other low-level contaminants have also been removed from the site. To develop a cost estimate for this EE/CA, E & E assumed that the area of contamination is approximately 80 square feet by 12.6 feet deep, which is the reported groundwater level. No excavation is assumed beyond the groundwater table. Because of the uncertainty associated with the vertical and lateral extent of contamination, E & E has included the cost of shoring and bracing of the excavated area and the bearing soil of the footing (if needed), so as not to undermine the structural integrity of the building.

The excavated area will be backfilled with clean fill placed in lifts to within 12 inches of the floor surface. Six inches of crushed stone and reinforced concrete will then be used to restore the concrete floor over the excavated areas. Finally, the two generators will be restored, and electrical connections re-established.

5.2 Evaluation Criteria

Alternatives are evaluated and ranked according to their effectiveness, implementability, and costs. The factors considered under each of these categories are shown below:

- **Effectiveness**
  - Protection of human health and the environment,
  - Compliance with ARARs,
  - Short term effectiveness, and
  - Long-term effectiveness (permanence).

- **Implementability**
  - Technical feasibility,
  - Administrative feasibility,
  - Availability of services and materials, and
  - Agency and community acceptance.

- **Costs**
  - Total investment for each alternative, and
  - Benefit for each alternative.

5.2.1 Effectiveness

Effectiveness is a measure of an alternative's ability to protect human health and the environment, and meet the criteria of the identified ARARs and TBCs. Each measure (protect human health/groundwater/environment and meet criteria of ARARs and TBCs) is considered for both the long-term and short-term. A concise interpretation of these criteria follows:

5.2.1.1 Protection of Human Health and the Environment

This criterion is a measure of how well the alternative reduces the potential for human exposure to contaminants, contamination of groundwater, and exposure of ecological receptors, in the short-term and long-term. It considers the following:

- The net reduction in the toxicity, mobility, or volume of contaminated soil;

- The potential exposure pathway between humans or biota (considering future land use) and contaminated soil;

- The estimated quantity (volume) of residual contaminated soil; and
- The potential exposure pathway between humans or biota and releases or emissions from the active response alternatives.

5.2.1.2 Compliance with ARARs

This criterion is a measure of how well the alternative meets the identified chemical, action, or location-specific ARARs and TBCs (federal, state and local) during the long-term and short-term.

5.2.1.3 Short-Term

This is a measure of how well the alternative meets the criteria of protecting human health and the environment and meets the criteria of the ARARs and TBCs during implementation.

5.2.1.4 Long-Term

This is a measure of how well the alternative meets the criteria of protecting human health and the environment and meets the criteria of the ARARs and TBCs after implementation.

5.2.2 Implementability

Implementability is a measure of whether an alternative can be physically and administratively implemented, such as the ability to construct or excavate. It is also a measure of the availability of the services and materials needed to implement the alternative. Other considerations regarding implementability include local agency and community acceptance of a given alternative. A concise interpretation of the criteria governing implementability is described in the following subsections:

5.2.2.1 Technical Feasibility

This criterion refers to:

- The reliability of the action with regard to implementation;
- The actual ease of field implementation (e.g., excavation, construction action);
- The ease in undertaking future actions related to the initial undertaking; and
- The ability to monitor the effectiveness of the action.

5.2.2.2 Administrative Feasibility

This criterion is a measure of the ease with which an alternative can be implemented in terms of permits and rights-of-entry, coordination of services to support the action (e.g., legal services), probability of continual enforcement, or the arrangement and delivery of security services.

5.2.2.3 Availability of Services and Materials

This criterion is a measure of the availability of goods and services needed to support implementation of the alternative. Examples of this criterion include the availability of specialized personnel (i.e., qualified contaminated soil removal technicians) and equipment; and availability of a suitable storage facility for the contaminated soil, materials, and activity-derived waste.

5.2.2.4 Agency Acceptance

This criterion deals with the acceptance of the alternative by applicable federal, state and local agencies, as expressed by representatives under the agencies' authority. Agency acceptance will be established based on information gathered during the scheduled public meetings and interactions with agencies.

5.2.2.5 Community Acceptance

This criterion relates to the degree of acceptance of the alternative by the Griffiss community, including owners of property adjacent to the base. A public comment period will be available for this EE/CA. Public sentiment expressed during town hall meetings, public workshops, city council or county supervisor meetings, or institutional analysis is a means of determining community acceptance. Rankings of alternatives under this criterion will be established based on information gathered during Restoration Advisory Board (RAB) meetings, requests from the Griffiss Local Development Corporation (GLDC), and interaction with base personnel.

5.2.3 Cost

Cost is a measure of the overall investment (dollars) to implement the alternative with consideration of the benefit of that investment to the public and site.

The cost of implementing each of the alternatives has been estimated using Means Cost Reference books, vendor quotes, and engineering judgment. A detailed summary of these costs and assumptions is presented in Appendix A.

5.3 Evaluation of Response Action Alternatives

The following evaluation analyzes the effectiveness, implementability, and cost of each of the response action alternatives identified for the Dry-100 site.

The alternative with the lowest-ranking score is considered the best in terms of these evaluation criteria. The ranking scores are based on assessing each criterion and assigning a number between 1 and 4 (1 = the best [i.e., most effective] and 4 = the worst [i.e., the least effective]). The equal weighing of criteria is in compliance with the NCP ranking system.

5.3.1 Effectiveness

Table 5-1 provides the summary of the effectiveness criteria ranking for the three alternatives. Further description of the effectiveness criteria is presented below.

Table 5-1 Effectiveness Criteria Evaluation

Alternative	Protection of Human Health and the Environment		Compliance with ARARs		Overall	
	Long Term	Short Term	Long Term	Short Term	Score	Rank
1. No Action	4	1	4	4	13	3
2. Institutional Controls and Groundwater Monitoring	2	1	4	4	11	2
3. Excavation and Off-Site Disposal of Contaminated Soil, and Institutional Controls	1	2	1	1	5	1

Rank; 1 = the best (i.e., most effective) and 4 = the worst (i.e., the least effective).

5.3.1.1 Protection of Human Health and Environment

Long-Term Effectiveness

- Alternative 1 – No action would not reduce the potential for future exposure to subsurface soils. It is considered the least effective of the alternatives for the long-term and was rated 4.

- Alternative 2 – If properly maintained and enforced, institutional controls are an effective mechanism to prevent future exposure to subsurface contamination, and therefore would be protective of human health and the environment. However, since contamination remains on site (no reduction in toxicity or volume), this alternative was rated 2.

- Alternative 3 – Since subsurface soil contamination will be removed from the site and properly disposed of in an environmentally acceptable facility, this alternative will be protective of human health and the environment. This alternative is considered the most effective in the long-term and was given the highest rating of 1.

Short-Term Effectiveness

- Alternative 1 – No short-term impacts are associated with this alternative since it does not involve removal or treatment. There are no current exposure pathways. In addition, no PCB contamination was detected in the groundwater, and no groundwater receptors have been identified. Therefore this alternative was rated 1.

- Alternative 2 – No short-term impacts are associated with this alternative. There are no current exposure pathways. In addition, no PCB contamination was detected in the groundwater, and no groundwater receptors have been identified. Therefore this alternative was rated 1.

- Alternative 3 - Several short-term impacts to the workers may arise during excavation of contaminated soil at the site, including dust, noise, and potential spills during handling and transportation of contaminated material. Health and safety measures will be in place to protect the workers and surrounding community. Due to the above short-term impacts, this alternative was rated 2.

5.3.1.2 Compliance with ARARs and TBCs

Long-Term Effectiveness

- Alternative 1 – This alternative does not involve removal/treatment of contaminants of concern, and therefore will not meet ARARs or TBCs. Future subsurface projects will result in exposure to soil contamination. Therefore this alternative was rated 4.

- Alternative 2 – PCBs are recalcitrant compounds by nature and therefore their levels are not expected to significantly decrease over time. This alternative is therefore not effective in complying with ARARs and TBCs, and therefore was rated 4.

- Alternative 3 – Excavation of the contaminated soil and off-site disposal is the most effective alternative in complying with ARARs and TBCs, and was rated 1.

Short-Term Effectiveness

- Alternative 1 – The site is currently not compliant with the ARARs. No Action would be the least effective alternative and was ranked 4.

- Alternative 2 – The site is currently not compliant with the ARARs. PCBs are recalcitrant compounds by nature and therefore their levels are not expected to significantly decrease over time. This alternative is therefore not effective in complying with ARARs and TBCs, and was rated 4.

- Alternative 3 – Removal and off-site disposal will bring the site to compliance with ARARs and TBCs immediately, and was therefore rated 1.

5.3.1.3 Overall Effectiveness Ranking

According to the effectiveness criteria evaluation (Table 5-1), Alternative 3, Excavation and Off-Site Disposal of Contaminated Soil Material and Institutional Controls, is considered the most effective alternative for protection of human health and the environment, and meeting ARARs, with the lowest overall score (5). Although Alternative 2 does not meet ARARs, it is the second most effective alternative with an overall score of 11, since institutional controls if properly maintained would be protective of human health. Since no groundwater PCB contamination has been detected, and no receptors have been identified, alternative 2 would also be protective of the environment. Alternative 1 is the least effective since it is not protective of human health and the environment and does not comply with the ARARs.

5.3.2 Implementability

Table 5-2 provides the summary of the implementability criteria ranking of the four alternatives. Further description of the implementability criteria is presented below.

Table 5-2 Implementability Criteria Evaluation

Alternative	Technical Feasibility	Administrative Feasibility	Services And Materials	Agency Acceptance	Community Acceptance	Score	Rank
1. No Action	1	4	1	4	4	14	3
2. Institutional Controls and Groundwater Monitoring	1	4	1	2	2	10	2
3. Excavation and Off-Site Disposal of Contaminated Soil, and Institutional Controls	2	2	2	1	1	8	1

Rank; 1 = the best (i.e., most effective) and 4 = the worst (i.e., the least effective).

5.3.2.1 Technical Feasibility

- Alternative 1 – This alternative was rated 1 because no technical implementation is required.
- Alternative 2 – This alternative involves placing institutional controls and groundwater monitoring from one well which are readily implementable, and therefore was rated 1.
- Alternative 3 – This alternative is the most reliable and proven remedial technology but due to limited space inside the generator room, appropriate measures are needed to protect the electrical equipment and maintain a backup power supply for the base facilities. The removal action will also require phasing of excavation, stockpiling, transportation, and disposal activities. In addition, shoring and bracing of the excavation area and possibly the bearing soil of the footing (if excavation extends beyond depth of footing) will be needed to maintain structural integrity of the building. Air monitoring, soil characterization, and dust emissions measures will also have to be implemented during removal. These measures are standard construction practice, and as a result, this alternative was rated 2.

5.3.2.2 Administrative Feasibility

- Alternative 1 – This alternative was rated 4 primarily due to the long-term administrative needs associated with No Action. That is, the site would remain open requiring tracking, monitoring, inspections, land-use controls, etc.

- Alternative 2 – This alternative was rated 4 because institutional controls would need to be maintained and enforced. In addition, groundwater monitoring would require long-term reporting and evaluation.

- Alternative 3 – This alternative is considered to be the least demanding from an administrative perspective. The administrative needs are primarily short-term. Excavation will require dig permits, coordination with base, and possible disruption of traffic. Hauling and disposal of waste will require keeping soil characterization records and transportation manifests in compliance with RCRA, USEPA, Department of Transportation (DOT), state, and local agencies. However, since institutional controls would be required to limit the use of the site, this alternative was rated 2.

5.3.2.3 Service and Materials

- Alternative 1 – No services or materials are required for No Action, therefore it was rated 1.

- Alternative 2 – This alternative requires minimum standard services and materials for implementation, and therefore was rated 1.

- Alternative 3 - Excavation is regularly performed for on-Base projects and services are readily available. Several disposal facilities for PCB waste have been identified and are anticipated to be available for the foreseeable future. Qualified personnel for the supervision, monitoring and sampling are currently available on-Base. Since all these services are commonly used for Base projects, this alternative was rated 2.

5.3.2.4 Agency Acceptance

- Alternative 1 – This alternative was rated 4 since the site is not in compliance with TAGM 4046 and regulatory agencies are not likely to accept No Action.

- Alternative 2 – Although this alternative would not meet ARARs, it would be protective of human health and the environment, assuming institutional controls are properly maintained. Therefore, this alternative was rated 2.

- Alternative 3 – This alternative was rated 1 because the contamination will be removed and properly disposed of off site. As a result the site would meet

ARARs immediately, and would be protective of human health and the environment.

5.3.2.5 Community Acceptance

- Alternative 1– Since the potential exists for future exposure to site contaminants, this alternative was rated 4.

- Alternative 2 – This alternative was rated 2 since institutional controls if properly maintained would be effective in minimizing the potential for future exposure to site contaminants. Long-term monitoring of groundwater will also indicate if site contaminants are migrating off site.

- Alternative 3 - This alternative was rated 1. Site contaminants will be removed and properly disposed of off site. Because of the relatively small volume of contamination and location of the site, disturbance of the community will be minimal.

5.3.2.6 Overall Implementability Ranking

Alternative 3, Excavation and Off-Site Disposal of Contaminated Soil and Institutional Controls, is considered the best alternative in terms of overall implementability. Although logistical difficulties may be encountered during removal due to limited space inside the building and the presence of electrical equipment, this alternative would likely be more acceptable from a regulatory agency and community perspective. In addition, minimal long-term administrative requirements are associated with placing and maintaining institutional controls under this alternative. Alternative 2 is readily implementable technically, but requires long-term administrative actions. Regulatory and community acceptance would also not likely be as high as Alternative 3, therefore it was rated second overall. Alternative 1, No Action, has the greatest ease of implementation for technical feasibility and availability but strongly lacks agency and community acceptance. As a result it was rated third overall.

5.3.3 Cost

Table 5-3 provides a summary of the cost criteria and ranking of the three alternatives. The cost estimates were prepared using Means Cost References and are considered accurate at the time this report was published. The cost estimate sheets appear in Appendix A. Further description of the cost evaluation is presented in the following subsections.

Table 5-3 Cost Criteria Evaluation

Alternative	Cost	Investment	Benefit	Score	Rank
1. No Action	$0	1	4	5	2
2. Institutional Controls and Groundwater Monitoring	$46,300	2	2	4	1
3. Excavation and Off-Site Disposal of Contaminated Soil, and Institutional Controls	$222,000	3	1	4	1

Rank; 1 = the best (i.e., most effective) and 4 = the worst (i.e., the least effective).

5.3.3.1 Investment

- Alternative 1 – No Action is rated 1 because no investment is required.
- Alternative 2 - This alternative requires a lower investment than Alternative 3 and was therefore rated 2.
- Alternative 3 – This alternative was rated 3 because it requires the highest investment. The majority of this cost is associated with excavation and disposal, and moving and restoring the two existing generators.

5.3.3.2 Benefit

- Alternative 1 – No Action was rated 4 because it offers no benefit.
- Alternative 2 – Institutional controls and long-term groundwater monitoring will be beneficial in that they minimize the potential for future exposure, and provide a tool for monitoring contaminant migration. However, because of the some of the uncertainty in properly maintaining these controls, this alternative was rated 2.
- Alternative 3 - This alternative was ranked 1 because it offers the greatest benefit for protection of human health and the environment, and the site would be in compliance with ARARs immediately. In addition, institutional controls to limit the use of this site would provide long-term protection from remaining contamination at the site.

5.3.3.3 Overall Cost Ranking

Alternatives 2 and 3 were rated 1 in terms investment made in the site, and benefit to the community. Alternative 2 is considered less beneficial than Alternative 3 to human health and the environment, since contamination remains on the site, and the potential for future exposure remains if the institutional controls are not properly maintained. Alternative 3 costs approximately $150,000 more than Alternative 2, but soil contamination would be permanently removed from the site to meet cleanup criteria, and therefore is more protective of human health and the environment in the long-term. No Action alternative has no cost and no benefit and is not considered effective in protection of human health and the environment, or acceptable to regulatory agencies and the community.

5.4 Overall Ranking of the Alternatives

The overall rating of the alternatives in terms of their effectiveness, implementability, and cost is presented in Table 5-4. Alternative 3, Excavation and Off-site Disposal and Institutional Controls, has the lowest score and is ranked 1. This alternative is effective, implementable, and offers the highest benefit to protection of human health and the environment. Implementation of this alternative will require logistical planning and phasing of work due to limited space inside the generator room and in order to maintain an emergency backup power source for base facilities. Alternative 2 is less costly than Alternative 3 but does not meet ARARs, and protection of human health and the environment is contingent upon proper maintenance and enforcement of the institutional controls. Alternative 1 is not effective in protection of human health and the environment, and would likely not be accepted by regulatory agencies or the community.

Table 5-4 Overall Ranking of Alternatives

Alternative	Total Effectiveness Score	Total Implementability Score	Total Cost Score	Total Overall Score	Total Overall Rank
1. No Action	13	14	5	32	3
2. Institutional Controls and Groundwater Monitoring	11	10	4	25	2
3. Excavation and Off-Site Disposal of Contaminated Soil, and Institutional Controls	5	8	4	17	1

Rank; 1 = the best (i.e., most effective) and 4 = the worst (i.e., the least effective).

6 Recommended Response Action Plan

Based on the evaluation performed in Section 5, Alternative 3, Excavation and off-Site Disposal of Contaminated Soil and Institutional Controls, is recommended as the best response action at the site. Alternative 2, although more cost-effective than Alternative 3 does not meet ARARs and its effectiveness in protection of human health and the environment is contingent upon proper maintenance and enforcement of institutional controls.

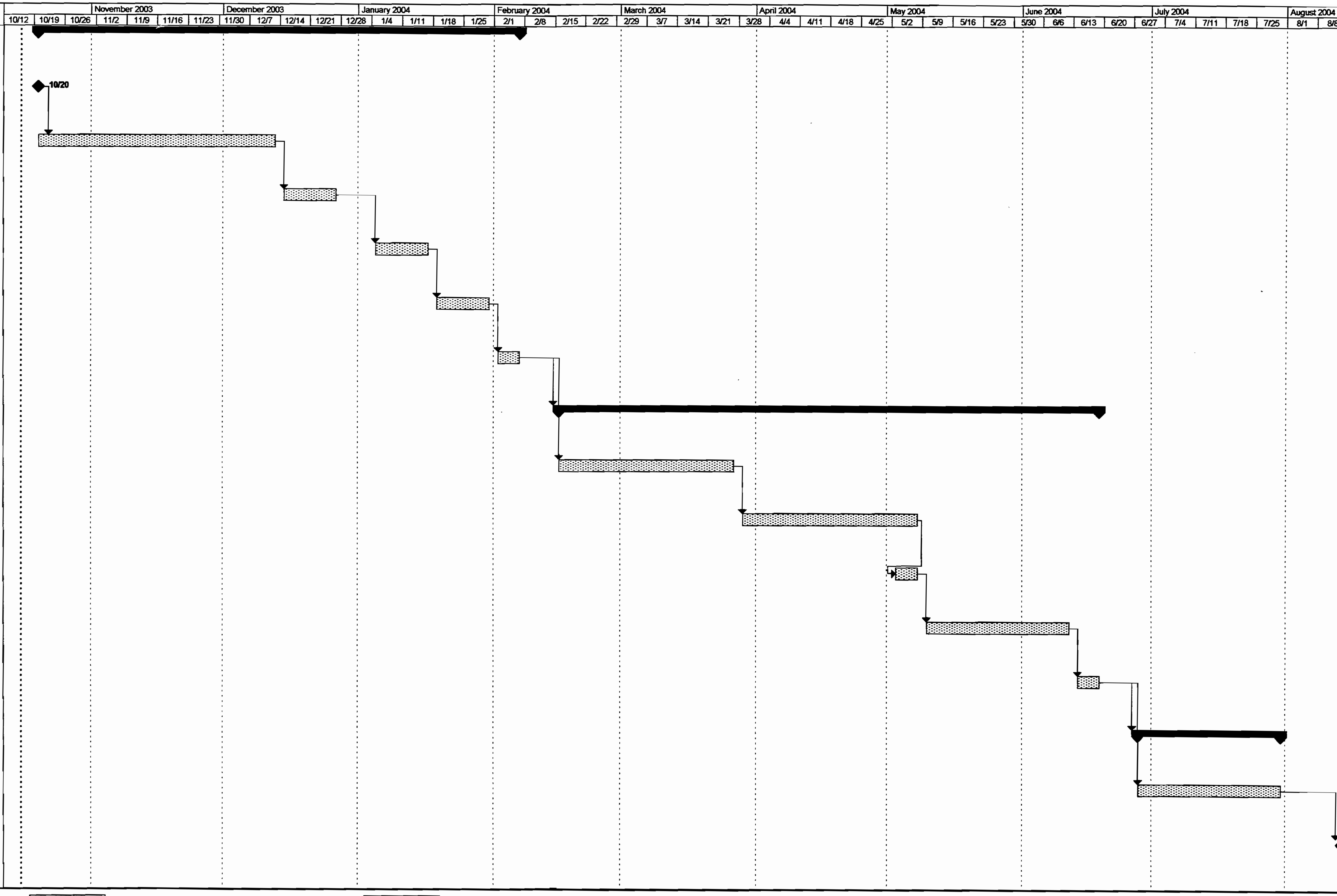
6.1 Implementation Plan

Following the review of this EE/CA, several activities are required prior to implementation of the selected response action. Following regulatory review and a public comment period, the EE/CA report will be finalized. An Action Memorandum will then be prepared and submitted for approval. Following approval of the Action Memorandum, a contractor will be procured and a Remedial Action Work Plan, Sampling and Analysis Plan, and Site-Specific Health and Safety Plan will be prepared. Detailed information such as the excavation plan; sampling plan; stormwater, erosion, and sediment control plan; contingency plan; and environmental monitoring requirements will be described in these documents. Following the removal action, a post action Record of Decision will be prepared.

6.2 Implementation Schedule

The schedule presented in Figure 6-1 presents the anticipated sequence of events necessary to complete the selected interim removal action, Excavation and Off-site Disposal of Contaminated Soil and Institutional Controls. The proposed schedule may vary depending on regulatory review time of the EE/CA document and remedial action work plan approval.

ID	Task Name
1	**EECA/ACTION MEMORANDUM**
2	Draft Final EE/CA
3	Public Review and Comment
4	Final EE/CA
5	Draft Action Memorandum
6	Review Action Memorandum
7	Final Action Memorandum
8	**IMPLEMENTATION OF SELECTED REMEDY**
9	Contractor Procurement
10	Work Plans
11	Mobilization
12	Excavation,Off-site Disposal
13	Site Restoration
14	**REPORTING**
15	Construction Certification Report
16	Proposed Plans/Record of Decision



Project: DryWell 100
Former Griffiss AFB
Date: Thu 10/16/03

Task	Progress	Summary	Rolled Up Split
Split	Milestone	Rolled Up Task	Rolled Up Milestone
Rolled Up Progress	Project Summary	Deadline	
External Tasks	External Milestone		

7 References

Ecology and Environment, Inc. (E & E), 2002, Focused Feasibility Study for Dry Well 100, Lancaster, New York.

__________, 1998 *Draft Report for Expanded Site Investigation and Confirmatory Sampling of Areas of Interest and Drywell/Wastewater-Related Systems, Griffiss Air Force Base, Rome, New York,* Lancaster, New York, July 1998.

Law Environmental, Inc. (Law), 1994, *Final Summary Report – Quarterly Ground-Water Sampling at Griffiss Air Force Base, Volume II.*

New York State Department of Environmental Conservation, 1994, Technical Administrative Guidance Memorandum (TAGM) 4046, *Determination of Soil Cleanup Objectives and Cleanup Levels*, Albany, New York, January 1994.

__________, 1990, Technical Administrative Guidance Memorandum (TAGM) 4030, *Selection of Remedial Actions at Inactive Hazardous Waste Sites*, May 1990.

OHM Remediation Services Corporation, 2001, *Final Removal Action Report for Drywell and Miscellaneous Sites at the Former Griffiss Air Force Base, Rome, New York*, Hopkinton, Massachusetts, June 2001.

Title 40, Code of Federal Regulations (CFR), Protection of Environment, Chapter I, Part 761.125, Requirements for PCB Spill Cleanup.

United States Environmental Protection Agency, 1993, *Guidance on Conducting Non-Time Critical Removal Actions under CERCLA* (EPA/540-R-93-057), Washington, D.C., August 1993

A Alternative Cost Tables

Table A-1 Estimated Cost of Alternative 3: Excavation and Removal of Contaminated Soil

Item	Comments	Units	Multiplier	No. Units	Cost/Unit	Cost
Capital Cost						
Pre-excavation characterization	incl. 2-man crew, rig, and supplies	Day	1	4	$2,000	$8,000
PCB analysis		Each	1	15	$100.00	$1,500
Remove generators	incl. connections	Day	1.25	5	$1,760.00	$11,000
Demo window and portion of wall		Day	1	2	$1,150	$2,300
Install roll-up door and finish work	10'x10' incl. hardwar	EA	1	1	$2,000	$2,000
Backup generator rental	400 kW and 50 kW generators	Months	1	1	$7,050.00	$7,050
Sawcut/breakup concrete		Day	1	2	$185.00	$370
- Breaker rental		Weeks	1	1	$190.80	$191
- Air compressor rental	365 CFM	Weeks	1	1	$500.00	$500
Remove concrete		Hours	1	8	$22.85	$183
Dumpster rental	30 CY	Days	15	30	$1.40	$630
Excavation and shoring	Assume excavation - 9'x9' at surface x12.5' deep	Day	2	10	$1,620.00	$32,400
Soil hauling w/dumptruck	Minimum charge	Each	1	2	$728.73	$1,457
Soil disposal	Landfill disposal of hazardous solid; assume 15% fluff factor, and 1.3 ton/cy	ton	1	60	$175.00	$10,500
Verification sampling	Assume 4 samples from Excav. Walls analyzed for TCL VOCs, TCL SVOCs, PCBs, Metals + 5% for sample preparation/shipping	Each	1	16	$165.90	$2,654
Decontaminate equipment		Each	1	5	$250.00	$1,250
Select fill		CY	1	40	$20.00	$800
Place and compact select fill		Day	1	1.5	$930.00	$1,395
Restore concrete floor	4-man crew	Day	1.25	1	$1,200.00	$1,500
Concrete-3500 psi Matr only	9'x9'x4"	CY	1	1.5	$70.00	$105
Replace generators, connections		Day	1.25	4	$1,760.00	$8,800
Site cleanup		LS	1	1	$1,500.00	$1,500
Institutional Controls		LS	1	1	$10,000.00	$10,000
				Capital Cost Subtotal		$106,100
				15% Mobilization/Demobilization		$16,000
				30 % Profit and Overhead		$36,700
				10% Administrative/Eng. Fees		$15,900
				20% Contingency		$35,000
				Capital Total Cost		**$209,700**
Annual Cost						
Maintain Institutional Controls	Assume every 5 yrs					$2,500
				Annual Cost Subtotal		$0
				10% Administrative, Eng Fees		0
				20% Contingency		0
				Annual Cost Total		**$0**
				30-yr Present Worth Cost		**$12,300**
				Total Present Worth Cost		**$222,000**

Notes

Unit costs taken from RSMeans 2001 Environmental Remediation Cost Data.

Mulitipliers used are engineer's estimate of additional costs that may be associated with specific tasks due to the limited amount of working space and potentially hazardous conditions.

6 % inflation rate is used on 2000 unit costs to find an equivalent 2002 cost.

Table A-2 Estimated Cost of Alternative 2: Institutional Controls

Item	Comments	Units	Multiplier	No. Units	Cost/Unit	Cost
Capital Cost						
Drilling - 2-inch Permanent PVC Well	incl. 2 man-crew	Day	1	1	$2,000	$2,000
Well Development		LS	1	1	$500.00	$500
Institutional Controls		LS	1	1	$10,000.00	$10,000
				Capital Cost Subtotal		$12,500
				15% Mobilization/Demobilization		$1,900
				30% Profit and Overhead		$4,400
				10% Administrative/Eng. Fees		$1,900
				20% Contingency		$4,200
				Capital Total Cost		**$24,900**
Annual Cost						
Maintain Institutional Controls	Assume every 5 yrs only					$2,500
Annual Sampling and Testing						$500
				Annual Cost Subtotal		$500
				10% Administrative, Eng Fees		50
				20% Contingency		110
				Annual Cost Total		**$660**
				30-yr Present-Worth Cost		**$21,400**
				Total Present-Worth Cost		**$46,300**

Notes:

Unit costs taken from RSMeans 2001 Environmental Remediation Cost Data.

Mulitipliers used are engineer's estimate of additional costs that may be associated with specific tasks due to the limited amount of working space and potentially hazardous conditions.

6 % inflation rate is used on 2000 unit costs to find an equivalent 2002 cost.

B Removal Action Report Figures (OHM Inc.)

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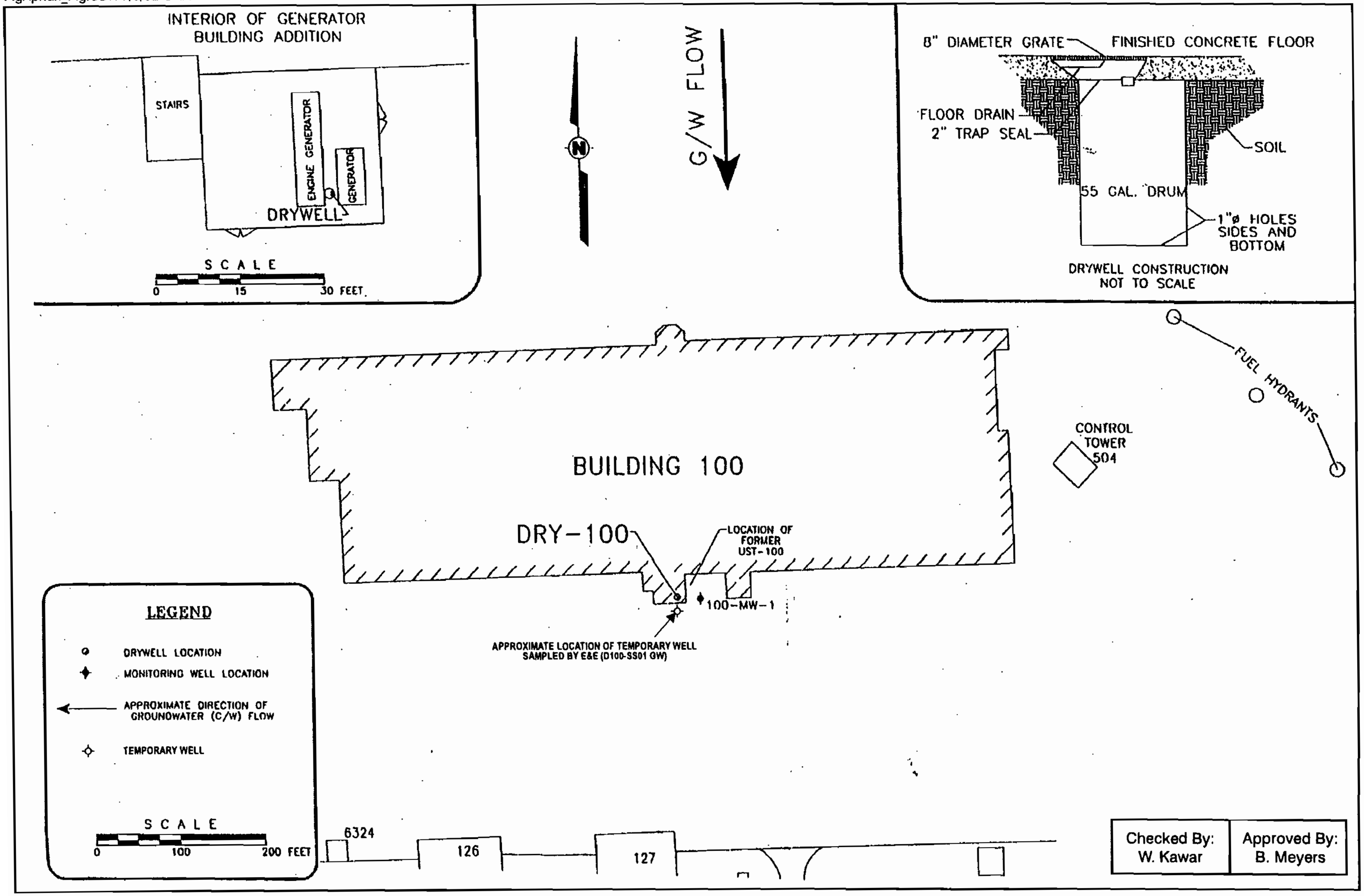
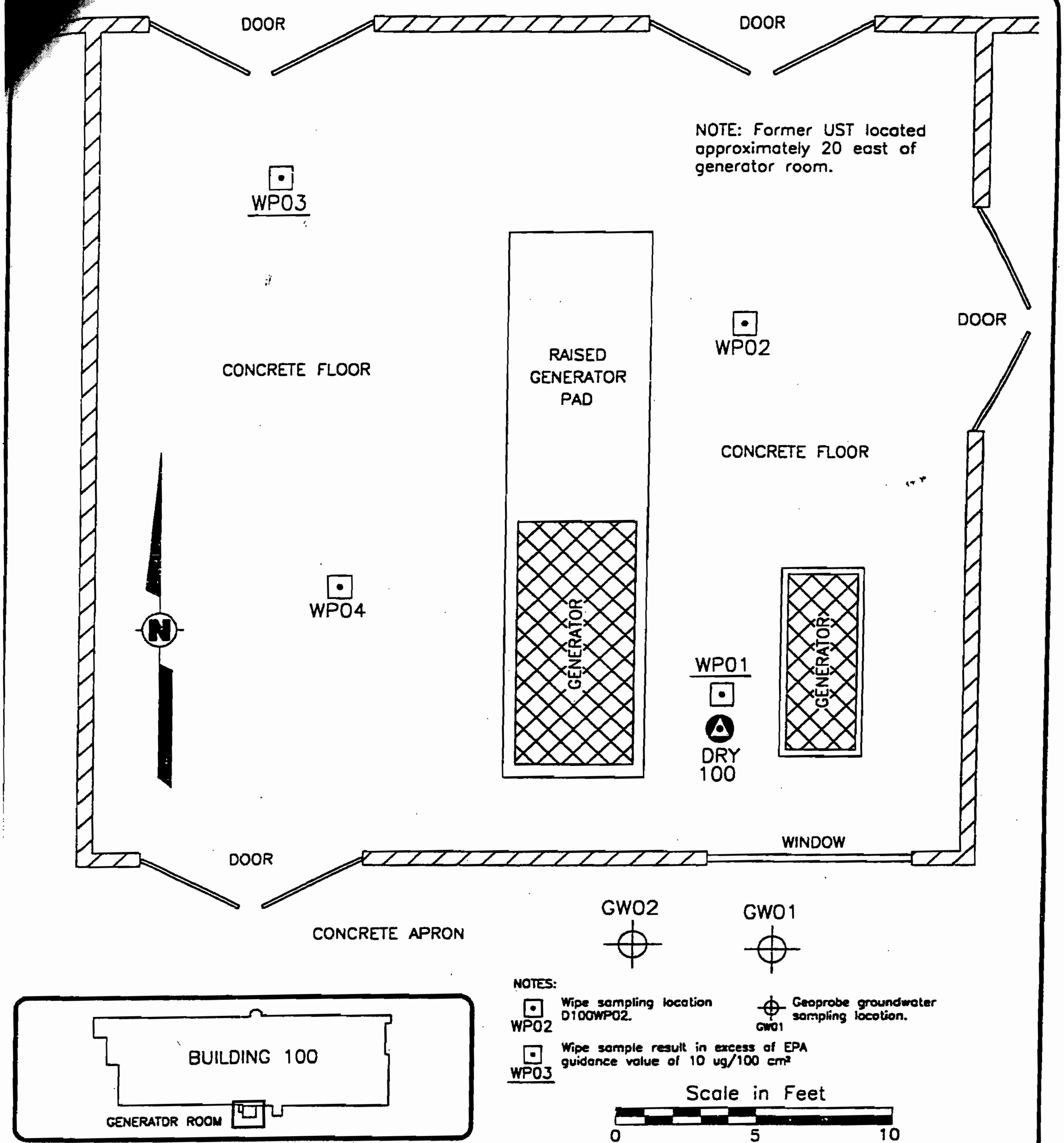


Checked By:	Approved By:
W. Kawar	B. Meyers

SOURCE: OHM Remediation Services Corp. 2000; Ecology and Environment, Inc. 2002



OHM Remediation Services Corp.

OHM Project No. 917549

Drawn By:	Checked By:	Approved By:
S. McGinn	M. Quinlan	M. Quinlan
Date:	**Scale:**	**Drawing No.**
10/02/00	AS SHOWN	917549-A2

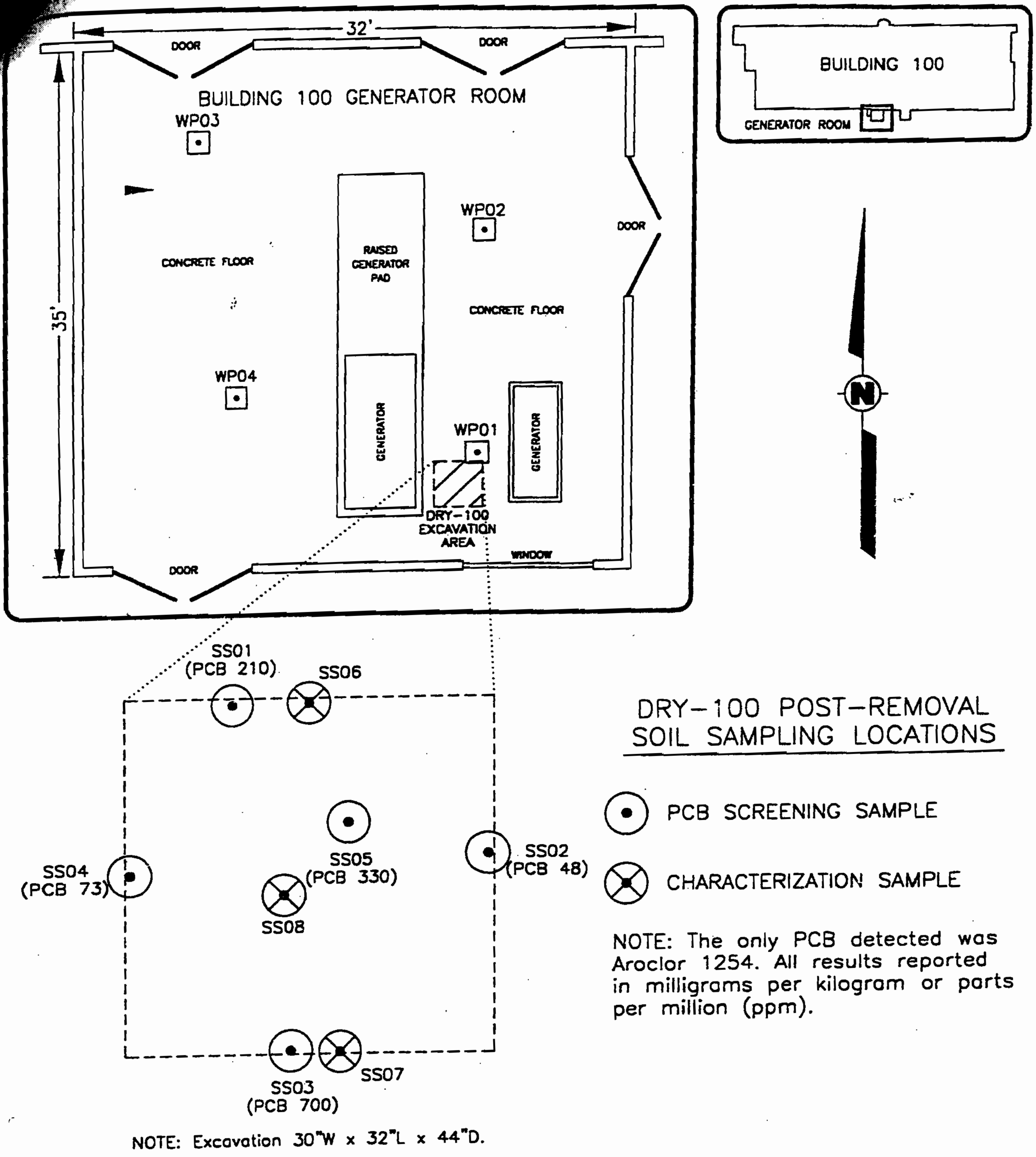
FIGURE 4-2

DRY-100 INVESTIGATIVE PCB WIPE AND GROUNDWATER SAMPLING LOCATIONS

FORMER GRIFFISS AIR FORCE BASE
ROME, NEW YORK

PREPARED FOR

AFCEE
BROOKS AIR FORCE BASE, TEXAS



OHM Remediation Services Corp.

OHM Project No. 917549

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Date: 10/02/00	Scale: AS SHOWN	Drawing No. 917549-A11

FIGURE 4-3

DRY-100 POST-EXCAVATION SOIL SAMPLING LOCATIONS

FORMER GRIFFISS AIR FORCE BASE
ROME, NEW YORK

PREPARED FOR

AFCEE
BROOKS AIR FORCE BASE, TEXAS

C Groundwater/Soil Analytical Results

Ecology and Environment, Inc.
Groundwater/Soil Analytical Sample Results
(from Temporary Well Location)

Table 5.1-2
SUMMARY OF POSITIVE HITS AND SCREENING FOR THE SOIL SAMPLES FROM DRY- 100, DRYWELL/WASTEWATER-RELATED SYSTEM INVESTIGATION FORMER GRIFFISS AIR FORCE BASE, ROME, NEW YORK

PARAMETER Sample ID: / Sample Date: / Depth (ft):	D100-SS01 Z1 / 1/27/98 / 12 - 16					NYSDEC TAGM 4046	EPA Region III RBCs -Industrial *
Test : Semivolatiles - SW 8270			**Units: µg/kg**				
bis(2-Ethylhexyl)phthalate	190 B					50000	410000
Fluorene	100 J					50000	82000000
Phenanthrene	100 J					50000	-
Pyrene	66 J					50000	61000000
Test : TAL Metals - SW6010/SW7000			**Units: mg/kg**				
Aluminum	5800					18306	1000000
Antimony	1.5 J					3.4	820
Arsenic	3.6					4.9	3.8
Barium	21 J					71	140000
Calcium	9600					23821	-
Chromium	8.9 J					22.6	10000
Cobalt	5.7					19	120000
Copper	24					43	82000
Iron	15000					47350	610000
Lead	3.0 J					200	400
Magnesium	3600					7175	-
Manganese	380 J					2106	47000
Nickel	13 J					46	41000
Potassium	800					1993	-
Sodium	81					259	-
Vanadium	11					36	14000
Zinc	44 J					120	610000
Test : TRPH - 418.1			**Units: mg/kg**				
TRPH	280					-	-

For more detals on the screening criteria see Table 2-1.

Source: Ecology and Environment, Inc., July, 1998

Table 5.1-2
SUMMARY OF POSITIVE HITS AND SCREENING FOR THE SOIL SAMPLES FROM DRY- 100, DRYWELL/WASTEWATER-RELATED SYSTEM INVESTIGATION FORMER GRIFFISS AIR FORCE BASE, ROME, NEW YORK

PARAMETER — Sample ID: / Sample Date: / Depth (ft):	D100-SS01 Z1 1/27/98 12 - 16					NYSDEC TAGM 4046	EPA Region III RBCs -Industrial *
Test : Volatiles - SW8260			**Units: µg/kg**				
Trichloroethene	2.3 J					700	520000

For more detais on the screening criteria see Table 2-1.

Source: Ecology and Environment, Inc., July, 1998

Table 5.1-2
SUMMARY OF POSITIVE HITS AND SCREENING FOR THE SOIL SAMPLES FROM DRY- 100, DRYWELL/WASTEWATER-RELATED SYSTEM INVESTIGATION FORMER GRIFFISS AIR FORCE BASE, ROME, NEW YORK

Key:

Qualifiers:

B	Detected in blank
J	Estimated
U	Not detected

Units:

mg/L = milligrams per liter
mg/kg = milligrams per kilogram
ug/L = micrograms per liter
ug/kg = micrograms per kilogram
ug/wipe = micrograms per wipe

Test and Sample Information:

NA = Not analyzed
PAH = Polyaromatic hydrocarbons
TRPH = Total recoverable petroleum hydrocarbons
PCBs = Polychlorinated biphenyls
TAL = Target analyte list
/D = Duplicate sample
-F = Filtered sample

Screening:

[thin box] Result above NYSDEC recommended soil cleanup objectives for soil, Technical and Administrative Guidance Memorandum (TAGM) 4046, 1994.

[thick box] Result above EPA Region III Risk-Based Concentration (RBC).

* In lieu of an RBC for lead, the EPA OSWER heakth-based screening value for this compound in a residential area with childern (Directive No. 9355.4-12, July 1994) was used.

For more detais on the screening criteria see Table 2-1

Source: Ecology and Environment, Inc., July. 1998

Table 5.1-4
SUMMARY OF POSITIVE HITS AND SCREENING FOR THE GROUNDWATER SAMPLES FROM DRY- 100, DRYWELL/WASTEWATER-RELATED SYSTEM INVESTIGATION FORMER GRIFFISS AIR FORCE BASE, ROME, NEW YORK

PARAMETER — Sample ID: / Sample Date: / Depth (ft):	D100-SS01 GW 1/29/98 11 - 21	D100-SS01 GW-F 1/29/98 11 - 21				NYSDEC Class GA Standard	Federal MCL *	EPA Region III RBCs for Tap Water
Test : Semivolatiles - SW 8270				**Units: µg/L**				
bis(2-Ethylhexyl)phthalate	2.3 J	NA				50	6	4.8
Fluorene	2.0 J	NA				-	-	-
Phenanthrene	2.1 J	NA				-	-	-
Test : TAL Metals - SW6010/SW7000				**Units: µg/L**				
Aluminum	94000	100 U				-	50	37000
Arsenic	76	5.0 U				25	50	0.045
Barium	460	20 U				1000	2000	2600
Cadmium	5.7	5.0 U				-	-	-
Calcium	230000	57000				-	-	-
Chromium	130	10 U				11	100	180
Cobalt	75	20 U				-	-	-
Copper	370	20 U				200	1300	1500
Iron	180000	52 B				300	300	11000
Lead	47	5.0 U				25	15	-
Magnesium	53000	7700				35000	-	-
Manganese	9900	370				300	50	840
Nickel	160	20 U				-	-	-
Potassium	30000	2800				-	-	-
Sodium	9100	6600				20000	-	-
Vanadium	200	20 U				-	-	-
Zinc	520	10 U				300	5000	11000
Test : TRPH - 418.1				**Units: mg/L**				
TRPH	14	NA				-	-	-

For more detals on the screening criteria see Table 2-2.

Source: Ecology and Environment, Inc., July, 1998

Table 5.1-4
SUMMARY OF POSITIVE HITS AND SCREENING FOR THE GROUNDWATER SAMPLES FROM DRY- 100, DRYWELL/WASTEWATER-RELATED SYSTEM INVESTIGATION FORMER GRIFFISS AIR FORCE BASE, ROME, NEW YORK

Key:

Qualifiers:

B	Detected in blank
J	Estimated
U	Not detected
UJ	Not detected; estimated detection limit reported

Units:

mg/L = milligrams per liter
mg/kg = milligrams per kilogram
µg/L = micrograms per liter
µg/kg = micrograms per kilogram
µg/wipe = micrograms per wipe

Test and Sample Information:

NA = Not analyzed
PAH = Polyaromatic hydrocarbons
TRPH = Total recoverable petroleum hydrocarbons
PCBs = Polychlorinated biphenyls
TAL = Target analyte list
/D = Duplicate sample
-F = Filtered sample

Screening:

(shaded box) Result above NYSDEC Class GA Standard for Ambient Water Quality.

(heavy-outlined box) Result above EPA Region III Risk-Based Concentration (RBC).

(underlined box) Result above Federal Maximum Contaminant Level (MCL).

* MCLs for aluminum, iron, manganese, and zic are secondary MCLs based on aesthetics.

In lieu of an MCL for copper and lead, action levels are used.

For more details on the screening criteria see Table 2-2.

Source: Ecology and Environment, Inc., July, 1998

Law, Inc.
Groundwater Analytical Results

ANALYTICAL RESULTS SUMMARY
VOLATILE ORGANICS
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION – QUARTERLY SAMPLING – QUARTER I
SAMPLING PERFORMED NOVEMBER, 1992

PARAMETER	TEST CODE	UNITS	100MW–1	101MW–1	101MW–101	110MW–1	301MW–4	771MW–2
1,1,1–TRICHLOROETHANE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
1,1,2,2–TETRACHLOROETHANE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
1,1,2–TRICHLOROETHANE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
1,1–DICHLOROETHANE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
1,1–DICHLOROETHENE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
1,2–DICHLOROETHANE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
1,2–DICHLOROPROPANE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
2–HEXANONE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
ACETONE	SW8240	UG/L	1.3 B	<5	<5	2.2 B	<5	12 J
BENZENE	SW8240	UG/L	<5	<5	<5	1.7	<5	<5
BROMODICHLOROMETHANE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
BROMOFORM	SW8240	UG/L	<5	<5	<5	<5	<5	<5
BROMOMETHANE	SW8240	UG/L	<10	<10	<10	<10	<10	<10
CARBON DISULFIDE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
CARBON TETRACHLORIDE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
CHLOROBENZENE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
CHLOROETHANE	SW8240	UG/L	<10	<10	<10	<10	<10	<10
CHLOROFORM	SW8240	UG/L	3.0	<5	<5	<5	2.9	<5
CHLOROMETHANE	SW8240	UG/L	<10	<10	<10	<10	<10	<10
DIBROMOCHLOROMETHANE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
ETHYLBENZENE	SW8240	UG/L	5.9	<5	<5	7.7 T	<5	<5
METHYL ETHYL KETONE (2–BUTANONE)	SW8240	UG/L	<5	<5	<5	<5	<5	<5
METHYL ISOBUTYL KETONE (4–METHYL–2–PENTANONE)	SW8240	UG/L	<5	<5	<5	<5	<5	<5
METHYLENE CHLORIDE	SW8240	UG/L	5.7 B	24 B	21 B	4.6 B	3.6 B	6.2 B
STYRENE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
TETRACHLOROETHYLENE(PCE)	SW8240	UG/L	<5	8.3	7.8	<5	1.7	<5
TOLUENE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
TOTAL 1,2–DICHLOROETHENE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
TRICHLOROETHYLENE (TCE)	SW8240	UG/L	<5	3.9	3.8	<5	1.2	<5
VINYL CHLORIDE	SW8240	UG/L	<10	<10	<10	<10	<10	<10
XYLENES, TOTAL	SW8240	UG/L	<5	<5	<5	9.3 T	<5	<5
cis–1,3–DICHLOROPROPENE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
trans–1,3–DICHLOROPROPENE	SW8240	UG/L	<5	<5	<5	<5	<5	<5
SURROGATES:								
1,2–DICHLOROETHANE–D4	SW8240	UG/L	98	91	88	103	98	89
1–BROMO–4–FLUOROBENZENE (4–BROMOFLUOROBENZENE)	SW8240	UG/L	104	102	105	101	103	102
TOLUENE–D8	SW8240	UG/L	98	101	98	99	101	97

J = Estimated quantitation based upon QC data.
B = False positive based upon blank data.
T = False positive based upon trip blank data.
F = False positive based upon field blank data.

Duplicate pairs:

101MW–1 = 101MW–101
BFSMW–3A = BFSMW–301A
HS2MW–2 = HS2MW–201
OBMW–17 = OBMW–1701
OBMW–8 = OBMW–801

771MW–2 = 771MW–201
HS1MW–2 = HS1MW–201
LF1MW–5 = LFIMW–501
OBMW–5 = OBMW–501
WSAMW–4 = WSAMW–401

ANALYTICAL RESULTS SUMMARY
SEMI-VOLATILE ORGANICS
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION - QUARTERLY SAMPLING - QUARTER I
SAMPLING PERFORMED NOVEMBER, 1992

PARAMETER	TEST CODE	UNITS	100MW-1	101MW-1	101MW-101	110MW-1	301MW-4	771MW-2
1,2,4-TRICHLOROBENZENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
1,2-DICHLOROBENZENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
1,3-DICHLOROBENZENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
1,4-DICHLOROBENZENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
2,4,5-TRICHLOROPHENOL	SW8270	UG/L	<10	<10	<10	<10	<10	<10
2,4,6-TRICHLOROPHENOL	SW8270	UG/L	<10	<10	<10	<10	<10	<10
2,4-DICHLOROPHENOL	SW8270	UG/L	<10	<10	<10	<10	<10	<10
2,4-DIMETHYLPHENOL	SW8270	UG/L	<10	<10	<10	<10	<10	<10
2,4-DINITROPHENOL	SW8270	UG/L	<50	<50	<50	<50	<50	<50
2,4-DINITROTOLUENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
2,6-DINITROTOLUENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
2-CHLORONAPHTHALENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
2-CHLOROPHENOL	SW8270	UG/L	<10	<10	<10	<10	<10	<10
2-METHYLNAPHTHALENE	SW8270	UG/L	6.3	<10	<10	<10	<10	<10
2-METHYLPHENOL (o-CRESOL)	SW8270	UG/L	<10	<10	<10	<10	<10	<10
2-NITROANILINE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
2-NITROPHENOL	SW8270	UG/L	<10	<10	<10	<10	<10	<10
3,3'-DICHLOROBENZIDINE	SW8270	UG/L	<20	<20	<20	<20	<20	<20
3-NITROANILINE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
4,6-DINITRO-2-METHYLPHENOL	SW8270	UG/L	<50	<50	<50	<50	<50	<50
4-BROMOPHENYL PHENYL ETHER	SW8270	UG/L	<10	<10	<10	<10	<10	<10
4-CHLORO-3-METHYLPHENOL	SW8270	UG/L	<10	<10	<10	<10	<10	<10
4-CHLOROANILINE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
4-CHLOROPHENYL PHENYL ETHER	SW8270	UG/L	<10	<10	<10	<10	<10	<10
4-METHYLPHENOL (p-CRESOL)	SW8270	UG/L	<10	<10	<10	<10	<10	<10
4-NITROANILINE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
4-NITROPHENOL	SW8270	UG/L	<50	<50	<50	<50	<50	<50
ACENAPHTHENE	SW8270	UG/L	2.5	<10	<10	<10	<10	<10
ACENAPTHYLENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
ANTHRACENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
BENZO(a)ANTHRACENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
BENZO(a)PYRENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
BENZO(b)FLUORANTHENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
BENZO(g,h,i)PERYLENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
BENZO(k)FLUORANTHENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
BENZYL BUTYL PHTHALATE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
CARBAZOLE	SW8270	UG/L	<10	<10	<10	1.3 J	<10	<10
CHRYSENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
DI-n-BUTYL PHTHALATE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
DI-n-OCTYL PHTHALATE (bis-(2-ETHYLHEXYL)PHTHALATE)	SW8270	UG/L	<10	<10	<10	<10	<10	<10
DIBENZ(a,h)ANTHRACENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
DIBENZOFURAN	SW8270	UG/L	1.8	<10	<10	<10	<10	<10
DIETHYL PHTHALATE	SW8270	UG/L	<10	<10	<10	<10	<10	<10
DIMETHYL PHTHALATE	SW8270	UG/L	<10	<10	<10	<10	<10	<10

ANALYTICAL RESULTS SUMMARY
PESTICIDES / PCBs
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION – QUARTERLY SAMPLING – QUARTER I
SAMPLING PERFORMED NOVEMBER, 1992

PARAMETER	TEST CODE	UNITS	100MW–1	101MW–1	101MW–101	110MW–1	301MW–4	771MW–2	771MW–201
ALDRIN	SW8080	UG/L	<0.04	<0.04 J	<0.04 J	<0.04	<0.04	<0.04	<0.04
ALPHA BHC	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
ALPHA ENDOSULFAN	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
ALPHA–CHLORDANE	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
BETA BHC	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
BETA ENDOSULFAN	SW8080	UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DELTA BHC	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
DIELDRIN	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
ENDOSULFAN SULFATE	SW8080	UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
ENDRIN	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
ENDRIN ALDEHYDE	SW8080	UG/L	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
ENDRIN KETONE	SW8080	UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
GAMMA BHC	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
GAMMA–CHLORDANE	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
HEPTACHLOR	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
HEPTACHLOR EPOXIDE	SW8080	UG/L	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
METHOXYCHLOR	SW8080	UG/L	<0.55	<0.55	<0.55	<0.55	<0.55	<0.55	<0.55
PCB–1016 (AROCHLOR 1016)	SW8080	UG/L	<1	<1	<1	<1	<1	<1	<1
PCB–1221 (AROCHLOR 1221)	SW8080	UG/L	<2	<2	<2	<2	<2	<2	<2
PCB–1232 (AROCHLOR 1232)	SW8080	UG/L	<1	<1	<1	<1	<1	<1	<1
PCB–1242 (AROCHLOR 1242)	SW8080	UG/L	<1	<1	<1	<1	<1	<1	<1
PCB–1248 (AROCHLOR 1248)	SW8080	UG/L	<1	<1	<1	<1	<1	<1	<1
PCB–1254 (AROCHLOR 1254)	SW8080	UG/L	<1	<1	<1	<1	<1	<1	<1
PCB–1260 (AROCHLOR 1260)	SW8080	UG/L	<1	<1	<1	<1	<1	<1	<1
TOXAPHENE	SW8080	UG/L	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
p,p'–DDD	SW8080	UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'–DDE	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
p,p'–DDT	SW8080	UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SURROGATE:									
2,4,5,6–TETRACHLORO–META–XYLENE	SW8080	UG/L	134	108	124	102	110	106	98

J – Estimated quantitation based upon QC data.
Duplicate pairs:

101MW–1 = 101MW–101
771MW–2 = 771MW–201
BFSMW–3A = BFSMW–301A
HS1MW–02 = HS1MW–201
HS2MW–02 = HS2MW–201
LF1MW–5 = LF1MW–501
OBMW–17 = OBMW–1701
OBMW–5 = OBMW–501
OBMW–8 = OBMW–801
WSAMW–4 = WSAMW–401

ANALYTICAL RESULTS SUMMARY
METALS AND CYANIDE
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION – QUARTERLY SAMPLING – QUARTER I
SAMPLING PERFORMED NOVEMBER, 1992

PARAMETER	TEST CODE	UNITS	100MW-1	101MW-1	101MW-101	110MW-1	301MW-4	771MW-2
CHROMIUM, HEXAVALENT	A312B	MG/L	<0.02 JL	0.02	<0.02	<0.02	<0.02 JL	<0.02
ALUMINUM	SW6010	MG/L	<0.21 JL	<0.21	<0.21	1.82	<0.21 JL	<0.21
ANTIMONY	SW6010	MG/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
BARIUM	SW6010	MG/L	0.08	<0.02	<0.02	0.072	<0.02	0.126
BERYLLIUM	SW6010	MG/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
CADMIUM	SW6010	MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
CALCIUM	SW6010	MG/L	52.5	60.3	59	59.6	45	120
CHROMIUM, TOTAL	SW6010	MG/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
COBALT	SW6010	MG/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
COPPER	SW6010	MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
IRON	SW6010	MG/L	1.44	0.51	0.70	15.2	0.155	39.2
MAGNESIUM	SW6010	MG/L	7.8	6.86 J	7.2 J	3.75	6.5	19.4
MANGANESE	SW6010	MG/L	0.32	0.33	0.34	7.5	0.01	5.10
NICKEL	SW6010	MG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
POTASSIUM	SW6010	MG/L	5.33	1.5	1.54	1.64	2.0	3.66
SILVER	SW6010	MG/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
SODIUM	SW6010	MG/L	40.7	8.0	7.7	2.3	11.7	10.9
VANADIUM	SW6010	MG/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
ZINC	SW6010	MG/L	0.26	0.363	0.312	0.266	0.17	<0.01
ARSENIC	SW7060	MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.022
LEAD	SW7421	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MERCURY	SW7471	MG/L	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002
SELENIUM	SW7740	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
THALLIUM	SW7841	MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
CYANIDE	SW9010	MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

J = Estimated quantitation based upon QC data.
B = False positive based upon blank data.
T = False positive based upon trip blank data.
R = Data rejected due to QC data. DO NOT USE.
Duplicate pairs:

101MW-1 = 101MW-101	771MW-2 = 771MW-201
BFSMW-3A = BFSMW-301A	HS1MW-2 = HS1MW-201
HS2MW-2 = HS2MW-201	LF1MW-5 = LFIMW-501
OBMW-17 = OBMW-1701	OBMW-5 = OBMW-501
OBMW-8 = OBMW-801	WSAMW-4 = WSAMW-401

ANALYTICAL RESULTS SUMMARY
ETHYLENE GLYCOLS
GRIFFISS AIR FORCE BASE
BASELINE SAMPLING – QUARTERLY SAMPLING – QUARTER I
SAMPLING PERFORMED NOVEMBER, 1992

PARAMETER	TEST CODE	UNITS	100MW–1	101MW–1	101MW–101	110MW–1	301MW–4	771MW–2	771MW–201
Total Glycol	NYS DOH APC–44	mg / L	<0.05	<0.05	<0.05	<0.05	<0.05	0.07 T	<0.05

J = Estimated quantitation based upon QC data.
B = False positive based upon blank data.
T = False positive based upon trip blank data.
F = False positive based upon field blank data.
Duplicate pairs:

101MW–1 = 101MW–101	771MW–2 = 771MW–201
BFSMW–3A = BFSMW–301A	HS1MW–2 = HS1MW–201
HS2MW–2 = HS2MW–201	LF1MW–5 = LFIMW–501
OBMW–17 = OBMW–1701	OBMW–5 = OBMW–501
OBMW–8 = OBMW–801	WSAMW–4 = WSAMW–401

ANALYTICAL RESULTS SUMMARY
VOLATILE ORGANICS
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION – QUARTERLY SAMPLING – QUARTER II
SAMPLING PERFORMED MARCH, 1993

PARAMETER	TEST CODE	UNITS	100MW-1	101MW-1	101MW-101	110MW-1	301MW-4	771MW-2	771MW-201	771MW-4
1,1,1-TRICHLOROETHANE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
1,1,2,2-TETRACHLOROETHANE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
1,1,2-TRICHLOROETHANE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
1,1-DICHLOROETHANE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
1,1-DICHLOROETHENE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
1,2-DICHLOROETHANE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
1,2-DICHLOROPROPANE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
2-HEXANONE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
ACETONE	SW8240	UG/L	<5	<5	<5	12JB	12JB	3.9JB	2.9JB	<50
BENZENE	SW8240	UG/L	<5	<5	<5	1.7J	<5	<5	7.6	4200Jd
BROMODICHLOROMETHANE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
BROMOFORM	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
BROMOMETHANE	SW8240	UG/L	<10	<10	<10	<10	<10	<10	<10	<100
CARBON DISULFIDE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
CARBON TETRACHLORIDE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
CHLOROBENZENE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
CHLOROETHANE	SW8240	UG/L	<10	<10	<10	<10	<10	<10	<10	<100
CHLOROFORM	SW8240	UG/L	1.6J	<5	<5	<5	3.3J	<5	<5	<50
CHLOROMETHANE	SW8240	UG/L	<10	<10	<10	<10	<10	4.8JB	8.1JB	<100
DIBROMOCHLOROMETHANE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
ETHYLBENZENE	SW8240	UG/L	1.7J	<5	<5	17	<5	<5	1.1J	410
METHYL ETHYL KETONE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
METHYL ISOBUTYL KETONE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
METHYLENE CHLORIDE	SW8240	UG/L	1.7JB	2.0JB	1.7JB	1.8JB	2.0JB	6.2JB	5.1JB	30JB
STYRENE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
TETRACHLOROETHYLENE(PCE)	SW8240	UG/L	<5	120	120	<5	1.1J	<5	<5	<50
TOLUENE	SW8240	UG/L	<5	<5	<5	1.4J	<5	<5	1.3J	44J
TOTAL 1,2-DICHLOROETHENE	SW8240	UG/L	<5	24	21	<5	<5	<5	<5	<50
TRICHLOROETHYLENE (TCE)	SW8240	UG/L	<5	99	99	<5	<5	<5	<5	<50
VINYL CHLORIDE	SW8240	UG/L	<10	<10	<10	<10	<10	<10	<10	<100
XYLENES, TOTAL	SW8240	UG/L	<5	<5	<5	31	<5	<5	2.2J	1200
cis-1,3-DICHLOROPROPENE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
trans-1,3-DICHLOROPROPENE	SW8240	UG/L	<5	<5	<5	<5	<5	<5	<5	<50
SURROGATES:										
1,2-DICHLOROETHANE-D4	SW8240	UG/L	93	91	96	97	106	98	94	96
1-BROMO-4-FLUOROBENZENE	SW8240	UG/L	101	113	104	111	100	104	101	104
TOLUENE-D8	SW8240	UG/L	100	99	101	101	102	102	101	102

J = Estimated quantitation based upon QC data
JB = Estimated quantitation: possible biased high or false positive based on QC data
JH = Estimated quantitation: possibly biased high based upon QC data
JL = Estimated quantitation: possibly biased low based upon QC data
Jd = Estimated result due to dilution

Duplicate pairs:

101MW-1 = 101MW-101
771MW-2 = 771MW-201
BFSMW-3A = BFSMW-301A
HS1MW-02 = HS1MW-201
HS2MW-02 = HS2MW-201
LF1MW-5 = LF1MW-501
OBMW-17 = OBMW-1701
OBMW-5 = OBMW-501
OBMW-8 = OBMW-801
WSAMW-4 = WSAMW-401

ANALYTICAL RESULTS SUMMARY
SEMI-VOLATILE ORGANICS
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION - QUARTERLY SAMPLING - QUARTER II
SAMPLING PERFORMED MARCH, 1993

PARAMETER	TEST CODE	UNITS	100MW-1	101MW-1	101MW-101	110MW-1	301MW-4	771MW-2	771MW-201
1,2,4-TRICHLOROBENZENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
1,2-DICHLOROBENZENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
1,3-DICHLOROBENZENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
1,4-DICHLOROBENZENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
2,4,5-TRICHLOROPHENOL	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
2,4,6-TRICHLOROPHENOL	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
2,4-DICHLOROPHENOL	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
2,4-DIMETHYLPHENOL	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
2,4-DINITROPHENOL	SW8270	UG/L	<50	<50	<50	<50	<50	<50	<50
2,4-DINITROTOLUENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
2,6-DINITROTOLUENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
2-CHLORONAPHTHALENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
2-CHLOROPHENOL	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
2-METHYLNAPHTHALENE	SW8270	UG/L	<10	1.1J	<10	<10	<10	<10	<10
2-METHYLPHENOL (o-CRESOL)	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
2-NITROANILINE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
2-NITROPHENOL	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
3,3'-DICHLOROBENZIDINE	SW8270	UG/L	<20	<20	<20	<20	<20	<20	<20
3-NITROANILINE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
4,6-DINITRO-2-METHYLPHENOL	SW8270	UG/L	<50	<50	<50	<50	<50	<50	<50
4-BROMOPHENYL PHENYL ETHER	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
4-CHLORO-3-METHYLPHENOL	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
4-CHLOROANILINE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
4-CHLOROPHENYL PHENYL ETHER	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
4-METHYLPHENOL (p-CRESOL)	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
4-NITROANILINE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
4-NITROPHENOL	SW8270	UG/L	<50	<50	<50	<50	<50	<50	<50
ACENAPHTHENE	SW8270	UG/L	<10	<10	<10	4J	<10	<10	<10
ACENAPTHYLENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
ANTHRACENE	SW8270	UG/L	<10	<10	<10	2J	<10	<10	<10
BENZO(a)ANTHRACENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
BENZO(a)PYRENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
BENZO(b)FLUORANTHENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
BENZO(g,h,i)PERYLENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
BENZO(k)FLUORANTHENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
BENZYL BUTYL PHTHALATE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
CARBAZOLE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
CHRYSENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
DI-n-BUTYL PHTHALATE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
DI-n-OCTYL PHTHALATE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
DIBENZ(a,h)ANTHRACENE	SW8270	UG/L	<10	<10	<10	<10	<10	<10	<10
DIBENZOFURAN	SW8270	UG/L	<10	<10	<10	2J	<10	<10	<10

ANALYTICAL RESULTS SUMMARY
PESTICIDES / PCBs
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION – QUARTERLY SAMPLING – QUARTER II
SAMPLING PERFORMED MARCH, 1993

PARAMETER	TEST CODE	UNITS	100MW-1	101MW-1	101MW-101	110MW-1	301MW-4	771MW-2	771MW-201
ALDRIN	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
ALPHA BHC	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
ALPHA ENDOSULFAN	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
ALPHA-CHLORDANE	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
BETA BHC	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
BETA ENDOSULFAN	SW8080	UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DELTA BHC	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
DIELDRIN	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
ENDOSULFAN SULFATE	SW8080	UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
ENDRIN	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
ENDRIN ALDEHYDE	SW8080	UG/L	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
ENDRIN KETONE	SW8080	UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
GAMMA BHC	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
GAMMA-CHLORDANE	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
HEPTACHLOR	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
HEPTACHLOR EPOXIDE	SW8080	UG/L	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
METHOXYCHLOR	SW8080	UG/L	<0.55	<0.55	<0.55	<0.55	<0.55	<0.55	<0.55
PCB-1016 (AROCHLOR 1016)	SW8080	UG/L	<1	<1	<1	<1	<1	<1	<1
PCB-1221 (AROCHLOR 1221)	SW8080	UG/L	<2	<2	<2	<2	<2	<2	<2
PCB-1232 (AROCHLOR 1232)	SW8080	UG/L	<1	<1	<1	<1	<1	<1	<1
PCB-1242 (AROCHLOR 1242)	SW8080	UG/L	<1	<1	<1	<1	<1	<1	<1
PCB-1248 (AROCHLOR 1248)	SW8080	UG/L	<1	<1	<1	<1	<1	<1	<1
PCB-1254 (AROCHLOR 1254)	SW8080	UG/L	<1	<1	<1	<1	<1	<1	<1
PCB-1260 (AROCHLOR 1260)	SW8080	UG/L	<1	<1	<1	<1	<1	<1	<1
TOXAPHENE	SW8080	UG/L	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75
p,p'-DDD	SW8080	UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	SW8080	UG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
p,p'-DDT	SW8080	UG/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SURROGATE:									
2,4,5,6-TETRACHLORO-META-XYLENE	SW8080	UG/L	66	81	79	74	76	98	101

Duplicate pairs:

101MW-1 = 101MW-101	LF1MW-5 = LF1MW-501
771MW-2 = 771MW-201	OBMW-17 = OBMW-1701
BFSMW-3A = BFSMW-301A	OBMW-5 = OBMW-501
HS1MW-02 = HS1MW-201	OBMW-8 = OBMW-801
HS2MW-02 = HS2MW-201	WSAMW-4 = WSAMW-401

ANALYTICAL RESULTS SUMMARY
METALS AND CYANIDE
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION – QUARTERLY SAMPLING – QUARTER II
SAMPLING PERFORMED MARCH, 1993

PARAMETER	TEST CODE	UNITS	100MW-1	101MW-1	101MW-101	110MW-1	301MW-4	771MW-2	771MW-201
CHROMIUM, HEXAVALENT	A312B	MG/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
ALUMINUM	SW6010	MG/L	<0.21	1.33	1.24	0.96	<0.21	<0.21	<0.21
ANTIMONY	SW6010	MG/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
BARIUM	SW6010	MG/L	0.095	<0.02	<0.02	0.06	<0.02	0.122	0.104
BERYLLIUM	SW6010	MG/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
CADMIUM	SW6010	MG/L	<0.01	0.035	<0.01	<0.01	<0.01	<0.01	<0.01
CALCIUM	SW6010	MG/L	56.3	25.8	25.7	47.4	46.8	132	128
CHROMIUM, TOTAL	SW6010	MG/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
COBALT	SW6010	MG/L	<0.02	<0.02	0.071	<0.02	<0.02	<0.02	<0.02
COPPER	SW6010	MG/L	<0.01	0.037	0.038	<0.01	<0.01	<0.01	<0.01
IRON	SW6010	MG/L	2.23	2.34	2.40	37.4	0.64	24.3	27.1
MAGNESIUM	SW6010	MG/L	8.98	4.27	4.32	4.51	7.68	17.5	16.3
MANGANESE	SW6010	MG/L	0.631	2.25	2.35	8.62	0.034	4.79	4.71
NICKEL	SW6010	MG/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
POTASSIUM	SW6010	MG/L	5.98	0.97	0.85	1.02	2.09	2.80	2.85
SILVER	SW6010	MG/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
SODIUM	SW6010	MG/L	50.8	70.8JH	70.0	1.70	10.1	10.8	11.3
VANADIUM	SW6010	MG/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
ZINC	SW6010	MG/L	0.127	0.237	0.247	0.182	0.131	0.231J	0.158
ARSENIC	SW7060	MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.015	0.016
LEAD	SW7421	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
MERCURY	SW7470	MG/L	<0.0002JL	<0.0002	<0.0002	<0.0002	<0.0002JL	<0.0002	<0.0002
SELENIUM	SW7740	MG/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
THALLIUM	SW7841	MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
CYANIDE	SW9010	MG/L	<0.01	0.034	0.027	<0.01	<0.01	<0.01	<0.01

J = Estimated quantitation based upon QC data.
JB = Estimated quantitation: possible biased high or false positive based on QC data.
JH = Estimated quantitation: possible biased high based on QC data.
JL = Estimated quantitation: possibly biased low based upon QC data.
NT = Not tested; samples received by laboratory outside of holding time.

Duplicate pairs:

101MW-1 = 101MW-101
771MW-2 = 771MW-201
BFSMW-3A = BFSMW-301A
HS1MW-02 = HS1MW-201
HS2MW-02 = HS2MW-201
LF1MW-5 = LF1MW-501
OBMW-17 = OBMW-1701
OBMW-5 = OBMW-501
OBMW-8 = OBMW-801
WSAMW-4 = WSAMW-401

ANALYTICAL RESULTS SUMMARY
ETHYLENE GLYCOLS
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION – QUARTERLY SAMPLING – QUARTER II
SAMPLING PERFORMED MARCH, 1993

PARAMETER	TEST CODE	UNITS	100MW–1	101MW–1	101MW–101	110MW–1	301MW–4	771MW–2
Total Glycol	NYS DOH APC–44	mg/L	0.84JH	0.26J	0.26J	0.30JH	0.25JH	0.34J

J = Estimated quantitation based upon QC data
JH = Estimated quantitation: possibly biased high based upon QC data
Duplicate pairs:

101MW–1 = 101MW–101	OBMW–6 = OBMW–601
771MW–9 = 771MW–901	OBMW–17 = OBMW–1701
BFSMW–3A = BFSMW–301A	OBMW–10 = OBMW–1001
HS1MW–02 = HS1MW–201	OBMW–8 = OBMW–801
HS2MW–02 = HS2MW–201	OBMW–15 = OBMW–1501
OBMW–13 = OBMW–1301	OBMW–12 = OBMW–1201

ANALYTIC. ...ULTS SUMMARY
VOLATILE ORGANICS
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION – QUARTERLY SAMPLING – QUARTER III
SAMPLING PERFORMED JUNE, 1993

PARAMETER	TEST CODE	UNITS	100MW-1	101MW-1	101MW-101	301MW-4	771MW-2	771MW-201	771MW-4	771MW-5	771MW-6	771MW-8	771MW-9
1,1,1-TRICHLOROETHANE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2,2-TETRACHLOROETHANE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2-TRICHLOROETHANE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-DICHLOROETHANE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-DICHLOROETHENE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-DICHLOROETHANE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-DICHLOROPROPANE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-HEXANONE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
ACETONE	SW8240	UG/L	<5.0	16	<5.0	<5.0	860 JD	960 JD	2200 JD	21.0 JB	14.0 JB	2400 JD	18.0
BENZENE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5900 JD	<5.0	<5.0	9100 JD	<5.0
BROMODICHLOROMETHANE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
BROMOFORM	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
BROMOMETHANE	SW8240	UG/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
CARBON DISULFIDE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CARBON TETRACHLORIDE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CHLOROBENZENE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CHLOROETHANE	SW8240	UG/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
CHLOROFORM	SW8240	UG/L	2.3 J	<5.0	<5.0	1.4 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CHLOROMETHANE	SW8240	UG/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
DIBROMOCHLOROMETHANE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
ETHYLBENZENE	SW8240	UG/L	2.4 J	<5.0	<5.0	<5.0	<5.0	<5.0	700 JD	<5.0	<5.0	1600 JD	<5.0
METHYL ETHYL KETONE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	29.0	11.0	2200 JD	<5.0	<5.0	<5.0	<5.0
METHYL ISOBUTYL KETONE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
METHYLENE CHLORIDE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	49.0	16.0	6.5 JB	8.7 JB	7.0 JB	7.0 JB	<5.0
STYRENE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TETRACHLOROETHYLENE(PCE)	SW8240	UG/L	<5.0	290 JD	290 JD	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TOLUENE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	29.0	<5.0	<5.0	1700 JD	<5.0
TOTAL 1,2-DICHLOROETHENE	SW8240	UG/L	<5.0	41	40	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TRICHLOROETHYLENE (TCE)	SW8240	UG/L	<5.0	270 JD	290 JD	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
VINYL CHLORIDE	SW8240	UG/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
XYLENES, TOTAL	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	1900 JD	<5.0	<5.0	3600 JD	<5.0
cis-1,3-DICHLOROPROPENE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
trans-1,3-DICHLOROPROPENE	SW8240	UG/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SURROGATES:													
1,2-DICHLOROETHANE-D4	SW8240	%	83	84	82	92	89	88	93	95	91	93	91
1-BROMO-4-FLUOROBENZENE	SW8240	%	101	101	105	101	103	102	98	92	93	102	99
TOLUENE-D8	SW8240	%	97	96	95	103	96	99	97	94	101	98	106

NOTES:
J = Estimated quantitation based upon QC data.
JB = Estimated quantitation: possible biased high or false positive based on QC data.
JD = Estimated result due to dilution.
Duplicate pairs:

101MW-1 = 101MW-101	LF1MW-5 = LF1MW-501
771MW-2 = 771MW-201	OBMW-17 = OBMW-1701
BFSMW-3A = BFSMW-301A	OBMW-5 = OBMW-501
HS1MW-02 = HS1MW-201	OBMW-8 = OBMW-801
HS2MW-02 = HS2MW-201	WSAMW-4 = WSAMW-401

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ANALYTICAL RESULTS SUMMARY
SEMI-VOLATILE ORGANICS
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION - QUARTERLY SAMPLING - QUARTER III
SAMPLING PERFORMED JUNE, 1993

PARAMETER	TEST CODE	UNITS	100MW-1	101MW-1	101MW-101	301MW-4	771MW-2	771MW-201	771MW-4
1,2-DICHLOROBENZENE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
1,3-DICHLOROBENZENE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
1,4-DICHLOROBENZENE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
2,4,5-TRICHLOROPHENOL	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
2,4,6-TRICHLOROPHENOL	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
2,4-DICHLOROPHENOL	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
2,4-DIMETHYLPHENOL	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
2,4-DINITROPHENOL	SW8270	UG/L	<50	<50	<50 R	<50	<50	<50	<50
2,4-DINITROTOLUENE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
2,6-DINITROTOLUENE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
2-CHLORONAPHTHALENE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
2-CHLOROPHENOL	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
2-METHYLNAPHTHALENE	SW8270	UG/L	<10	5.4 J	5.5 J	<10	<10	<10	44
2-METHYLPHENOL	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
2-NITROANILINE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
2-NITROPHENOL	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
3,3'-DICHLOROBENZIDINE	SW8270	UG/L	<20	<20	<20 R	<20	<20	<20	<20
3-NITROANILINE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
4,6-DINITRO-2-METHYLPHENOL	SW8270	UG/L	<50	<50	<50 R	<50	<50	<50	<50
4-BROMOPHENYL PHENYL ETHER	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
4-CHLORO-3-METHYLPHENOL	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
4-CHLOROANILINE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
4-CHLOROPHENYL PHENYL ETHER	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
4-METHYLPHENOL	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
4-NITROANILINE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
4-NITROPHENOL	SW8270	UG/L	<50	<50	<50 R	<50	<50	<50	<50
ACENAPHTHENE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
ACENAPTHYLENE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
ANTHRACENE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
BENZO(a)ANTHRACENE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
BENZO(a)PYRENE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
BENZO(b)FLUORANTHENE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
BENZO(g,h,i)PERYLENE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
BENZO(k)FLUORANTHENE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
BENZYL BUTYL PHTHALATE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
CARBAZOLE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
CHRYSENE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
DI-n-BUTYL PHTHALATE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
DI-n-OCTYL PHTHALATE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
DIBENZ(a,h)ANTHRACENE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
DIBENZOFURAN	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10
DIETHYL PHTHALATE	SW8270	UG/L	<10	<10	<10 R	<10	<10	<10	<10

ANALYTICAL RESULTS SUMMARY
PESTICIDES AND PCBs
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION – QUARTERLY SAMPLING – QUARTER III
SAMPLING PERFORMED JUNE, 1993

PARAMETER	TEST CODE	UNITS	100MW-1	101MW-1	101MW-101	301MW-4	771MW-2	771MW-201	771MW-4	771MW-5
ALDRIN	SW8080	UG/L	<.04	<.04	<.04	<.04	<.04	<.04	<.04	<.04
ALPHA BHC	SW8080	UG/L	<.04	<.04	<.04	<.04	<.04	<.04	<.04	<.04
ALPHA ENDOSULFAN	SW8080	UG/L	<.04	<.04	<.04	<.04	<.04	<.04	<.04	<.04
ALPHA-CHLORDANE	SW8080	UG/L	<.04	<.04	<.04	<.04	<.04	<.04	<.04	<.04
BETA BHC	SW8080	UG/L	<.04	<.04	<.04	<.04	<.04	<.04	<.04	<.04
BETA ENDOSULFAN	SW8080	UG/L	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
DELTA BHC	SW8080	UG/L	<.04	<.04	<.04	<.04	<.04	<.04	<.04	<.04
DIELDRIN	SW8080	UG/L	<.04	<.04	<.04	<.04	<.04	<.04	<.04	<.04
ENDOSULFAN SULFATE	SW8080	UG/L	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
ENDRIN	SW8080	UG/L	<.04	<.04	<.04	<.04	<.04	<.04	<.04	<.04
ENDRIN ALDEHYDE	SW8080	UG/L	<.25	<.25	<.25	<.25	<.25	<.25	<.25	<.25
ENDRIN KETONE	SW8080	UG/L	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
GAMMA BHC (LINDANE)	SW8080	UG/L	<.04	<.04	<.04	<.04	<.04 JL	<.04 JL	<.04 JL	<.04 JL
GAMMA-CHLORDANE	SW8080	UG/L	<.04	<.04	<.04	<.04	<.04	<.04	<.04	<.04
HEPTACHLOR	SW8080	UG/L	<.04	<.04	<.04	<.04	<.04	<.04	<.04	<.04
HEPTACHLOR EPOXIDE	SW8080	UG/L	<.25	<.25	<.25	<.25	<.25	<.25	<.25	<.25
METHOXYCHLOR	SW8080	UG/L	<.55	<.55	<.55	<.55	<.55	<.55	<.55	<.55
PCB-1016 (AROCHLOR 1016)	SW8080	UG/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCB-1221 (AROCHLOR 1221)	SW8080	UG/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
PCB-1232 (AROCHLOR 1232)	SW8080	UG/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCB-1242 (AROCHLOR 1242)	SW8080	UG/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCB-1248 (AROCHLOR 1248)	SW8080	UG/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCB-1254 (AROCHLOR 1254)	SW8080	UG/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCB-1260 (AROCHLOR 1260)	SW8080	UG/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
TOXAPHENE	SW8080	UG/L	<.75	<.75	<.75	<.75	<.75	<.75	<.75	<.75
p,p'-DDD	SW8080	UG/L	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
p,p'-DDE	SW8080	UG/L	<.04	<.04	<.04	<.04	<.04	<.04	<.04	<.04
p,p'-DDT	SW8080	UG/L	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
SURROGATES:										
2,4,5,6-TETRACHLORO-META-XYLENE	SW8080	%	109	115	114	120	128	118	123	114

JL = Estimated quantitation: possibly biased low based upon QC data.
Duplicate pairs:
R – Datum rejected based upon QC data: do not use.

101MW-1 = 101MW-101
771MW-2 = 771MW-201
BFSMW-3A = BFSMW-301A
HS1MW-02 = HS1MW-201
HS2MW-02 = HS2MW-201
LF1MW-5 = LF1MW-501
OBMW-17 = OBMW-1701
OBMW-5 = OBMW-501
OBMW-8 = OBMW-801
WSAMW-4 = WSAMW-401

ANALYTICAL RESULTS SUMMARY
METALS AND CYANIDE
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION – QUARTERLY SAMPLING – QUARTER III
SAMPLING PERFORMED JUNE, 1993

PARAMETER	TEST CODE	UNITS	100MW-1	101MW-1	101MW-101	301MW-4	771MW-2	771MW-201	771MW-4	771MW-5
CHROMIUM, HEXAVALENT	A312B	MG/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
ALUMINUM	SW6010	MG/L	<.21	7.64	11.9	<.21	<.21	<.21	<.21	<.21
ANTIMONY	SW6010	MG/L	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
BARIUM	SW6010	MG/L	0.064	0.032	0.038	<.02	0.132	0.132	0.063	0.021
BERYLLIUM	SW6010	MG/L	<.008	<.008	<.008	<.008	<.008	<.008	<.008	<.008
CADMIUM	SW6010	MG/L	<.01	0.033	0.028	<.01	<.01	<.01	<.01	<.01
CALCIUM	SW6010	MG/L	49.1	12.5	11.7	44.5	147	138	93.7	55.3
CHROMIUM, TOTAL	SW6010	MG/L	<.02	0.287	0.282	<.02	<.02	<.02	<.02	<.02
COBALT	SW6010	MG/L	<.02	<.02	0.021	<.02	<.02	<.02	<.02	<.02
COPPER	SW6010	MG/L	<.01	0.377	0.420	<.01	<.01	<.01	<.01	<.01
IRON	SW6010	MG/L	0.96 J	7.03 J	13.4 J	0.23	56.3	55.9	14.8	3.19
MAGNESIUM	SW6010	MG/L	6.79	1.64	2.60	6.74	18.4	17.8	13.7	5.26
MANGANESE	SW6010	MG/L	0.461	2.44	2.50	<.01	7.01	6.84	3.65	0.350
NICKEL	SW6010	MG/L	<.04	0.061	0.090	<.04	<.04	<.04	<.04	<.04
POTASSIUM	SW6010	MG/L	2.93 J	2.62 J	5.16 J	2.18 J	2.20	2.11	1.39	4.37
SILVER	SW6010	MG/L	<.03	<.03	<.03	<.03	<.03	<.03	<.03	<.03
SODIUM	SW6010	MG/L	17.7	237	212	14.0	5.92	5.86	2.77	1.42
VANADIUM	SW6010	MG/L	<.02	<.02	<.02	<.02	<.02	<.02	<.02	<.02
ZINC	SW6010	MG/L	0.221	0.052	0.080	0.194	0.172	0.197	0.188	0.228
ARSENIC	SW7060	MG/L	<0.01	0.047	0.045	<.01	0.018	0.016	0.012	<0.01
LEAD	SW7421	MG/L	0.006	0.046	0.046	<.005	0.006	0.007	0.017	<.005
MERCURY	SW7471	MG/L	<0.0002	0.0005	0.0004	<.0002	<0.0002	<0.0002	<0.0002	<.0002
SELENIUM	SW7740	MG/L	<0.005	<0.005	<0.005	<.005	<0.005	<0.005	<0.005	<.005
THALLIUM	SW7841	MG/L	<0.01	<0.01	<0.01	<.01	<0.01	<0.01	<0.01	<.01
CYANIDE	SW9010	MG/L	<.01	0.202	0.131	<.01	<.01	<.01	<.01	<.01

J = Estimated quantitation based upon QC data.
NA = Not available; sample was not collected.
Duplicate pairs:

101MW-1 = 101MW-101	LF1MW-5 = LF1MW-501
771MW-2 = 771MW-201	OBMW-17 = OBMW-1701
BFSMW-3A = BFSMW-301A	OBMW-5 = OBMW-501
HS1MW-02 = HS1MW-201	OBMW-8 = OBMW-801
HS2MW-02 = HS2MW-201	WSAMW-4 = WSAMW-401

ANALYTICAL RESULTS SUMMARY
ETHYLENE GLYCOLS
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION – QUARTERLY SAMPLING – QUARTER III
SAMPLING PERFORMED JUNE, 1993

PARAMETER	TEST CODE	UNITS	100MW–1	101MW–1	101MW–101	301MW–4	771MW–2	771MW–201	771MW–4	771MW–401
TOTAL GLYCOL	NYS DOH APC–44	MG/L	<0.05	0.69 J	1.2 J	<0.05	0.13 J	0.57 J	0.07 J	<0.05 J
										0.09 J
CONFIRMATION ANALYSIS				0.32 J	0.91		0.07 J	0.46	0.11	<0.05

J = Estimated quantitation based upon QC data.
Duplicate pairs:

101MW–1 = 101MW–101	OBMW–6 = OBMW–601
771MW–2 = 771MW–201	OBMW–7 = OBMW–701
771MW–4 = 77MW–401	OBMW–8 = OBMW–801
771MW–9 = 77MW–901	OBMW–9 = OBMW–901
779MW–2 = 779MW–201	OBMW–10 = OBMW–1001
BFSMW–1 = BFSMW–101	OBMW–12 = OBMW–1201
BFSMW–3A = BFSMW–301A	OBMW–13 = OBMW–1301
HS1MW–02 = HS1MW–201	OBMW–15 = OBMW–1501
HS2MW–02 = HS2MW–201	OBMW–17 = OBMW–1701
LF1MW–5 = LF1MW–501	WSAMW–2 = WSAMW–201
OBMW–2 = OBMW–201	WSAMW–4 = WSAMW–401
OBMW–5 = OBMW–501	

ANALYTIC. .SULTS SUMMARY
VOLATILE ORGANICS
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION – QUARTERLY SAMPLING – QUARTER IV
SAMPLING PERFORMED SEPTEMBER, 1993

PARAMETER	TEST CODE	UNITS	100MW-1	301MW-4	771MW-2	771MW-201	771MW-4	771MW-5	771MW-6	771MW-8	771MW-801
1,1,1-Trichloroethane	SW8240	ug/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
1,1,2,2-Tetrachloroethane	SW8240	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,1,2-Trichloroethane	SW8240	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	SW8240	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	SW8240	ug/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
1,2-Dichloroethane	SW8240	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
1,2-Dichloroethene (total)	SW8240	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	SW8240	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone	SW8240	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Hexanone	SW8240	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Methyl-2-pentanone	SW8240	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	SW8240	ug/L	<50	<50	1400	870	<50	<50	<50	<25	<25
Benzene	SW8240	ug/L	<1.0	<1.0	<1.0	<1.0	3200	<1.0	<1.0	6000	6000
Bromodichloromethane	SW8240	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	SW8240	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bromomethane	SW8240	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Carbon disulfide	SW8240	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon tetrachloride	SW8240	ug/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Chlorobenzene	SW8240	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	SW8240	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Chloroform	SW8240	ug/L	2.7	2.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	SW8240	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Dibromochloromethane	SW8240	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ethylbenzene	SW8240	ug/L	1.3	<1.0	<1.0	<1.0	47.0	<1.0	<1.0	1000	1000
Methylene chloride	SW8240	ug/L	11 JT	12 JT	<10	12 JT	17 JT	13 JT	12 JT	<10	<10
Styrene	SW8240	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Tetrachloroethene	SW8240	ug/L	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Toluene	SW8240	ug/L	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	380	380
Trichloroethene	SW8240	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl acetate	SW8240	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl chloride	SW8240	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Xylenes (total)	SW8240	ug/L	<4.0	<4.0	<4.0	<4.0	180.0	<4.0	<4.0	3800	3800
cis-1,3-Dichloropropene	SW8240	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	SW8240	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
SURROGATES:											
1,2-Dichloroethane-d4 %R76-114	SW8240	%	101	96	95	95	101	111	98	107	94
Bromofluorobenzene %R 86-115	SW8240	%	105	99	102	102	101	97	100	102	88
Toluene-d8 %R 88-110	SW8240	%	92	97	99	96	100	100	101	102	95

JL – Estimated quantitation – possilby biased high low based upon QC data.

JT – Estimated quantitation – possibly biased high or false positive based upon trip blank data.

Duplicate Pairs:

771MW-2 – 771MW-201	LF1MW-5 – LF1MW-501
771MW-8 – 771MW-801	OBMW-5 – OBMW-501
BFSMW-3A – BFSMW-301A	OBMW-8 – OBMW-801
HS1MW-02 – HS1MW-201	OBMW-17 – OBMW-1701
HS2MW-2 – HS2MW-201	WSAMW-4 – WSAMW-401

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ANALYTICAL RESULTS SUMMARY
SEMI-VOLATILE ORGANICS
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION - QUARTERLY SAMPLING - QUARTER IV
SAMPLING PERFORMED SEPTEMBER, 1993

PARAMETER	TEST CODE	UNITS	100MW-1	301MW-4	771MW-2	771MW-201	771MW-4	771MW-5	771MW-6	771MW-8	771MW-801
1,2,4-Trichlorobenzene	SW8270	ug/L	<3.1	<3.1	<3.0	<3.3	<3.0 JL	<3.1	<3.1	<3.3	<3.1
1,2-Dichlorobenzene	SW8270	ug/L	<4.1	<4.2	<4.0	<4.4	<4.4	<4.1	<4.1	<4.4	<4.1
1,3-Dichlorobenzene	SW8270	ug/L	<3.1	<3.1	<3.0	<3.3	<3.3	<3.1	<3.1	<3.3	<3.1
1,4-Dichlorobenzene	SW8270	ug/L	<4.1	<4.2	<4.0	<4.4	<4.4 JL	<4.1	<4.1	<4.4	<4.1
2,4,5-Trichlorophenol	SW8270	ug/L	<5.2	<5.2	<5.0	<5.5	<5.0	<5.1	<5.2	<5.6	<5.1
2,4,6-Trichlorophenol	SW8270	ug/L	<4.1	<4.2	<4.0	<4.4	<4.0	<4.1	<4.1	<4.4	<4.1
2,4-Dichlorophenol	SW8270	ug/L	<5.2	<5.2	<5.0	<5.5	<5.6	<5.1	<5.2	<5.6	<5.1
2,4-Dimethylphenol	SW8270	ug/L	<5.2	<5.2	<5.0	<5.5	<5.6	<5.1	<5.2	<5.6	<5.1
2,4-Dinitrophenol	SW8270	ug/L	<21	<21	<20	<22	<22	<20	<21	<22	<20
2,4-Dinitrotoluene	SW8270	ug/L	<4.1	<4.2	<4.0	<4.4	<4.4	<4.1	<4.1	<4.4	<4.1
2,6-Dinitrotoluene	SW8270	ug/L	<4.1	<4.2	<4.0	<4.4	<4.4	<4.1	<4.1	<4.4	<4.1
2-Chloronaphthalene	SW8270	ug/L	<2.1	<2.1	<2.0	<2.2	<2.2	<2.0	<2.1	<2.2	<2.0
2-Chlorophenol	SW8270	ug/L	<5.2	<5.2	<5.0	<5.5	<5.6	<5.1	<5.2	<5.6	<5.1
2-Methylnaphthalene	SW8270	ug/L	<4.1	<4.2	<4.0	<4.4	46	<4.1	<4.1	9.4	18
2-Methylphenol	SW8270	ug/L	<4.1	<4.2	<4.0	<4.4	<4.4	<4.1	<4.1	<4.4	<4.1
2-Nitroaniline	SW8270	ug/L	<4.1	<4.2	<4.0	<4.4	<4.4	<4.1	<4.1	<4.4	<4.1
2-Nitrophenol	SW8270	ug/L	<5.2	<5.2	<5.0	<5.5	<5.6	<5.1	<5.2	<5.6	<5.1
3,3'-Dichlorobenzidene	SW8270	ug/L	<10	<10	<10	<11	<11	<10	<10	<11	<10
3-Nitroaniline	SW8270	ug/L	<5.2	<5.2	<5.0	<5.5	<5.5	<5.1	<5.2	<5.6	<5.1
4,6-Dinitro-2-methylphenol	SW8270	ug/L	<3.1	<3.1	<3.0	<3.3	<3.3	<3.1	<3.1	<3.3	<3.1
4-Bromophenyl phenyl ether	SW8270	ug/L	<3.1	<3.1	<3.0	<3.3	<3.3	<3.1	<3.1	<3.3	<3.1
4-Chloro-3-methylphenol	SW8270	ug/L	<4.1	<4.2	<4.0	<4.4	<4.4	<4.1	<4.1	<4.4	<4.1
4-Chloroaniline	SW8270	ug/L	<10	<10	<10	<11	<11	<10	<10	<11	<10
4-Chlorophenyl phenyl ether	SW8270	ug/L	<2.1	<2.1	<2.0	<2.2	<2.2	<2.0	<2.1	<2.2	<2.0
4-Methylphenol	SW8270	ug/L	<5.2	<5.2	<5.0	<5.5	<5.6	<5.1	<5.2	<5.6	<5.1
4-Nitroaniline	SW8270	ug/L	<2.1	<2.1	<2.0	<2.2	<2.2	<2.0	<2.1	<2.2	<2.0
4-Nitrophenol	SW8270	ug/L	<21	<21	<20	<22	<22	<20	<21	<22	<20
Acenaphthene	SW8270	ug/L	<2.1	<2.1	<2.0	<2.2	<2.2	<2.0	<2.1	<2.2	<2.0
Acenaphthylene	SW8270	ug/L	<3.1	<3.1	<3.0	<3.3	<3.3	<3.1	<3.1	<3.3	<3.1
Anthracene	SW8270	ug/L	<3.1	<3.1	<3.0	<3.3	<3.3	<3.1	<3.1	<3.3	<3.1
Benz[a]anthracene	SW8270	ug/L	<2.1	<2.1	<2.0	<2.2	<2.2	<2.0	<2.1	<2.2	<2.0
Benzo[a]pyrene	SW8270	ug/L	<2.1	<2.1	<2.0	<2.2	<2.2	<2.0	<2.1	<2.2	<2.0
Benzo[b]fluoranthene	SW8270	ug/L	<4.1	<4.2	<4.0	<4.4	<4.4	<4.1	<4.1	<4.4	<4.1
Benzo[ghi]perylene	SW8270	ug/L	<3.1	<3.1	<3.0	<3.3	<3.3	<3.1	<3.1	<3.3	<3.1
Benzo[k]fluoranthene	SW8270	ug/L	<3.1	<3.1	<3.0	<3.3	<3.3	<3.1	<3.1	<3.3	<3.1
Benzoic acid	SW8270	ug/L	<52	<52	<50	<55	<56	<51	<52	<56	<51
Benzyl alcohol	SW8270	ug/L	<10	<10	<10	<11	<11	<10	<10	<11	<10
Butyl benzyl phthalate	SW8270	ug/L	<3.1	<3.1	<3.0	<3.3	<3.3	<3.1	<3.1	<3.3	<3.1
Chrysene	SW8270	ug/L	<3.1	<3.1	<3.0	<3.3	<3.3	<3.1	<3.1	<3.3	<3.1
Di-n-butylphthalate	SW8270	ug/L	<5.2	<5.2	<5.0	<5.5	<5.6	<5.1	<5.2	<5.6	<5.1
Di-n-octylphthalate	SW8270	ug/L	<4.1	<4.2	<4.0	<4.4	<4.4	<4.1	<4.1	<4.4	<4.1
Dibenz[a,h]anthracene	SW8270	ug/L	<3.1	<3.1	<3.0	<3.3	<3.3	<3.1	<3.1	<3.3	<3.1
Dibenzofuran	SW8270	ug/L	<2.1	<2.1	<2.0	<2.2	<2.2	<2.0	<2.1	<2.2	<2.0

ANALYTICAL RESULTS SUMMARY
PESTICIDES/PCBs
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION – QUARTERLY SAMPLING – QUARTER IV
SAMPLING PERFORMED SEPTEMBER, 1993

PARAMETER	TEST CODE	UNITS	100MW-1	301MW-4	771MW-2	771MW-201	771MW-4	771MW-5	771MW-6	771MW-8	771MW-801
4,4'-DDD	SW8080	ug/L	<0.1	<0.11	<0.11	<0.1	<0.11	<0.11	<0.1	<0.1	<0.11
4,4'-DDE	SW8080	ug/L	<0.1	<0.11	<0.11	<0.1	<0.11	<0.11	<0.1	<0.1	<0.11
4,4'-DDT	SW8080	ug/L	<0.1	<0.11	<0.11	<0.1	<0.11	<0.11	<0.1	<0.1	<0.11
Aldrin	SW8080	ug/L	<0.05	<0.05	<0.05	<0.05	<0.06	<0.05	<0.05	<0.05	<0.06
Aroclor-1016	SW8080	ug/L	<1.0	<1.1	<1.1	<1.0	<1.1	<1.1	<1.0	<1.0	<1.1
Aroclor-1221	SW8080	ug/L	<2.0	<2.1	<2.2	<2.0	<2.2	<2.1	<2.0	<2.0	<2.2
Aroclor-1232	SW8080	ug/L	<1.0	<1.1	<1.1	<1.0	<1.1	<1.1	<1.0	<1.0	<1.1
Aroclor-1242	SW8080	ug/L	<1.0	<1.1	<1.1	<1.0	<1.1	<1.1	<1.0	<1.0	<1.1
Aroclor-1248	SW8080	ug/L	<1.0	<1.1	<1.1	<1.0	<1.1	<1.1	<1.0	<1.0	<1.1
Aroclor-1254	SW8080	ug/L	<1.0	<1.1	<1.1	<1.0	<1.1	<1.1	<1.0	<1.0	<1.1
Aroclor-1260	SW8080	ug/L	<1.0	<1.1	<1.1	<1.0	<1.1	<1.1	<1.0	<1.0	<1.1
Dieldrin	SW8080	ug/L	<0.1	<0.11	<0.11	<0.1	<0.11	<0.11	<0.1	<0.1	<0.11
Endosulfan I	SW8080	ug/L	<0.05	<0.05	<0.05	<0.05	<0.06	<0.05	<0.05	<0.05	<0.06
Endosulfan II	SW8080	ug/L	<0.1	<0.11	<0.11	<0.1	<0.11	<0.11	<0.1	<0.1	<0.11
Endosulfan sulfate	SW8080	ug/L	<0.1	<0.11	<0.11	<0.1	<0.11	<0.11	<0.1	<0.1	<0.11
Endrin	SW8080	ug/L	<0.1	<0.11	<0.11	<0.1	<0.11	<0.11	<0.1	<0.1	<0.11
Endrin aldehyde	SW8080	ug/L	<0.1	<0.11	<0.11	<0.1	<0.11	<0.11	<0.1	<0.1	<0.11
Heptachlor	SW8080	ug/L	<0.05	<0.05	<0.05	<0.05	<0.06	<0.05	<0.05	<0.05	<0.06
Heptachlor epoxide	SW8080	ug/L	<0.05	<0.05	<0.05	<0.51	<0.06	<0.05	<0.05	<0.05	<0.06
Methoxychlor	SW8080	ug/L	<0.5	<0.53	<0.54	<5.1	<0.56	<0.53	<0.5	<0.5	<0.55
Toxaphene	SW8080	ug/L	<5.0	<5.3	<5.4	<5.0	<5.6	<5.3	<5.0	<5.0	<5.5
alpha-BHC	SW8080	ug/L	<0.05	<0.05	<0.05	<0.05	<0.06	<0.05	<0.05	<0.05	<0.06
alpha-Chlordane	SW8080	ug/L	<0.05	<0.05	<0.05	<0.05	<0.06	<0.05	<0.05	<0.05	<0.06
beta-BHC	SW8080	ug/L	<0.05	<0.05	<0.05	<0.05	<0.06	<0.05	<0.05	<0.05	<0.06
delta-BHC	SW8080	ug/L	<0.05	<0.05	<0.05	<0.05	<0.06	<0.05	<0.05	<0.05	<0.06
gamma-BHC	SW8080	ug/L	<0.05	<0.05	<0.05	<0.05	<0.06	<0.05	<0.05	<0.05	<0.06
gamma-Chlordane	SW8080	ug/L	<0.05	<0.05	<0.05	<0.05	<0.06	<0.05	<0.05	<0.05	<0.06
SURROGATE:											
Dibutylchlorendate %R 24-154	SW8080	%	72	76	79	72	77	74	79	52	62

* – Sample Recollected.
JL – Estimated quantitation – possibly biased low based upon QC data.

Duplicate Pairs:

771MW-2 – 771MW-201	LF1MW-5 – LF1MW-501
771MW-8 – 771MW-801	OBMW-5 – OBMW-501
BFSMW-3A – BFSMW-301A	OBMW-8 – OBMW-801
HS1MW-02 – HS1MW-201	OBMW-17 – OBMW-1701
HS2MW-02 – HS2MW-201	WSAMW-4 – WSAMW-401

ANALYTICAL RESULTS SUMMARY
METALS AND CYANIDE
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION – QUARTERLY SAMPLING – QUARTER IV
SAMPLING PERFORMED SEPTEMBER, 1993

PARAMETER	TESTCODE	UNITS	100MW-1	301MW-4	771MW-2	771MW-201	771MW-4	771MW-5	771MW-6	771MW-8	771MW-801
Chromium, Hexavalent	SW7196	MG/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aluminum	SW6010	MG/L	<0.1	0.31	<0.1	0.16	<0.1 JL	<0.1	<0.1 JL	<0.1	36.0
Antimony	SW6010	MG/L	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056	<0.056
Barium	SW6010	MG/L	0.071	<0.03	0.11	0.1	0.09	0.05	0.067	0.082	0.084
Beryllium	SW6010	MG/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	SW6010	MG/L	<0.004	0.004	<0.004	<0.004	<0.004	0.005	<0.004	<0.004	<0.004
Calcium	SW6010	MG/L	53.0	51.0	120	120	0.094	69.0	160	110	110
Chromium	SW6010	MG/L	<0.008	<0.008	<0.008	<0.008	0.009	<0.008	<0.008	<0.008	0.024
Cobalt	SW6010	MG/L	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	0.013
Copper	SW6010	MG/L	<0.008	<0.008	<0.008	0.009	<0.008	<0.006	0.019	<0.008	0.052
Iron	SW6010	MG/L	0.95	0.48	37.0	36.0	17.0 JH	6.0	0.16 JH	56.0	56.0
Magnesium	SW6010	MG/L	7.8	7.8	16.0	15.0	16.0	6.5	18.0	12.0	12.0
Manganese	SW6010	MG/L	0.42	0.045	5.2	5.2	4.3	0.6	0.64	4.4	4.5
Nickel	SW6010	MG/L	<0.025	<0.025	0.027	<0.025	<0.025	<0.025	<0.025	<0.025	0.036
Potassium	SW6010	MG/L	3.1	2.0	1.8	1.7	1.7	4.0	3.5	1.2	1.2
Silver	SW6010	MG/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Sodium	SW6010	MG/L	15.0	13.0	2.6	2.3	3.4	1.2	13.0	1.3	1.2
Vanadium	SW6010	MG/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	SW6010	MG/L	<0.007	<0.007	<0.007	<0.007	<0.007	0.014	0.012	<0.007	0.56
Arsenic	SW7060	MG/L	0.0031	<0.002	0.025	0.025	0.018	0.01	<0.002	0.033	0.034
Lead	SW7421	MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0037
Mercury	SW7470	MG/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Selenium	SW7740	MG/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Thallium	SW7841	MG/L	<0.001	<0.001	<0.001	<0.001	<0.001 JL	<0.001	<0.001 JL	<0.001	<0.001
Cyanide	SW9010	MG/L	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003

JL – Estimated quantitation – possibly biased low based upon QC data.
JH – Estimated quantitation – possilby biased high based upon QC data.
Duplicate Pairs:

771MW-2 = 771MW-201	LF1MW-5 = LF1MW-501
771MW-8 = 771MW-801	OBMW-5 = OBMW-501
BFSMW-3A = BFSMW-301A	OBMW-8 = OBMW-801
HS1MW-02 – HS1MW-201	OBMW-17 – OBMW-1701
HS2MW-2 – HS2MW-201	WSAMW-4 = WSAMW-401

ANALYTICAL RESULTS SUMMARY
ETHYLENE GLYCOLS
GRIFFISS AIR FORCE BASE
BASELINE INVESTIGATION – QUARTERLY SAMPLING – QUARTER IV
SAMPLING PERFORMED SEPTEMBER, 1993

PARAMETER	TESTCODE	UNITS	100MW-1	301MW-4	771MW-2	771MW-201	771MW-4	771MW-401	771MW-5	771MW-6	771MW-8
GLYCOLS	NYS DOH APC-44	MG/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Duplicate Pairs:

771MW-2 = 771MW-201	OBMW-6 = OBMW-601
771MW-4 = 771MW-401	OBMW-7 = OBMW-701
771MW-8 = 771MW-801	OBMW-8 = OBMW-801
771MW-9 = 771MW-901	OBMW-9 = OBMW-901
779MW-2 = 779MW-201	OBMW-10 = OBMW-1001
BFSMW-1 = BFSMW-101	OBMW-12 = OBMW-1201
BFSMW-3A = BFSMW-301A	OBMW-13 = OBMW-1301
HS2MW-02 = HS2MW-201	OBMW-17 = OBMW-1701
LF1MW-5 = LF1MW-501	WSAMW-2 = WSAMW-201
OBMW-5 = OBMW-501	WSAMW-4 = WSAMW-401