DEPARTMENT OF THE AIR FORCE
AIR FORCE REAL PROPERTY AGENCY

MEMORANDUM FOR SEE DISTRIBUTION LIST July 1, 2003

FROM: AFRPA/DA-Griffiss
Environmental Section
153 Brooks Road
Rome, NY 13441-4105

SUBJECT: Final Year 2002 Expanded Site Investigation Report

1. Attached please find the Final Year 2002 Expanded Site Investigation Report, former Griffiss Air Force Base. Responses to USEPA and NYSDEC comments on the February 2003 draft document are also included.

2. If you have any questions, please contact Cathy Jerrard at (315) 330-2275.

MICHAEL F. MCDERMOTT
BRAC Environmental Coordinator

Attachment: As Noted

DISTRIBUTION:

USEPA Region II
Attn: Mr. Doug Pocze
290 Broadway, 18TH Floor
Federal Facilities Section
New York City, NY 10007-1866 (3 copies)

NYSDEC
Attn: Mr. Jonathan Greco/Mr. George Momberger
625 Broadway
Division of Hazardous Waste Remediation
Albany, NY 12233-7015 (3 copies)

NYSDOH, CEH-BEEI
Attn: Mr. Dan Geraghty
547 River St.
Troy, NY 12180 (1 copy)

Gannett-Fleming, Inc.
Attn: Mr. Edward Kashdan
1010 Adams Ave.
Audubon, PA 19403 (1 copy)

US Army Corps of Engineers
Attn: Mr. Phil Rosewicz
601 E. 12th Street
700 Federal Building
Kansas City, MO 64106-2896 (2 copies)

Responses to Comments on Draft 2002 Expanded Site Investigation (ESI) Report by Douglas Pocze, USEPA, Dated: April 22, 2003, and Jonathan Greco, NYSDEC, Dated: April 14, 2002.

USEPA GENERAL COMMENTS

USEPA Comment 1: Yes I know you continue to use the Region 3 RBCs which we do not agree with. However, it is my understanding that they have been updated since 2000. You should double check that the most recent numbers are being used.

Response to USEPA Comment 1: AFRPA agrees, the Region III RBCs updated in April 2002 were used in the 2002 ESI Report as stated in section 2.1.3. The typographical error in section 2.1 which indicated that the USEPA Region III 2000 RBCs were used has been corrected.

USEPA Comment 2: It is also my understanding that the RBCs for noncarcinogens are to be divided by 10 in order to account for potential additive noncarcingenic effects. Was this performed and if not why?

Response to USEPA Comment 2: The division by 10 to account for potential additive noncarcingenic effects was not performed. The division by 10 is recommended when a risk assessment is performed. In this case the Region III RBCs have only been used for final screening when compounds exceeded standards in the preliminary screening. As stated in section 2.1.3 "*The Region III RBCs are not intended for use as strict regulatory criteria, but rather to provide perspective on the significance of the concentrations of the compounds at specific sites in terms of the potential for adverse impact to human health and the environment*".

USEPA SPECIFIC COMMENTS

OTH-305

USEPA Comment 3: Section 4.1.3, Pg 4-3. Reference is made to the dye trace and the discharge point. We should indicate what we found at the headwaters of TMC.

Response to USEPA Comment 3: AFRPA agrees, the following text has been added to section 4.1.2, Physical Characteristics of the Site.

- The storm water sewer system into which the paint spray booth floor drain discharges drains a large portion of the industrial center of the base. This sewer system collects water from Hill Road to the west, north to the buildings along Hangar Road, and east to several buildings along Electronic Parkway before discharging south into TMC. Sediments within the TMC AOC have been extensively sampled and the contamination present in the creek was thoroughly characterized during the investigation performed for the TMC

Feasibility Study Addendum in May 2001. The *Final Three Mile Creek Feasibility Study Addendum Former Griffiss Air Force Base, Rome, New York* was submitted to the USEPA and NYSDEC in July 2002. The sediments at the headwaters of TMC were found to contain elevated levels of PCBs, pesticides, VOCs, PAHs, metals, and TRPH (E & E 2002d). Removal of the contaminated sediments within TMC is currently scheduled to begin during the winter of 2003/2004.

USEPA Comment 4: Pg 4-4, Section 4.1.4. This section references subsurface soil samples, (2nd pp), but I believe the samples referenced on Figure 4.1.2 are of the sediment within the drain. Pg 4-3, last PP, indicates that Figure 4.1.2 is of the floor drain pit. Please double check and clarify.

Response to USEPA Comment 4: AFRPA agrees that clarification is warranted. The title of Figure 4.1-2 has been changed for clarification. Both the Year 2000 and 2002 sample locations are shown on figures 4.1-1 and 4.1-2. In addition the Year 2000 grab water and sediment analytical data is provided on figure 4.1-2.

PCI 20

USEPA Comment 5: Section 4.2.3, Pg 4-16. Please include how the soil was removed. Has all the trash been removed?

Response to USEPA Comment 5: AFRPA agrees, the text in section 4.2.3 has been changed to indicate that approximately 20 cubic yards of debris and soil were removed from PCI 20 with a backhoe.

Bldg 211

USEPA Comment 6: Please identify the groundwater flow direction. Because Section 4.3.3 indicates that mercury was detected in the groundwater; however, the temporary well appears to be cross gradient and not down gradient.

Response to USEPA Comment 6: AFRPA agrees, an arrow indicating the groundwater flow direction has been added to Figure 4.3-1. The temporary well was not installed immediately downgradient of the drywell location due to the presence of underground utilities in the area, which prevented drilling at the location originally proposed in the work plan. This change was recorded on Field Adjustment Notification Form No. 1 dated January 27, 1998, which is included in Appendix E of the Draft 1998 ESI Report. In addition, record drawing 211-M-1/C-1/A-1 dated July 23, 1969 was found during the course of the 1998 ESI field investigation. This drawing clearly indicates that the Drywell 211 is located on the east side of Building 211, no more than five feet from the building. Therefore, the temporary well was installed at the suspected drywell location.

AOI 473

USEPA Comment 7: Pg 4-39, when do you intend to perform this work and submit a plan?

Response to USEPA Comment 7: The work plan will be written and submitted to the USEPA and NYSDEC for review shortly after completion of the Final 2002 ESI Report. Fieldwork will be conducted following approval of the work plan by the USEPA and NYSDEC, and upon receipt of funding.

NYSDEC Comments

NYSDEC Comment 1: Building 305: All the floor drains in the building should be decommissioned. The remainder of the recommendations appear adequate.

Response to NYSDEC Comment 1: AFRPA agrees. This recommendation was stated in the Building 305 Sand Trap Memorandum dated November 8, 2002.

NYSDEC Comment 2: AOI 473 (Room 10 at Building 112): please determine the discharge point of the storm water drainage system that received the sump water from building 112, room 10. If it is an as yet uninvestigated area, then we will need to sample at the discharge. Also, please verify the storm water system that receives the water is not really a series of interconnected drywells (i.e., open bottomed or closed bottom 'leaching' ring structures). If the storm water system is anything other than continuous piping to its discharge point, we will need to investigate further. Finally, I have no problem with your removing the wastewater in the sump along with the sludge, however, the materials will likely be a hazardous waste, so be careful with the handling and disposal. Upon removal of these items, the sump should be inspected for integrity and if it's at all cracked/porous/lacking integrity, etc., then we should sample beneath it.

Response to NYSDEC Comment 2: A recent site visit and review of the storm sewer drawings determined that until 1995 the sump discharged into the base storm sewer system, which flows south and discharges into Rainbow Creek. IT Corporation performed an Interim removal Action to cleanup Rainbow Creek in 1998. The removal action consisted of removing the top one-foot of sediment from a 1,900-foot length of Rainbow Creek. A complete description of the removal action is described in the *Final Closeout Report Interim Removal Action Coal Storage Yard Area, Former Griffiss AFB, Rome, New York, July 1998.* Upon removal of the sludge and water in the sump, the sump will be inspected for integrity. Collection of soil samples from beneath the sump will only be conducted if it appears that the integrity of the sump has been compromised. The sump will not be filled with concrete following the cleanup.

NYSDEC Comment 3: Bldg 211; Section 4.3.3 states that the detected groundwater concentration of .84 µG/l was below the NYSDEC standard, however, the NYSDEC standard is .7 µg/l for Hg. There may be need to look for the drywell more thoroughly.

Response to NYSDEC Comment 3: AFRPA agrees that the current NYSDEC standard is 0.7 µg/l for Hg and the current MCL is 2.0 µg/l, however, the detected groundwater concentration of .84 µg/l was below the NYSDEC standard of 2.0 µg/l for Hg at the time of the 1998 ESI investigation. In addition, the 0.84 µg/l was detected in the unfiltered groundwater sample, while the filtered sample was non-detect for mercury. This indicates that low levels of mercury are present in the soil at the drywell location (i.e. only present in a highly turbid groundwater sample collected from a temporary well), but are not present as dissolved mercury within the groundwater. The USEPA and NYSDEC have reviewed and commented on the work plans and reports associated with each of the corrective actions (Mercury cleanup as part of the Removal Action for Drywells and Miscellaneous Sites conducted in 2000 and residual mercury encapsulation as part of the 2002 ESI program conducted in 2002), which have been completed at Building 211.

AFRPA does not agree that there is a need to look for the drywell more thoroughly. A geophysical survey using ground-penetrating radar and drain tracing were performed during the 1998 ESI field investigation. Although neither method positively identified the drywell location, record drawing 211-M-1/C-1/A-1 dated July 23, 1969 was found during the course of the investigation. This drawing clearly indicates that the Drywell 211 is located on the east side of Building 211, no more than five feet from the building. Therefore, the temporary well was installed at the probable drywell location.

However, the 2002 ESI Report text will be changed to indicate that mercury was detected in the unfiltered groundwater sample at levels below the groundwater standards at that time, but was not detected in the filtered groundwater sample.

NYSDEC Comment 4: Bldg 211: I don't see a drawing of where the wipe samples were taken. Also, is the only remaining contamination within the vault itself?

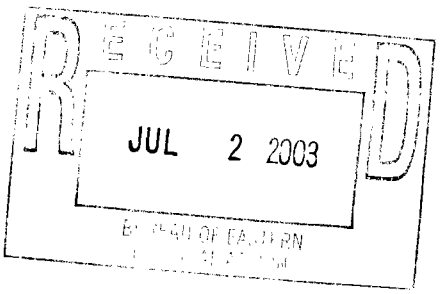
Response to NYSDEC Comment 4: A figure showing the Removal Action for Drywells and Miscellaneous Sites (2000) wipe sample locations has been added to appendix F and referenced in the report text. The 1998 ESI wipe sample locations are described in detail in section 4.3.3 of the 2002 ESI Report. Also, the only remaining contamination is on the pipe vault floor, encapsulated beneath a new concrete slab five inches thick.

001002_UK10_08_01-B1075
FINAL

Former Griffiss Air Force Base Year 2002 Expanded Site Investigation

Contract Number: DACW41-99-D-9005
Task Order No. 001
Work Authorization Directive 09

June 2003



Prepared for:

U.S. ARMY CORPS OF ENGINEERS
Kansas City District
601 East 12th Street
Kansas City, Missouri 64106

ecology and environment, inc.
International Specialists in the Environment
BUFFALO CORPORATE CENTER 368 Pleasant View Drive, Lancaster, New York 14086
Tel: 716/684-8060, Fax: 716/684-0844

Table of Contents

Table of Contents (cont.)

Section **Page**

Appendix

Table of Contents (cont.)

Section Page

List of Tables

List of Tables (cont.)

List of Figures

List of Abbreviations and Acronyms

AFB	Air Force Base
AFBCA	Air Force Base Conversion Agency
AMSL	above mean sea level
AOC	Area of Concern
AOI	Area of Interest
AST	above ground storage tank
ATSDR	Agency for Toxic Substance and Disease Registry
BGS	below ground surface
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COP	covered under other programs
CS	confirmatory sampling
DoD	Department of Defense
DRY	drywell
E & E	Ecology and Environment, Inc.
EBS	Environmental Baseline Survey
EOD	explosive ordnance disposal
ESI	expanded site investigation
FEIS	Final Environmental Impact Statement
FS	feasibility study
FSP	field sampling plan
GC/MS	gas chromatography/mass spectrometry
GIS	Geographical Information System
GLDC	Griffiss Local Development Corporation
GPR	ground-penetrating radar

List of Abbreviations and Acronyms (cont.)

HASP	health and safety plan
HI	hazard index
IDW	investigation-derived waste
IEUBK	Integrated Exposure/Uptake Biokinetic Model
IRA	Interim Removal Action
IRP	Installation Restoration Program
Law	Law Engineering and Environmental Services, Inc.
MCL	maximum contaminant level
µg/Kg	micrograms per kilogram
µg/L	micrograms per liter
mg/Kg	milligrams per kilogram
MS/MSD	matrix spike/matrix spike duplicate
NEADS	Northeast Air Defense Sector
NFA	no further action
NFS	no further study
NPL	National Priorities List
NS	near-surface soil sample
NYANG	New York Air National Guard
NYSBC	New York State Barge Canal
NYSDEC	New York State Department of Environmental Conservation
OHM	OHM Remediation Services Corp.
ORD	ordnance
OSWER	Office of Solid Waste and Emergency Response
OTH	Other Miscellaneous Environmental Factor Sites
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCI	Panamerican Consultants, Inc.
ppm	parts per million
QAPP	quality assurance project plan
QC	quality control
QCSR	quality control summary report

List of Abbreviations and Acronyms (cont.)

RA	risk assessment
RBC	risk-based concentration
RBC-si	risk-based concentration for soil ingestion
RBSL	risk-based screening level
RCRA	Resource, Conservation, and Recovery Act
ROD	Record of Decision
RWPCF	City of Rome Water Pollution Control Facility
RI	Remedial Investigation
RTC	response to comments
SVOC	semivolatile organic compound
SD	sludge sample
SP	wipe sample
SS	soil sample
STW	satellite waste accumulation point
SUNY	State University of New York
TAGM	Technical and Administrative Guidance Memorandum
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TIC	tentatively identified compound
TRPH	total recoverable petroleum hydrocarbons
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USEPA	United States Environmental Protection Agency
USDOH&HS	United States Department of Health and Human Services
UST	underground storage tank
VOC	volatile organic compound
WG	grab water sample
WSA	weapons storage area
WW	Wastewater-related Systems

Executive Summary

Ecology and Environment, Inc. (E & E), under contract to the United States Army Corps of Engineers (USACE), Kansas City District, Contract DACW41-99-D-9005, performed additional Expanded Site Investigation (Year 2002 ESI) activities at the former Griffiss Air Force Base (Griffiss AFB) in Rome, New York. These activities were performed at the Other Miscellaneous Environmental Factors (OTH) site OTH-305, Panamerican Consultants, Inc. (PSI) Site 20, Building 211 – Pipe Vault (OTH-211, DRY-211), and Area of Interest (AOI) 473 - Building 112 Room 10. The 2002 ESI activities were performed to (1) further define whether any environmental contaminants are present at these sites that may pose a threat to human health and/or the environment or (2) to remediate environmental contamination that had been previously detected.

In 1993, Griffiss AFB was designated for realignment under the federal Base Realignment and Closure (BRAC) Act and has been subsequently deactivated. A Final Environmental Impact Statement (FEIS) has been issued, which specifies plans for disposal and reuse of areas of the base (United States Air Force [USAF] 1995), and a Final Supplemental Environmental Impact Statement for Disposal and Reuse of the Airfield has been issued (USAF 1999).

The additional investigations are in response to a request by the New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA) to continue the process of de-listing sites or identifying where remedial action may be needed. The results of this Year 2002 ESI project will be used to determine which, if any, of the sites investigated should be added to the list of sites that require no further study (NFS); whether additional sampling should be performed; or, if significant contamination is found, whether remedial action is needed.

The following sites were included in this investigation:

- OTH-305, Building 305 - Paint Spray Booth;
- Panamerican Consultants, Inc. Site 20;
- Building 211 - Pipe Vault (DRY- 211 and OTH-211); and
- AOI 473 - Building 112 Room 10.

This Year 2002 Expanded Site Investigation (ESI) Report presents the investigation objectives and describes the methodologies that were used to investigate the sites. The 2002 ESI was performed in accordance with the *Field Sampling Plan (FSP), Health and Safety Plan (HASP),* and *Quality Assurance Project Plan (QAPP) Addendum for the Year 2002 ESI* (E & E 2002a) and the procedures (where applicable) outlined in the February 2000 *FSP, HASP, and QAPP Addendum for the ESI AOI/OTH/PCI/EOD Sites Program* (E & E 2000) and the October 1997 *Field Sampling Plan, Health and Safety Plan, and Quality Assurance Project Plan for the Expanded Site Investigation Program at Griffiss Air Force Base, Rome, New York* (E & E 1997a).

The Year 2002 ESI program consisted of field and non-field activities. Field activities included reconnaissance where necessary; near-surface soil sample (NS) collection; wipe sample (SP) collection; soil sample (SS) collection; sludge sample (SD) collection; grab water (WG) sampling; investigation-derived waste (IDW) drum sampling; removal of contaminated water/sludge from a floor drain sump; removal of water from a pipe vault; and encapsulation of residual contamination on a pipe vault floor with concrete. Non-field activities consisting of an in-house review of historical information, including drawings and previous sampling data, were performed prior to this investigation.

The analytical results from the Year 2002 ESI were assessed with respect to pertinent New York State and federal regulatory criteria. Results of soil analyses were primarily screened against NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 and USEPA Region III risk-based concentrations (RBCs). Results of groundwater analyses were screened against NYSDEC Class GA standards and guidance values, federal maximum contaminant levels (MCLs), and USEPA RBCs for tap water. The results for each site were then considered with regard to future land use. The basis for conclusions and recommendations for each Year 2002 ESI site includes consideration

of current site conditions and places particular emphasis on the planned reuse strategy for the former Griffiss AFB as outlined in the FEIS (USAF 1995) and Supplemental FEIS (USAF 1999). No Further Study (NFS) is recommended for PCI Site 20 and Building 211 - Pipe Vault, for OTH-305, filling the floor drain pit with concrete is recommended, and for AOI 473, decontamination of the sump pump pit is recommended. A summary of these recommendations and actions appears in Table ES-1.

The actions at PCI Site 20, Building 211, OTH-305, and AOI 473 will be documented in a post-action group Record of Decision (ROD). Any institutional controls or land use restrictions associated with the sites will be documented in the ROD.

Table ES-1 Summary of Scope of Work and Recommendations for the Year 2002 ESI Former Griffiss Air Force Base, Rome, New York

AOI Number	EBS* Designation: Study Area	EBS* Designation: Item Number	Site Description	Year 2002 ESI Scope of Work Performed	Recommendation
OTH-305	20	OTH-305, STW-305-02	Building 305 Paint Spray Booth - floor drain	Historic Document review. Cleaned-out floor drain pit and plugged drain line with concrete. Collection/analysis of: three subsurface soil samples from beneath the floor drain pit.	Further Action: Year 2002 ESI sample results indicate no significant contamination is present beneath the floor drain pit. Recommend filling the floor drain pit with concrete to prevent accumulation of water in the future. The actions at OTH-305 will be documented in a post-action group ROD.
PCI Site 20	8	PCI Site 20	Panamerican Consultants, Inc. Site 20 - surface debris area	Historic document review. Collection/analysis of: three near-surface soil samples.	NFS: Year 2000 and 2002 ESI sample results indicate elevated levels of lead in only one out of five near-surface soils sample locations on site. The limited extent of lead contamination on site is not a serious concern. The actions at PCI Site 20 will be documented in a post-action group ROD.
Building 211 Pipe Vault	15	OTH-211, DRY-211	Building 211 Pipe Vault - mercury spill	Historic document review. Collection/analysis of: one grab water sample. Removal of standing water from the pipe vault. Installation of a 5-inch-thick concrete slab on top of the existing pipe vault floor.	NFA: Year 2002 ESI sample results indicated very low levels of mercury remained in the pipe vault. The water was removed from the pipe vault and the floor was encapsulated with a 5-inch-thick concrete slab. The limited presence of mercury beneath the new concrete slab does not pose a concern. The actions at the Building 211-Pipe Vault will be documented in a post-action group ROD.

Table ES-1 Summary of Scope of Work and Recommendations for the Year 2002 ESI Former Griffiss Air Force Base, Rome, New York

AOI Number	EBS[a] Designation: Study Area	EBS[a] Designation: Item Number	Site Description	Year 2002 ESI Scope of Work Performed	Recommendation
AOI 473	16	AOI 473	Building 112-Room 10	Historic document review. Collection/analysis of: 10 swipe samples and one sludge sample.	Further Action: Year 2002 ESI sample results indicate levels of 16 metals and four PAHs above screening criteria, including 12,200 mg/kg of lead, are present within the sump pump pit. Recommend decontamination of the sump pump pit. The actions at AOI 473 will be documented in a post-action group ROD.

[a] *Basewide Environmental Baseline Survey* (Tetra Tech 1994).

Key:

AOI = Area of Interest.
DRY = Drywell.
EBS = Environmental Baseline Survey.
ESI = Expanded site investigation.
OTH = Other miscellaneous environmental factors.
PCI = Panamerican Consultants, Inc.
STW = Satellite waste accumulation point.

1 Introduction

1.1 Purpose and Goals

Griffiss Air Force Base (AFB) is a former United States Air Force (USAF) Air Combat Command installation covering 3,539 acres in the Mohawk River Valley in Rome, New York (see Figure 1-1). In 1993, Griffiss AFB was designated for realignment under the federal Base Realignment and Closure (BRAC) Act and was subsequently deactivated.

Under contract to the United States Army Corps of Engineers (USACE), Kansas City District, Ecology and Environment, Inc. (E & E) conducted the Year 2002 Expanded Site Investigation (Year 2002 ESI) at Other Miscellaneous Environmental Factors Site (OTH) OTH-305, Panamerican Consultants, Inc. (PCI) Site 20, the Building 211 – Pipe Vault (OTH-211, DRY-211), and Area of Interest (AOI) 473 - Building 112 Room 10. The Year 2002 ESI activities were performed to (1) further define whether any environmental contaminants are present at these sites that may pose a threat to human health and/or the environment or (2) to remediate environmental contamination that had been previously detected. The Year 2002 ESI performed at the above-mentioned four sites consisted of additional site investigation or remedial actions so that recommendations might be made regarding their future status. The results of this Year 2002 ESI have been used to determine which of these sites should be added to the current list of sites that require no further study (NFS) and which sites require remedial action.

In the evaluation of the Year 2002 ESI results, emphasis was placed on providing an assessment that considers human health and any potential impacts to the environment. The recommendations made are consistent with the plans for base redevelopment in the

Master Reuse Strategy for Griffiss AFB developed for the Griffiss Local Development Corporation (GLDC) (1995), the *Final Environmental Impact Statement (FEIS) for the Disposal and Reuse of Griffiss Air Force Base* (USAF 1995), and the *Final Supplemental Environmental Impact Statement for the Disposal and Reuse of Griffiss Air Force Base* (USAF 1999).

Based on a review of previous investigations and negotiations with NYSDEC and USEPA, four sites were included in the Year 2002 ESI. The locations of the sites included in the Year 2002 ESI program are shown in Figure 1-2.

Year 2002 ESIs were performed at the following four sites:

- **New AOI**
  - AOI 473 –Building 112 Room 10, this site was designated as an AOI after a former Griffiss AFB employee reported that an oil tank frequently overflowed and covered the floor with oil at this location;

- **Other Miscellaneous Environmental Factors Sites**
  - OTH-305 – Building 305-Paint Spray Booth;
  - OTH-211 – Mercury Spill;

- **Panamerican Consultants, Inc. Site**
  - PCI Site 20.

The Year 2002 ESI program consisted of field and non-field activities. Field activities included reconnaissance, where necessary; near-surface soil sample (NS) collection; wipe sample (SP) collection; sludge sample (SD) collection; soil (SS) sampling; grab water (WG) sampling; investigation-derived waste (IDW) drum sampling; removal of contaminated water/sludge from a floor drain sump; removal of water from a pipe vault; and encapsulation of residual contamination on a pipe vault floor with concrete. Non-field activities consisting of an in-house review of historical information, including drawings and previous sampling data, were performed prior to the field investigation.

The 2002 ESI was performed in accordance with the procedures (where applicable) outlined in the February 2000 *Field Sampling Plan, Health and Safety Plan (HASP),* and *Quality Assurance Project Plan (QAPP) Addendum for the ESI AOI/OTH/PCI/EOD Sites Program* (E & E 2000) and the October 1997 *Field Sampling Plan, Health and Safety Plan, and Quality Assurance Project Plan for the Expanded Site Investigation*

Program at Griffiss Air Force Base, Rome, New York (E & E 1997a). Field methods and results are summarized in Sections 3 and 4 of this report.

At each site, an assessment of the analytical results was made with respect to regulatory guidance values, and conclusions were drawn regarding current site conditions. Recommendations for NFS or further remedial action were then made based on these environmental conditions and the planned re-use of the site and surrounding areas.

1.2 Site Description

The former Griffiss AFB is located in Rome, New York (see Figure 1-1). The former base is bordered by the Mohawk River along part of its western boundary and by the New York State Barge Canal (NYSBC) along its southern boundary. It consists of 3,539 acres, of which 3,278 acres were fee-purchased by the United States government between 1941 and 1978, 257 acres (currently occupied by the former base golf course) were donated by Oneida County in 1942 for initial base construction, and 4 acres (along the NYSBC, south of the railroad tracks) are leased from New York State. In addition, the former base has 345 acres of clearance easements at the ends of its runway, 45 acres of rights-of-way, and 5 acres of restricted easements adjacent to the former weapons storage area (WSA). Most of the former base is designated by the Oneida County Tax Office as Tract 243.000-0001-001 (Tetra Tech 1994).

The former Griffiss AFB was designated for realignment under the BRAC Acts of 1993 and 1995, resulting in the deactivation of the 416th Bombardment Wing in September 1995. Some property has been retained by the government for organizations such as Rome Laboratory, Northeast Air Defense Sector (NEADS), and the Defense Finance and Accounting Services, which will continue to operate at their current locations. The New York Air National Guard (NYANG) operated the runway for the 10th Mountain Division deployments until October, 1998, when they were relocated to Fort Drum.

1.3 Previous Studies

In 1981, the Department of Defense (DoD) established the Installation Restoration Program (IRP) to evaluate the environmental impact of operations on its bases. Since that time, Griffiss AFB has been studied by several contractors to determine the extent of site contamination and to prioritize and perform cleanup actions.

USAF and Engineering-Science, Inc., conducted a Phase I records search in 1981. Nineteen sites were studied for potential contamination, and 15 were identified as AOCs. A Phase II study was performed by Roy F. Weston, Inc., in two stages, one in 1982 and one in 1985. During this study, 14 groundwater monitoring wells were installed, four surface water sampling stations were established, and ground-penetrating radar and resistivity surveys were conducted.

Hydro Environmental conducted a study of four AOCs in 1986, and Versar, Inc., reviewed the data of 15 AOCs in 1987 to determine whether sufficient data were available to conduct a feasibility study (FS) for these sites. It was determined that the data generated were insufficient for evaluation. In the summer of 1987, Griffiss AFB was put on the National Priorities List (NPL), federal Superfund program.

In 1995, the Agency for Toxic Substance and Disease Registry (ATSDR) studied five AOCs to determine whether a health assessment could be performed, but again the data were insufficient. In 1988, UNC Geotech was contracted to begin the process of determining which IRP sites could be designated for no further action (NFA) and which should be maintained on an active list of AOCs. Law Engineering and Environmental Services, Inc. (Law), together with the USAF, USACE, and regulatory agency personnel, expanded this process in 1991 and studied 54 sites, determining that 31 of these sites were AOCs. A work plan, field sampling plan (FSP), QAPP, and several technical memoranda were produced by Law to study these 31 AOCs in a Remedial Investigation (RI). Law performed RIs and risk assessments (RAs) at the 31 AOCs in August 1995. The draft final RI report was issued in December 1996.

Quarterly groundwater sampling began in the fall of 1992 at pre-RI well locations across the base.

Law conducted a second basewide study to identify AOIs. This study resulted in a document listing 466 AOIs (June 1994). Following a review of the final AOI report, the Environmental Baseline Survey (EBS), and other historical documents, CS was performed at 30 of these AOIs to determine whether contamination was present, and if present, whether it posed a potential threat to public health or the environment. E & E investigated 15 Group I AOIs, seven Group II AOIs, and 10 Group III AOIs from this list. The Group I AOI fieldwork was performed June through October 1995, and the final report was submitted in November 1996 (E & E 1996). The Group II and Group III AOI field-

work was performed in April and August 1996, respectively. The final Group II report was submitted in June 1997 and the final Group III report was submitted in November 1997 (E & E 1997b). The original ESI fieldwork was performed October 1997 through January 1998. The draft ESI report was submitted in July 1998. A response to comments (RTC) from NYSDEC and USEPA and report addendum were submitted in December 2002 to finalize the 1998 ESI report.

A basewide EBS for Griffiss AFB, produced for the USAF by Tetra Tech in 1994, was updated in May 1996, March 1997, and December 1997 (Tetra Tech 1994). The EBS, which summarized much of the site work to date, was required for the realignment of the base, which took place on September 30, 1995. On June 19, 1995, an EBS/AOI summary table was also generated (Tetra Tech 1995).

E & E completed development of a geographical information system (GIS) prototype during 1995 to assist base personnel in the transfer of surplus real estate and to serve as a database for the accumulation and management of site-specific information (e.g., analytical data, EBS information) by base personnel. In the summer of 1997, E & E performed supplemental field investigations at 21 of the 31 AOCs studied under the RI program.

The Year 2000 ESI fieldwork was performed in March through April 2000. The Final Year 2000 ESI report was submitted in November 2000.

1.4 Environmental Setting

1.4.1 Local Topography and Geology

The former Griffiss AFB lies within the Mohawk Valley between the Appalachian plateau and the Adirondack Mountains (see Figure 1-1). 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 NYSBC and the Mohawk River Valley south of the former base lie below 430 feet AMSL.

Unconsolidated sediments at the former Griffiss AFB consist primarily of glacial till with significant quantities of silt and gravel and minor quantities of clay and sand (Tetra Tech 1994). The thickness of these sediments ranges from 0 to 12 feet in the northern portion of the former base to a maximum 130 feet in one area of the south por-

tion. The average thickness of the unconsolidated sediments, however, is 25 to 50 feet in the central portion, and 100 to 130 feet in the south and southwest portions of the former base.

Glacial soils within the boundaries of the former Griffiss AFB were deposited during the Wisconsinian glacial stage of the Pleistocene Epoch. The glacial deposits are highly weathered rock and soil left behind by the retreating ice mass. Multiple advancements and withdrawals of the glacial ice during the Wisconsinian glacial period created a complex of soil types in and around the former Griffiss AFB referred to as glacial drift, or till. Glacial drift can include a range of grain sizes from rock flour to large boulders. The grain sizes of the overburden at the former Griffiss AFB range from fine silt to small boulders (E & E 1995). Lacustrine soils within the glacial drift observed at the former Griffiss AFB are derived from the proglacial lakes that formed on the perimeter of the retreating ice mass. Soils of the former Griffiss AFB are derived secondarily from fluvial deposits from the Mohawk River, Six Mile Creek, and other smaller streams (Tetra Tech 1994).

Underlying the surficial deposits at the former Griffiss AFB is the Utica shale, an Ordovician Period black shale deposited in a deep water basin environment. The Utica Shale overlies the Trenton group, a series of alternating thin limestone and shale beds, and underlies the Whetstone and Frankfort formations of the Lorraine group (State University of New York [SUNY] 1991). The Utica shale has a thickness of up to 900 feet.

The depth from the ground surface to the top of the bedrock ranges from 0 feet on the north side of the former base to as much as 150 feet on the south side. Typical depths to bedrock on the base range from 30 to 50 feet below ground surface (BGS). Areas with the shallowest depth to bedrock, 15 feet or less, are found on the north side of Six Mile Creek (E & E 1995). Bedrock beneath the site generally dips to the southwest and south. The elevation of the bedrock surface changes from 500 feet AMSL northeast of the runway to 350 feet AMSL south of the Skyline Housing Area (Law 1994a).

1.4.2 Local Hydrogeology

The aquifer of interest in this study is the shallow water table aquifer within the unconsolidated near-surface sediments. The depth to groundwater in the water table aquifer ranges from the ground surface to about 60 feet BGS (Tetra Tech 1994). Most

groundwater in the base area is encountered within 20 feet BGS. The shallow groundwater generally flows across the base from the slight topographic high in the northeast to the Mohawk River and the NYSBC located southwest and southeast of the former base, respectively. Several small creeks act as discharge areas for shallow groundwater, as well as drainage culverts and sewers that intercept surface water runoff.

This conclusion is supported by an on-base stream mechanics study performed during the RI. This study determined that both Three Mile and Six Mile creeks are gaining streams within the base (Law 1996).

1.5 Report Organization

Section 2 of this report discusses the screening methods used to compare the analytical results for each site with regulatory criteria. Section 3 presents the field methods that were used to collect data. Section 4 presents individual reports for each site studied under this program. Each site-specific report includes background information, details regarding previous investigations (if performed), and a description of the physical and chemical characteristics of the site. Also included is a description of the respective field investigation, a summary of Year 2002 ESI sampling results, conclusions, and recommendations. References are provided in Section 5.

The remainder of the report consists of appendices. Complete analytical data summaries by site are provided in Appendix A; calculation of risk-based screening levels for surface wipe samples in Appendix B; a letter from the City of Rome Water Pollution Control Facility permitting discharge of water to the sewer in Appendix C; daily activity summary reports are provided in Appendix D; and investigation derived waste (IDW) inventory is presented in Appendix E.

A summary of quality control (QC) concerns, including sample collection, handling, and analytical procedures; any deviations from E & E's FSP; presentation of analytical results; and discussion of the results of data quality evaluations are presented under separate cover in the October 2002 Quality Control Summary Report (QCSR) for the Year 2002 ESI (E & E 2002b).

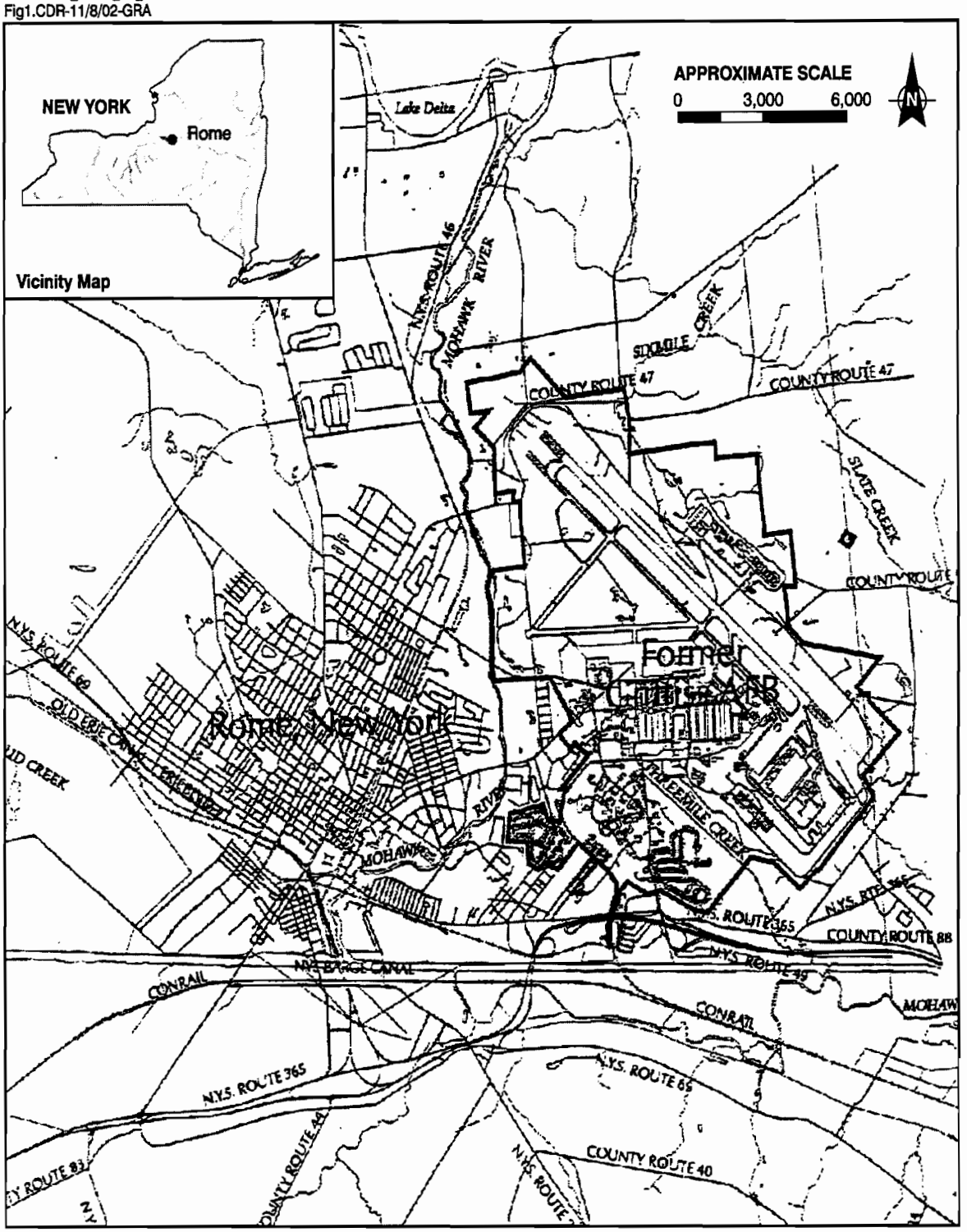
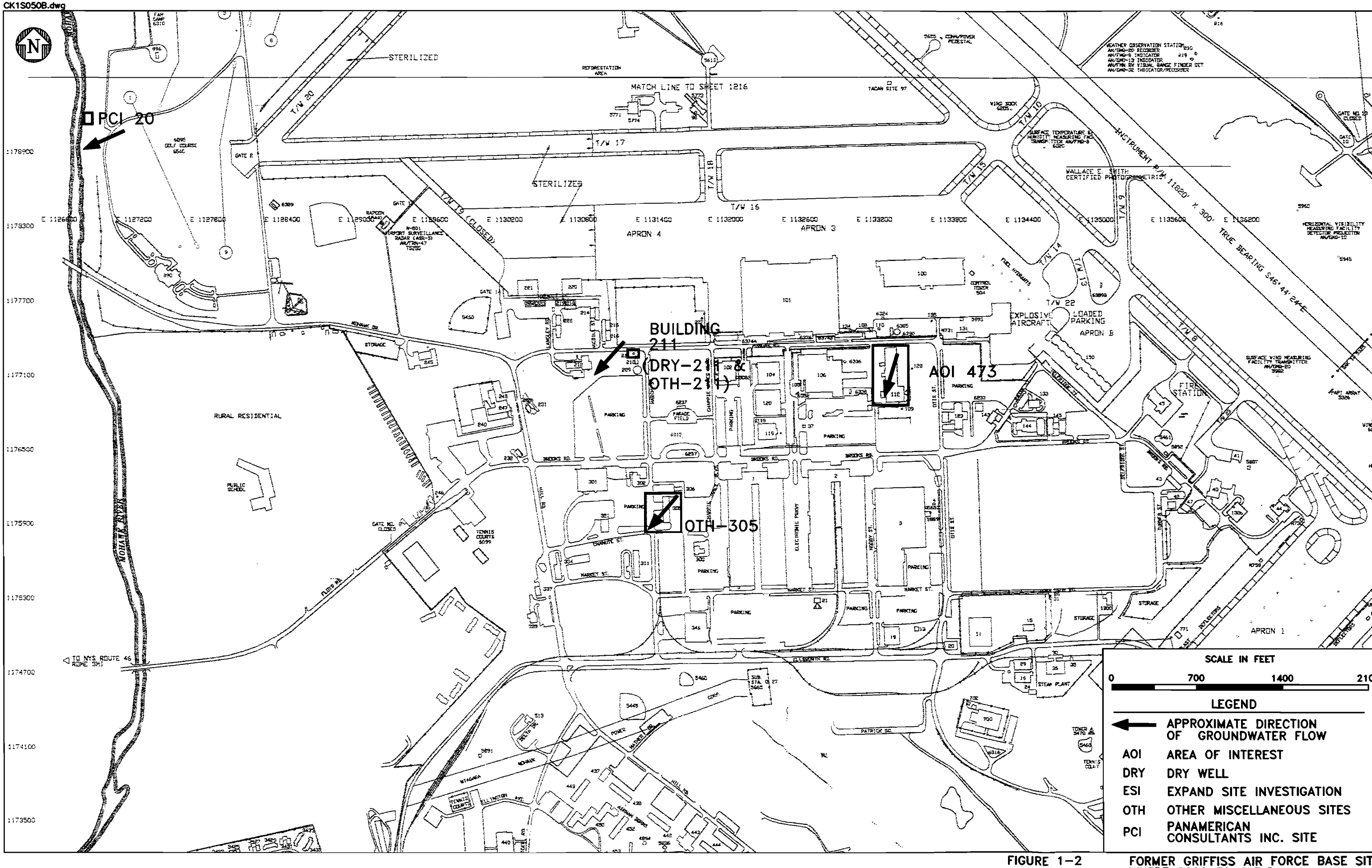


Figure 1-1 Former Griffiss AFB – Site Location Map

CK1S050B.dwg



SCALE IN FEET

0 700 1400 21

LEGEND

←	APPROXIMATE DIRECTION OF GROUNDWATER FLOW
AOI	AREA OF INTEREST
DRY	DRY WELL
ESI	EXPAND SITE INVESTIGATION
OTH	OTHER MISCELLANEOUS SITES
PCI	PANAMERICAN CONSULTANTS INC. SITE

FIGURE 1-2

FORMER GRIFFISS AIR FORCE BASE SIT
WHERE 2002 ESI FIELD
INVESTIGATIONS WERE PERFORMED

Buff [illegible]d: 11/7/02 mcn

2 Screening Methodology

The screening methods used to compare the analytical results for each site with regulatory criteria are described below.

2.1 Screening Process

The screening process used to review the analytical data of the Year 2002 ESI involved the comparison of all analytical results with pertinent state and federal regulatory guidance values (see Tables 2-1 and 2-2). An additional evaluation was performed by comparing the results to USEPA Region III 2002 risk-based concentrations (RBCs).

2.1.1 Screening Against NYSDEC Criteria

The guidances considered for the screening of the analytical results against NYSDEC criteria are discussed below.

Soil/Sludge

Organics. NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 (NYSDEC 1994) values were used to screen organic results for soil and sludge samples (see Table 2-1). NYSDEC TAGM 4046 guidance provides compound-specific values for the majority of compounds screened in this report. However, NYSDEC TAGM 4046 specifies values of 1 milligram per kilogram (mg/Kg) of total polychlorinated biphenyls (PCBs) (the sum of all congeners detected) in surface soils and 10 mg/Kg in subsurface soils.

Inorganics. NYSDEC TAGM 4046 and base-specific background values were used to screen inorganic results of soil/sludge sample analyses (see Table 2-1).

2.1.2 Screening Against Federal Criteria

Federal guidance for lead in soil was used for comparison in this screening process.

Soil/Sludge

Organics. NYSDEC TAGM 4046 guidance specifies values of 1 mg/Kg of total PCBs (the sum of all congeners detected) in surface soils and 10 mg/Kg in subsurface soils. Under 40 Code of Federal Regulations (CFR) Part 761.125(c)(4), soils containing PCBs in areas with unrestricted access are regulated in the same manner (USEPA 2002a). In accordance with NYSDEC TAGM 4046 guidance, surface is defined as 0 to 10 inches BGS, and subsurface is defined as greater than 10 inches BGS.

Inorganics. USEPA Office of Solid Waste and Emergency Response (OSWER) Directive No. 9355.4-12, July 1994, establishes a health-based soil screening value of 400 mg/Kg for lead in soils in a residential area. This soil screening value, which was derived using USEPA's Integrated Exposure/Uptake Biokinetic (IEUBK) Model, is considered to be protective of young children, the subpopulation most sensitive to the effects of lead. It is recommended as a screening level for residential scenarios at Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Resource, Conservation, and Recovery Act (RCRA) Corrective Action Sites to determine whether further study or corrective action is required. According to the directive, residential areas with soil lead levels below 400 parts per million (ppm) generally require no further action.

2.1.3 Screening Against Risk-based Screening Criteria

Only compounds that exceeded standards in the preliminary screening were then subjected to a final screening by comparing respective levels with USEPA Region III

RBCs for soil ingestion (RBC-si) in a commercial/industrial exposure scenario for soils (USEPA 2002b). The Region III RBCs are not intended for use as strict regulatory criteria, but rather to provide perspective on the significance of the concentrations of the compounds at specific sites in terms of the potential for adverse impact to human health and the environment. The comparisons of the sample results and assessment criteria are tabulated in the analytical results summary tables in each of the AOI reports in Section 4.

The RBCs are based on either a target cancer risk level of 10^{-6} or a non-cancer hazard index (HI) of 1.0. The target cancer risk is at the low end of the 10^{-6} to 10^{-4} risk range regarded as acceptable by USEPA, whereas the target HI is a benchmark below which other adverse health effects would not be expected. With RBCs, the potential cumulative risks from exposure to multiple chemicals are not considered, and it is possible that combined risks from several chemicals present at levels just below their individual RBCs could exceed the target risk level. These combined risks, however, would not greatly exceed the target risk level unless there were many such chemicals.

Additionally, screening criteria for wipe samples were developed in a manner similar to a method that was used by USEPA to develop the TSCA screening criteria for PCBs, based on potential cancer risk from dermal exposure, which was presented in a 1986 memorandum (see Table 2-2). The calculations for risk-based screening levels (RBSLs) used for the wipe samples are presented in Appendix B .

2.1.4 Tentatively Identified Compounds

Tentatively identified compounds (TICs) are chromatographic peaks in gas chromatography/mass spectrometry (GC/MS) analyses for volatile and semivolatile organics that are not target compounds, system monitoring compounds, or internal standards. TICs were qualitatively identified through a mass spectral library search, and the identifications were estimated by a qualified data reviewer. No standard response factor is used in the quantitation of TIC compounds; therefore, all TIC concentrations are estimated values. This process is used to identify and estimate concentrations of any potential unknown contaminants at each AOI. A summary of TICs is provided in Section 4 for OTH-305 and AOI 473.

The presence of known TICs was evaluated by comparing estimated concentrations with specific screening criteria if any such criteria were available. In addition, the esti-

mated TIC concentrations in soil were assessed by comparison to NYSDEC guidance values for volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs) in soil. According to TAGM No. 4046, the concentrations of total VOCs in soil is not to exceed 10 mg/kg, total SVOC levels are not to exceed 500 mg/kg, and an individual SVOC concentration is not to exceed 50 mg/kg (NYSDEC 1994). There are significant uncertainties in identification and quantitation of TICs as well as a lack of specific toxicological information for many TIC compounds. However, many of the TICs identified at Griffiss appear to be petroleum-related compounds, perhaps from degraded oil or grease, which are expected to have relatively low toxicity. Based on this expectation and the concentrations detected in groundwater to date, it is unlikely that TICs at Griffiss will pose a significant threat to public health.

It should be noted that there are no preliminary or final screening criteria available for total recoverable petroleum hydrocarbon (TRPH) in soil. In this absence of such criteria, the other organic results for samples with TRPH detected were reviewed to determine if the individual components of the TRPH could be identified. Concentrations of such organic compounds, where identified, were then compared to respective screening criteria.

2.1.5 Conclusions

Conclusions were made regarding the evaluation of the Year 2002 ESI results with respect to established screening standards, site conditions, and the planned future use of the site. Based on the screening results and other scientific considerations made on a site-by-site basis, each of the four sites was recommended for NFS or for additional work. The planned future use of the sites was determined using the *Final Environmental Impact Statement (FEIS) for Disposal and Reuse of Griffiss Air Force Base* (USAF 1995), the *Griffiss Business and Technology Park Industrial Site Development Project Engineer's Report* (Bergmann Associates 1996), and the *Master Reuse Strategy for Griffiss Air Force Base* (GLDC 1995).

Table 2-1
Soil/Sludge Screening Criteria for the Year 2002 ESI,
Former Griffiss Air Force Base, Rome, New York

Analyte	NYSDEC Soil Cleanup Objective TAGM 4046 [a]	USEPA Region III RBCs for Industrial Soils [b]	Background [c]
Semivolatiles - SW 8270C (µg/Kg)			
Acenaphthene	50,000 [k]	120,000,000	-
Anthracene	50,000 [k]	610,000,000	-
Benz(a)anthracene	224	7,800	-
Benzo(a)pyrene	61 or MDL	780	-
Benzo(b)fluoranthene	1,100	7,800	-
Benzo(g,h,i)perylene	50,000	-	-
Benzo(k)fluoranthene	1,100	78,000	-
Bis(2-ethylhexyl)phthalate	50,000 [k]	410,000	-
Chrysene	400	780,000	-
Dibenzofuran	6,200	8,200,000	-
Fluoranthene	50,000 [k]	82,000,000	-
Fluorene	50,000 [k]	82,000,000	-
Indeno(1,2,3-cd)pyrene	3,200	7,800	-
Naphthalene	13,000	41,000,000	-
Phenanthrene	50,000 [k]	-	-
Pyrene	50,000 [k]	61,000,000	-
Volatiles - SW 8260B (µg/Kg)			
Acetone	200	200,000,000	-
Methylene chloride	100	760,000	-
Xylenes, Total	1,200	4,100,000,000	-
Methoxychlor	10,000 [i]	10,000,000	-
PCBs - SW 8081A (mg/Kg)			
Aroclor 1254	1 or 10 [j]	2.9	-
Aroclor 1260	1 or 10 [j]	2.9	-
Pesticides - SW 8081A (µg/Kg)			
4,4´-DDD	2,900	24,000	-
4,4´-DDE	2,100	17,000	-
4,4´-DDT	2,100	17,000	-
beta-BHC	200	3,200	-
delta-BHC	300	-	-
Endosulfan II	900	12,000,000	-
Heptachlor	100	1,300	-

Key at the end of Table.

Table 2-1
Soil/Sludge Screening Criteria for the Year 2002 ESI,
Former Griffiss Air Force Base, Rome, New York

Analyte	NYSDEC Soil Cleanup Objective TAGM 4046 [a]	USEPA Region III RBCs for Industrial Soils [b]	Background [c]
TAL Metals - SW6010B/7471A (mg/Kg)			
Aluminum	SB	2,000,000	18,306
Antimony	SB	820	3.4
Arsenic	7.5 or SB	3.8 [d]	4.9
Barium	300 or SB	140,000	71
Beryllium	0.16 or SB	4,100	0.65
Cadmium	1 or SB	1,000	1.1
Calcium	SB	-	23,821
Chromium	10 or SB	6,100 [e]	22.6
Cobalt	30 or SB	120,000	19
Copper	25 or SB	82,000	43
Iron	2,000 or SB	610,000	47,350
Lead	200 [f]	400 [g]	36
Magnesium	SB	-	7,175
Manganese	SB	41,000	2,106
Mercury	0.1	-	-
Nickel	13 or SB	41,000	46
Potassium	SB	-	1,993
Selenium	2 or SB	10,000	0.34
Silver	SB	10,000	1.1
Sodium	SB	-	259
Thallium	SB	140	0.45
Vanadium	150 or SB	14,000	36
Zinc	20 or SB	610,000	120
TRPH - 418.1M (mg/Kg)			
Petroleum Hydrocarbons	-	-	-

[a] NYSDEC (1994), Technical and Administrative Guidance Memorandum #4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1994.

[b] USEPA Region III Risk-based concentration for industrial soil, April 2002.

[c] Twice the arithmetic mean of eight sample results from off-base monitoring well borings OBMW-21 and OBMW-29 (Draft RI, Law, 1995)

[d] RBC for arsenic as carcinogen.

[e] RBC for hexavalent chromium.

[f] Lead background levels reported in TAGM 4046 (4-61 mg/kg [rural] and 200 - 500 mg/kg [suburban and near highways]).

[g] Screening criterion recommended for lead in soil in a residential setting (EPA OSWER # 9355.4, 12 July, 1994).

[h] RBC for endrin.

[i] Per TAGM 4046, total pesticides less than 10,000 µg/Kg.

[j] Per TAGM 4046, the PCB soil cleanup objective is 1 mg/Kg for surface soils and 10 mg/Kg for subsurface soils, and applies to the sum of all PCB congeners.

[k] Per TAGM 4046, total semivolatiles less than 500,000 µg/Kg.

Key:

ESI = Expanded Site Investigation.
mg/Kg = Milligrams per kilogram.
MDL = Method detection limit.
NYSDEC = New York State Department of Environmental Conservation.
RBC = Risk-based Concentration.
SB = Site background.
TAL = Tarh=get Analyte List.
TRPH = Total recoverable petroleum hydrocarbons.
USEPA = United States Environmental Protection Agency.
µg/Kg = Micrograms per kilogram.
- = No criteria available.

Key at the end of Table.

Table 2-2
Wipe Samples Risk-based Screening Levels for the Year 2002 ESI,
Former Griffiss Air Force Base, Rome, New York

Parameter	Wipe RBSL (mg/100cm2)
PCBs by Method 8082 (µg/wipe)	
Aroclor 1242	6
Aroclor 1254	6
Aroclor 1260	6
Semivolatiles (µg/wipe)	
Benzyl alcohol	500,000
Bis(2-ethylhexyl)phthalate	600
Metals/Mercury by Method 6010B/7471A (µg/wipe)	
Aluminum	2,000,000,000
Antimony	30,000
Arsenic	40
Barium	20,000,000
Beryllium	70,000,000
Cadmium	300,000
Calcium	--
Chromium	20,000,000,000
Cobalt	100,000
Copper	60,000
Iron	50,000,000
Lead	70,000
Magnesium	--
Manganese	20,000,000
Mercury	1,000,000
Nickel	20,000,000
Potassium	--
Silver	5,000,000
Sodium	--
Thallium	100
Vanadium	20,000,000
Zinc	500,000
TRPH by Method 418.1M (mg/wipe)	
Petroleum Hydrocarbons	--

Key:

AOI = Area of Interest.
ESI = Expanded Site Investigation.
cm^2 = Square centimeters.
µg = Micrograms.
mg = Milligrams.
PCBs = Polychlorinated biphenyls.
RBSL = Risk-based screening level.
TRPH = Total recoverable petroleum hydro
-- = Not available.

Key at the end of Table.

3 Field Methodology

3.1 Introduction

All field activities for the Year 2002 ESI program were performed according to applicable sections of the October 1997 ESI FSP, HASP, and QAPP (E & E 1997a), and the modifications and additions described in the FSP, HASP, and QAPP Addendum for the Expanded Site Investigation at the AOI/OTH/PCI/EOD Sites (E & E 2000) and the *FSP, HASP, and QAPP for the Year 2002 ESI* (E & E 2002a).

The field investigation consisted of the following activities: collection of NS, SD, SS, WG, and SP sampling; a floor drain remediation; a pipe vault floor remediation; and waste sampling daily activity summary reports were prepared by E & E and submitted to USACE and AFBCA (see Appendix D). All field activities were carried out according to the approved Quality Control Plan (E & E 1999).

3.2 Near-surface Soil and Sludge Sampling

Three near-surface soil samples (including one duplicate sample) were collected from the 0- to 2-inch depth interval at PCI Site 20, and one sludge sample was collected from the sump at AOI 473. In addition to these samples, a duplicate, split, and matrix spike/matrix spike duplicate (MS/MSD) were also collected. All near surface soil and sludge samples were collected by directly filling the appropriate sample containers using dedicated, precleaned, stainless-steel spoons or trowels. Soil collection was performed according to the procedures established in the ESI FSP (E & E 1997a), the FSP Adden-

dum (E & E 2000), and the modifications outlined in the Year 2002 ESI FSP (E & E 2002a).

All sampling equipment was decontaminated according to the procedures described in the ESI FSP (E & E 1997a) and the FSP Addendum (E & E 2000). The soil and sludge samples were homogenized in a clean stainless-steel bowl and placed in appropriate containers. All samples were immediately placed in a cooler with ice and handled as specified in Section 4 of the ESI FSP (E & E 1997a), the FSP Addendum (E & E 2000), and the Year 2002 ESI FSP (E & E 2002a).

3.3 Grab Water Sampling Methods

Grab water samples were collected from containerized waste water at OTH-305 and from the pipe vault at Building 211 according to the surface water sampling methodology described in the ESI FSP (E & E 1997a) and the FSP Addendum (E & E 2000). Dedicated sampling equipment was used at each sampling location. All samples were immediately placed in coolers with ice. The grab water sample labeling, packaging, and preservation were performed according to the procedures described in Section 4 of the ESI FSP and Sections 5 and 6 of the QAPP (E & E 1997a) and the FSP Addendum (E & E 2000). The samples were tested for the chemical parameters presented in Section 4 of this report.

3.4 Swipe Sampling Methods

Ten swipe samples were collected from within AOI 473 - Building 112 Room 10. One swipe sample was collected from within the sump in the northeast corner of Room 10 and nine additional swipe samples were collected from the concrete floor. In addition to these samples, duplicate, split, MS/MSD, and field blank samples were also collected. Since true duplicate, split, and MS/MSD samples cannot be collected from an original swipe location, they were collected from the area immediately next to the original sample location. The field blank consisted of three unused gauze pads moistened with hexane. A precleaned template was placed on the area to be swiped, the new gauze pad was moistened with appropriate solvent, and the area inside the template was completely wiped with the moistened gauze pad. The gauze pad was immediately placed in the sample con-

tainer. Swipe sampling was performed according to the procedures established in the ESI FSP (E & E 1997a) and the Year 2002 ESI FSP (E & E 2002a).

All sampling equipment was decontaminated according to the procedures described in the ESI FSP (E & E 1997a) and the FSP Addendum (E & E 2000). All samples were immediately placed in a cooler with ice and handled as specified in Section 4 of the ESI FSP (E & E 1997a), the FSP Addendum (E & E 2000), and the Year 2002 ESI FSP (E & E 2002a).

3.5 Floor Drain Remediation and Subsurface Soil Sampling

3.5.1 Floor Drain Remediation

The standing water and remaining sediment within the Building 305 paint spray booth floor drain sump (OTH-305) were removed using a wet/dry shop vacuum. The sump was then scrubbed with trisodium phosphate (TSP) and water, pressure washed, and twice rinsed with potable water. The rinse water was also removed with the shop vacuum. All water and sediment removed from the floor drain sump was containerized in three 55-gallon drums for disposal (one drum of sludge and two drums of waste/rinse water).

The analytical results from the subsurface soil samples collected from beneath the floor drain sump were discussed by the USEPA, NYSDEC, AFBCA, USACE, and E & E. Based on the discussion of the analytical results and field observations, the discharge pipe inside the floor drain sump was plugged with concrete and the hole drilled through the bottom of the sump was also filled with concrete. The floor drain remediation was performed according to the procedures described in the FSP Addendum (E & E 2002a). However, completion of the remediation by filling the floor drain sump with concrete up to the level of the existing floor in the paint spray booth was not completed. Completion of the floor drain sump remediation is currently pending further discussion with the NYSDEC and USEPA.

3.5.2 Subsurface Soil Sampling

Three subsurface soil samples were collected from beneath the floor drain pit at OTH-305. The bottom of the sump was drilled through and three subsurface soil samples were collected from 0.0 to 0.5 foot, 0.5 to 1.0 foot, and 1.0 to 2.0 feet beneath the con-

crete bottom of the sump. All subsurface soil samples were collected using a decontaminated hand auger. Soil collection was performed according to the procedures established in the ESI FSP (E & E 1997a) and the modifications outlined in the Year 2002 ESI FSP (E & E 2002a).

All sampling equipment was decontaminated according to the procedures described in the ESI FSP (E & E 1997a) and the FSP Addendum (E & E 2000). The VOC portion of the sample was always collected immediately after the sample was retrieved; the remainder of the soil was homogenized in a clean stainless-steel bowl and placed in appropriate containers. All samples were immediately placed in a cooler with ice and handled as specified in Section 4 of the ESI FSP (E & E 1997a), the FSP Addendum (E & E 2000), and the Year 2002 ESI FSP (E & E 2002a).

3.6 Pipe Vault Floor Remediation

The pipe vault beneath Building 211 contained approximately 2.5 feet of standing water (approximately 800 gallons). As per the FSP (E & E 2002a), the standing water was sampled and analyzed prior to performing the remedial action at Building 211 and permission to discharge the water within the vault into the sanitary sewer next to Building 211 was obtained from the City of Rome Water Pollution Control Facility (RWPCF) (see Appendix C). The water was pumped from the pipe vault directly into the sanitary sewer. Following removal of the water, 5 inches of concrete were pumped onto the floor of the pipe vault. Care was taken not to cover any existing valves or other apparatus with concrete that existed beneath the water in the vault. The pipe vault floor remediation was performed according to the procedures described in the FSP Addendum (E & E 2002a).

3.7 Disposal of Investigation-derived Waste (IDW)

IDW was handled as described in the original ESI FSP. Grab water samples were collected from containerized waste water at OTH-305 and from the pipe vault at Building 211 for disposal purposes. IDW was handled as described in the ESI FSP (E & E 1997a), the FSP Addendum (E & E 2000), and the Year 2002 ESI FSP (E & E 2002a).

3.8 Site Survey

All samples collected during the Year 2002 ESI program were either collected from within a building (Buildings 305, 211, and 112) or from points previously surveyed during the Year 2000 ESI (PCI site 20). Therefore, no surveying was performed during the Year 2002 ESI field program.

4 Site Reports

The following subsections in this Year 2002 ESI report describe the site background, physical characteristics, field investigations, interpretations, and conclusions and recommendations for each individual site investigated. Complete analytical data summaries are provided in Appendix A; calculation of risk-based screening levels for surface wipe samples in Appendix B; letter from the RWPCF in Appendix C; daily activity summaries are provided in Appendix D; and IDW inventory is provided in Appendix E.

4.1 OTH-305: Building 305 - Paint Spray Booth

The objective of this effort was to remove contaminated water and sediment detected in the paint spray booth floor drain during the Year 2000 ESI program, sample the soil beneath the floor drain to see if it has been impacted by the contamination within the floor drain, and seal the floor drain and associated discharge pipe with concrete.

4.1.1 Site Background

Construction of Building 305 was completed by 1943 and the building was used as a quartermaster motor pool garage before being converted to an automotive hobby shop in the 1990s. The paint spray booth (OTH-305) is located inside Building 305 at the building's south end. At one time the location of a satellite waste accumulation point (STW 305) for paint thinners, the site is currently used to paint auto and truck parts.

4.1.2 Physical Characteristics of the Site

Building 305 is located in the central industrial area of the base. The area around the building is generally flat, with less than 5 feet of topographic relief. It is grassed to the north, south, and west, and paved to the east. Building 305 is not located near any major surface water drainage features. Site runoff is channeled to the base storm water drainage system, which drains into Three Mile Creek, which in turn drains to the NYSBC, approximately 1.5 miles south of the base.

The storm water sewer system into which the paint spray booth floor drain discharges drains a large portion of the industrial center of the base. This sewer system collects water from Hill Road to the west, north to the buildings along Hangar Road, and east to several buildings along Electronic Parkway before discharging south into Three Mile Creek. Sediments within the Three Mile Creek AOC have been extensively sampled and the contamination present in the creek was thoroughly characterized during the investigation performed for the Three Mile Creek Feasibility Study Addendum in May 2001. The *Final Three Mile Creek Feasibility Study Addendum Former Griffiss Air Force Base, Rome, New York* was submitted to the USEPA and NYSDEC in July 2002. The sediments at the headwaters of Three Mile Creek were found to contain elevated levels of PCBs, pesticides, VOCs, PAHs, metals, and TRPH (E & E 2002d). Removal of the contaminated sediments within Three Mile Creek is currently scheduled to begin during the winter of 2003/2004.

The floor drain inside the paint spray booth consists of a concrete-lined pit (approximately 2 feet wide, 2.5 feet long, and 2 feet deep) with an overflow pipe that exits the pit to the northwest. This floor drain was covered by a steel grate, which was found to be sealed with plywood and tape during both the 1999 site inspection conducted by E & E and the Year 2000 ESI field program.

The northern portion of Building 305 is used to store lawn-mowing and snow-removal equipment. An additional five floor drains outside the paint spray booth drain to the north and west before discharging to the sanitary and storm sewer systems (see Figure 4.1-1).

4.1.3 Description of Previous Studies

During a site inspection conducted in April 1994 by Tetra Tech, paint residue and overspray was observed on the floor and walls of the booth. Overall, however, the booth was in good condition. A satellite waste accumulation point (STW 305) was located inside the booth.

Parsons Engineering Science, Inc., and OHM Remediation Services Corp. (OHM) performed a Closure of Hazardous Waste/Hazardous Materials Storage Areas Investigation at the former Griffiss AFB in 1996. Building 305 was included in this investigation and underwent a closure action under RCRA. The investigation included pre-closure sampling in July 1996, remediation in December 1996, and post-remediation sampling in December 1996 (AFCEE 1998).

The pre-closure sampling consisted of the collection of six wipe samples from within Building 305, one of which was collected from STW 305 in the paint spray booth (OTH-305). All six of the wipe samples were analyzed for metals and extractable organic halides. Three of the six samples (collected from north of the paint spray booth) were also analyzed for PCBs, and one of the three was analyzed for pesticides. All samples were screened against action levels established for this closure action. Lead was detected in two samples and aldrin was detected in one sample at concentrations above action levels in samples collected from north of the paint spray booth (OTH-305). None of the samples exceeded the PCB action level, and none of the analytes in the sample collected from STW 305 (inside the paint spray booth) exceeded action levels either.

Due to the percentage of exceedances for aldrin and lead, Building 305 was recommended for remediation. Approximately 225 square feet of the area north of OTH-305 were remediated for lead and aldrin.

Three post-remediation wipe samples were collected and analyzed for lead and aldrin. Lead and aldrin were not detected at concentrations above action levels. Remediation goals were met, and the building was recommended for closure (AFCEE 1998).

E & E inspected the paint spray booth on May 26, 1999, and confirmed its condition. There was no waste or evidence of spills at STW 305. However, a floor drain partly filled with water and containing sludge approximately 1 inch deep was observed at the eastern end of the booth. A drainpipe was observed exiting the floor drain toward the

northwest. The discharge point of the drainpipe could not be determined during the inspection.

In spring 2000, E & E investigated OTH-305 as part of the Year 2000 ESI program. To determine the discharge point of the floor drain, a dye test was conducted. Results of the dye trace test indicated that the overflow pipe contained within the paint spray booth floor drain discharged westward into the storm sewer system that parallels March Street, west of Building 305. This 1,000-foot storm sewer discharges into the headwaters of Three Mile Creek approximately 1,000 feet south of Building 305.

To establish whether hazardous substances were present in the floor drain pit, a water sample and a sludge sample were collected from the floor drain. The samples were analyzed for Target Compound List (TCL) VOCs, SVOCs, pesticides, PCBs, and Target Analyte List (TAL) metals/mercury.

Levels of two PCBs, two pesticides, three VOCs, five SVOCs, and 13 metals detected in samples collected from the Building 305 floor drain pit were found to exceed state or federal standards (see Figure 4.1-2). However, the standing water and sludge were contained within the floor drain sump (beneath the level of the overflow pipe), appeared to be stagnant, and did not appear to be leaking into the ground beneath Building 305. At the time of the Year 2002 ESI, the floor drain was restricted from use, there was no flow into the storm sewer, and the water and sludge remaining in the floor drain pit were contained.

4.1.4 Description of Year 2002 ESI Field Investigations

Based on the findings of the Year 2000 ESI and on the planned commercial use of this site (USAF 1995), and as per the Final Year 2000 ESI Report (E & E 2002c) recommendation, the contaminated water and sludge within the floor drain pit was removed and the associated drain pipe was plugged with concrete. The Final FSP (E & E 2002a) also stated that the floor drain pit was to be filled to the level of the floor with concrete, however, in response to NYSDEC comments, the pit has not been filled with concrete at this time. The waste water was analyzed for Toxicity Characteristic Leaching Procedure (TCLP) VOCs, SVOCs, pesticides, herbicides, metals, and mercury; TCL PCBs; ignitability; reactive cyanide; reactive sulfide; pH; and percent solids for disposal purposes.

The soil beneath the floor drain was also sampled to determine whether it has been impacted by the contamination within the floor drain. Three subsurface soil samples were collected from 0.0 to 0.5 foot, 0.5 foot to 1.0 foot, and 1.0 foot to 2.0 feet beneath the bottom of the floor drain pit after the pit was cleaned out and a hole was drilled through the bottom (see Figures 4.1-1 and 4.1-2). The subsurface soil samples were analyzed for TCL VOCs, SVOCs, pesticides, PCBs, TAL metals and mercury, and percent solids.

A list of sample identifications and analyses is presented in Table 4.1-1.

4.1.5 Year 2002 ESI Results and Interpretation

All samples with the exception of the grab water samples, collected for disposal purposes only, were subjected to a detailed screening, described in Section 2. Table 4.1-2 summarizes the positive analytical results and applicable screening criteria and Table 4.1-3 summarizes the TICs analytical results. Complete analytical data summaries for the samples are presented in Appendix A, and QC evaluations are included in the QCSR for the Year 2002 ESI (E & E 2002b). A summary of analytical results is presented below.

Subsurface Soil

Three subsurface soil samples were collected and analyzed for VOCs, SVOCs, pesticides/PCBs, metals, and percent solids. All positive analytical results and screening criteria are shown in Table 4.1-2.

Organics. Twelve SVOCs were detected, including 11 polynuclear aromatic hydrocarbons (PAHs) and bis(2-ethylhexyl)phthalate. Benzo(a)pyrene was the only SVOC found at levels exceeding NYSDEC screening criteria (104 micrograms per kilogram [µg/Kg] in SS01, lab-estimated value). Concentrations of benzo(a)pyrene did not exceed the USEPA RBC. The levels of PAHs detected in the subsurface soils are low and typical of those found throughout the base. They are believed to be the result of incomplete combustion of vehicular and airplane fuels (United States Department of Health and Human Services [USDOH&HS] 1993). Three VOCs were detected in the subsurface soil samples including acetone, methylene chloride and xylenes. Total xylenes were only detected in SS01 at an estimated concentration of 0.838 µg/Kg. Concentrations of methyl-

ene chloride ranged from non-detect to 2.10 µg/Kg (estimated). Lastly, concentrations of acetone, a common laboratory contaminant, ranged from non-detect to 20.1 µg/Kg (estimated). No VOCs were detected in the subsurface soil samples at concentrations exceeding NYSDEC screening criteria or USEPA RBCs.

Thirty-nine semivolatile TICs were detected in at least one subsurface soil sample (see Table 4.1-3). One of these TICs, 2-pentanone, 4-hydroxy-4-methyl, was found at an estimated concentration that exceeds the screening value of 50 ppm for individual SVOCs. Total SVOC concentrations, however, do not exceed the NYSDEC TAGM of 500 ppm for total semivolatiles.

One PCB, Aroclor 1254, was detected in the subsurface soil samples at concentrations ranging between non-detect and 0.0339 mg/Kg. PCB concentrations did not exceed the applicable NYSDEC and USEPA soil screening criteria. Eight pesticides were also detected in the three samples, including 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, beta BHC, delta BHC, endosulfan II, heptachlor, and methoxychlor. The detected pesticides were found at concentrations below NYSDEC screening criteria and USEPA RBCs.

Inorganics. Twenty-one metals were detected in the subsurface soil sample (see Table 4.1-2) with 12 found at concentrations above NYSDEC TAGM 4046 screening criteria. Arsenic was detected in two samples, SS02 and SS03, at concentrations exceeding both state and federal criteria. Arsenic concentrations ranged between 4.78 and 6.73 mg/Kg and exceeded USEPA RBCs in all three samples. However, arsenic concentrations did not exceeded the regional background (16.0 mg/Kg) for the 90th percentile for soils from the eastern United States (Shacklette and Boerngen 1984).

Excluding arsenic, there were no other exceedances of federal criteria, although a number of other metals were detected at levels exceeding NYSDEC screening criteria, including antimony, barium, beryllium, calcium, chromium, copper, iron, nickel, selenium, sodium, and zinc (see Table 4.1-2). Metals detected above the NYSDEC criteria in all three samples included chromium (concentrations ranging from 15.3 to 18.1 mg/Kg), iron (concentrations ranging from 18,200 to 31,300 mg/Kg), nickel (concentrations ranging from 18.9 to 24.8 mg/Kg), and zinc (concentrations ranging from 51.6 to 89.0 mg/Kg). With the exception of calcium and antinomy all of the metals found at concentrations above the NYSDEC screening levels were well below the regional background

for the 90th percentile for soils from the eastern United States (Shacklette and Boerngen 1984). Calcium, however, is a common metal in soils and it is not a concern. Additionally, antimony although it was found above the NYSDEC screening level did not exceed the USEPA RBC.

4.1.6 Conclusions and Recommendations

Soil sampling indicated that there is no significant contamination present beneath the paint spray booth floor drain pit inside Building 305 (OTH-305). Based on these findings, it is recommended that the floor drain pit be filled with concrete to prevent accumulation of water in the future.

Table 4.1-1 Sample Listing, OTH 305 Year 2002 ESI , Former Griffiss Air Force Base, Rome, NY

									ANALYSES																
Location	Date	Sample Number	Lab	Matrix	Depth	WP	Stat	Type	TCLP VOCs - SW1311/8260B	TCLP SVOCs - SW1311/8270C	TCLP Pesticides - SW1311/8081A	TCLP Herbicides - SW1311/9151A	TCLP Metals & Extraction - SW1311/6010B	TCLP Mercury - SW1311/7470A	Total PCBs - SW8082	Ignitability - SW1030	pH - SW9045	Reactivity - Cyanide SW7.3.3.2	Reactivity - Sulfide SW7.3.4.2	% Solids - ASTM_D2216	TCL VOCs - SW8260B	TCL SVOCs - SW8270C	TCL Pesticides - SW8081A	TCL PCBs - SW8082	TAL Metals/Mercury - SW6010B/7471A
OTH-305	05/09/02	OTH305-WG02	ASC	Water Grab	-	Y	T	N1	X	X	X	X	X	X	X	X	X	X	X						
	05/09/02	OTH305-WG03	ASC	Water Grab	-	N	T	N1	X	X	X	X	X	X	X	X	X	X	X						
	05/09/02	OTH305-TB1	ASC	DI Water	-	N	T	TB1													X				
	05/09/02	OTH305-SS01	ASC	Subsurface soil	0.0' - 0.5'	Y	T	N1												X	X	X	X	X	X
	05/09/02	OTH305-SS02	ASC	Subsurface soil	0.5' - 1.0'	Y	T	N1												X	X	X	X	X	X
	05/09/02	OTH305-SS03	ASC	Subsurface soil	1.0' - 2.0'	Y	T	N1												X	X	X	X	X	X

Key:

ASC = E & E's Analytical Services Center.
ASTM = American Society for Testing and Materials.
Depth = Depth interval at which sample will be collected.
DI = Deionized.
ESI = Expanded Site Investigation.
N = Original sample.
OTH = Other Miscellaneous Environmental Factor site.
PCB = Polychlorinated biphenyl.
SS = Subsurface soil sample.
Stat = Status (O= Open, T= Taken, S= Skipped).
SVOC = Semivolatile organic compound.
TAL = Target analyte list.
TB = Trip blank sample.
TCL = Target Compound List.
TCLP = Toxicity Characteristic Leaching Procedure.
VOC = Volatile organic compound.
WG = Grab water sample.
WP = Sample in work plan (Y= yes, N= no).

Table 4.1-2
Summary of Positive Analytical Results for Soil Samples, OTH 305 Year 2002 ESI,
Former Griffiss Air Force Base, Rome, New York

Analyte	NYSDEC TAGM 4046 [1]	EPA RBCs - Industrial [2]	Sample ID: Depth (ft): Date:	OTH305-SS01 0.0 -0.5 05/09/02	OTH305-SS02 0.5 - 1.0 05/09/02	OTH305-SS03 1.0 - 2.0 05/09/02
Semivolatile Organics by Method 8270C (µg/Kg)						
Anthracene	50,000	610,000,000		69.0 J	362 U	360 U
Benz(a)anthracene	224	7,800		146 J	362 U	360 U
Benzo(a)pyrene	61	780		104 J	362 U	360 U
Benzo(b)fluoranthene	1,100	7,800		86.2 J	362 U	360 U
Benzo(g,h,i)perylene	50,000	NA		51.1 J	362 U	360 U
Benzo(k)fluoranthene	1,100	78,000		122 J	362 U	360 U
Bis(2-ethylhexyl)phthalate	50,000	410,000		77.9 J	362 U	78.9 J
Chrysene	400	780,000		148 J	362 U	360 U
Fluoranthene	50,000	82,000,000		379	362 U	360 U
Indeno(1,2,3-cd)pyrene	3,200	7,800		50.5 J	362 U	360 U
Phenanthrene	50,000	NA		302 J	362 U	360 U
Pyrene	50,000	61,000,000		290 J	362 U	360 U
Volatile Organics by Method 8260B (µg/Kg)						
Acetone	200	200,000,000		20.1 J	10.8 U	4.18 J
Methylene chloride	100	760,000		2.10 J	0.446 J	5.52 U
Xylenes, Total	1,200	4,100,000,000		0.838 J	5.41 U	5.52 U
PCBs by Method 8082 (mg/Kg)						
Aroclor 1254	1 (surface) 10 (subsurface)	2.9		0.0339	0.0207 U	0.0213 J
Pesticides/PCBs by Method 8081A/8082 (µg/Kg)						
4,4´-DDD	2,900	24,000		1.61 J	3.10 U	3.28 U
4,4´-DDE	2,100	17,000		1.11 J	3.10 U	0.503 J
4,4´-DDT	2,100	17,000		1.86 J	4.13 U	4.37 U
beta-BHC	200	3,200		5.60	0.543 J	4.37 U
delta-BHC	300	NA		0.748 J	2.07 U	2.19 U
Endosulfan II	900	12,000,000		0.432 J	3.10 U	3.28 U
Heptachlor	100	1,300		6.00	3.10 U	3.28 U
Methoxychlor	NA	10,000,000		7.12 J	41.3 U	43.7 U
Metals/Mercury by Method 6010B/7471A (mg/Kg)						
Aluminum	18,306	2,000,000		16500	16700	17100
Antimony	3.4	820		2.11 J	5.56 J	5.55 J
Arsenic	4.9	3.8		4.78	6.72	6.73
Barium	71	140,000		129	49.8	92.2
Beryllium	0.16	4,100		0.809 U	0.370 J	0.400 J
Cadmium	1	1,000		0.457 J	0.460 J	0.518 J
Calcium	23,821	NA		67900	3370	5500
Chromium	10	6,100		15.5	15.3	18.1
Cobalt	19	41,000		6.58	8.60	8.93
Copper	25	82,000		18.8	40.8	37.4
Iron	2,000	610,000		18200	31300	30400
Lead	200	400		25.8	10.5	18.1
Magnesium	7,175	NA		6040	5280	5440
Manganese	2,106	41,000		532	1550	1230
Mercury	0.1	NA		0.0163 J	0.0375 J	0.0560 U
Nickel	13	41,000		18.9	24.8	24.6
Potassium	1,993	NA		1110	1080	1140
Selenium	0.34	10,000		2.14	2.12 U	2.07 U
Sodium	259	NA		647	189 J	193 J

Key at the end of Table.

Table 4.1-2
Summary of Positive Analytical Results for Soil Samples, OTH 305 Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	NYSDEC TAGM 4046 [1]	EPA RBCs - Industrial [2]	Sample ID: / Depth (ft): / Date:	OTH305-SS01 0.0 -0.5 05/09/02	OTH305-SS02 0.5 - 1.0 05/09/02	OTH305-SS03 1.0 - 2.0 05/09/02
Vanadium	36	14,000		19.7	22.7	21.7
Zinc	20	610,000		**51.6**	**72.3**	**89.0**

[1] New York State Department of Environmental Conservation, Technical and Administrative Guidance Memorandum #4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1994.

[2] Environmental Protection Agency Region III Risk-based concentration for industrial soil, April 2002.

Note: For a complete list of the screening criteria see Section 2.

Key:

EPA = Environmental Protection Agency.
ESI = Expanded Site Investigation.
ft = Feet.
J = Estimated value.
mg/Kg = Milligrams per kilogram.
µg/Kg = Micrograms per kilogram
NA = No criteria available.
NYSDEC = New York State Department of Environmental Conservation.
OTH = Other Miscellaneous Environmental Factor Sites.
PCBs = Polychlorinated biphenyls.
RBC = Risk-based concentration.
SS = Soil sample.
TAGM = Technical and Administrative Guidance Memorandum
U = Not detected (practical quantitation limit listed).

104 J Result above NYSDEC screening criteria (shaded and bolded).
4.78 Result above EPA RBCs (shaded and underlined).
6.73 Result above both NYSDEC screening criteria and EPA RBCs (shaded, bolded, and underlined).

Key at the end of Table.

Table 4.1-3
Summary of Tentatively Identified Compound Results for Soil Samples, OTH 305 Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	Sample ID: Date:	OTH305-SS01 05/09/02	OTH305-SS02 05/09/02	OTH305-SS03 05/09/02
Semivolatile Organics by Method 8270C (µg/Kg)				
Spermatheridine		NF	NF	107 NJ
Pyrene, 2-methyl-		282 NJ	NF	NF
Propane, 1-(1-methylethoxy)-		3270 NJ	1330 NJ	1590 NJ
Phenol, 2,2´-(1,2-ethanediylbis(nitrilom		263 NJ	NF	NF
Octadecane, 2-methyl-		515 NJ	NF	NF
Octadecane		1100 NJ	125 NJ	91.4 NJ
Nonadecane		NF	NF	101 NJ
N,N,N´,N´-Tetramethyl(3_3)paracyclophan-		NF	183 NJ	NF
METHYL ELAIDATE O-ISOPROPYLIDENE		NF	NF	228 NJ
Heptadecane		1817 NJ	NF	NF
exo-3-Carboxyl-endo-5-hydroxybicyclo(2_2		NF	NF	140 NJ
Eicosane		156 NJ	NF	NF
E-8-Hexadecen-1-ol acetate		NF	NF	116 NJ
Docosane, 7-hexyl-		534 NJ	NF	NF
Cyclopentane, (4-octyldodecyl)-		208 NJ	NF	NF
Cyclohexane, (2-decyldodecyl)-		NF	92.3 NJ	NF
Cyclohexadecane, 1,2-diethyl-		NF	NF	349 NJ
Benzo(j)fluoranthene		NF	NF	103 NJ
Benzo(e)pyrene		NF	127 NJ	NF
Benzo		452 NJ	NF	NF
Acetic acid, octadecyl ester		NF	181 NJ	NF
7H-Benz(de)anthracen-7-one		330 NJ	NF	NF
6-0-Ethylhexitol 1,2,3,4,5-pentaacetate		651 NJ	NF	NF
4-HYDROXY-5-METHOXY-3-NITROPHENYL ESTER		NF	116 NJ	NF
3,4-Dihydroisoquinolin, 1-benzyl-6,7-dih		NF	NF	229 NJ
2-Undecanone, 6,10-dimethyl-		NF	NF	93.7 NJ
2-Pentanone, 4-hydroxy-4-methyl-		266000 NJ	27300 UNJ	30600 UNJ
2-Nonadecanone		NF	NF	84 NJ
2,6,10,14-Hexadecatetraenoic acid, 3,7,1		NF	NF	140 NJ
2,5a-Methano-5ah-pyrido(1,2-b)(1,2)oxaze		NF	110 NJ	NF
1-Phenanthrenecarboxylic acid, 1,2,3,4,4		148 NJ	NF	NF
1-Octadecene		NF	136 NJ	NF
1H-Indole, 3-Phenyl-2-(3´-methyl-1H-indo		791 NJ	NF	127 NJ
1-Hexadecene		NF	NF	165 NJ
1-Eicosanol		NF	NF	137 NJ
1-Docosene		700 NJ	NF	456 NJ
13-Tertadecen-1-ol acetate		NF	89.5 NJ	NF
11H-Benzo(b)fluorene		194 NJ	NF	NF
1,21-Docosadiene		NF	NF	116 NJ

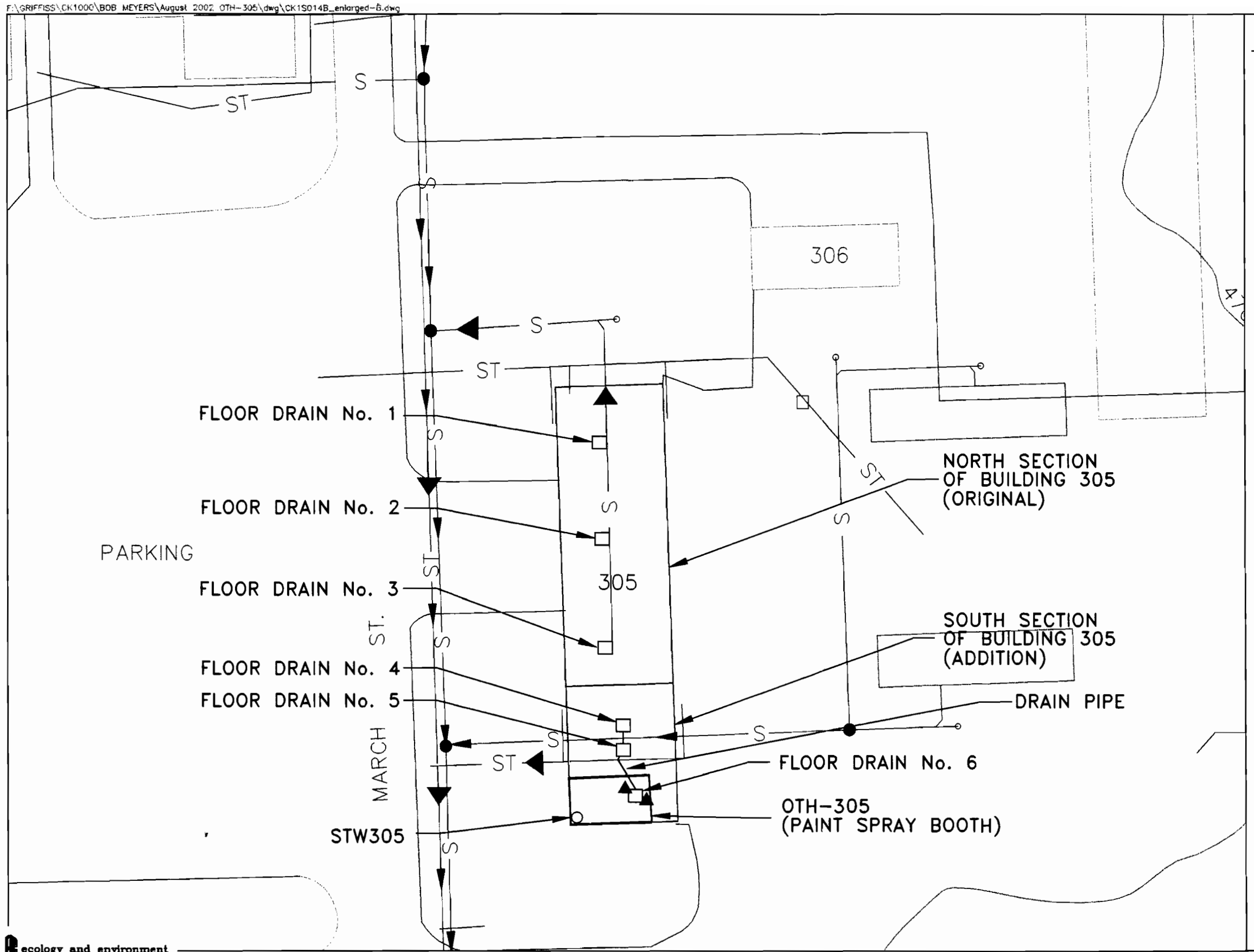
Note: Results are reported as total for similar tenatively identified compounds.

Key:

NF = Not found.
NJ = Identification not confirmed, estimated value.
µg/Kg = Micrograms per kilogram.
OTH = Other Miscellaneous Environmental Factor Sites.
UNJ = Identification not confirmed, U flagged due to blank contamination.

Key at the end of Table.

F:\GRIFFISS\CK1000\BOB MEYERS\August 2002 OTH-305\dwg\CK1S014B_enlarged-B.dwg



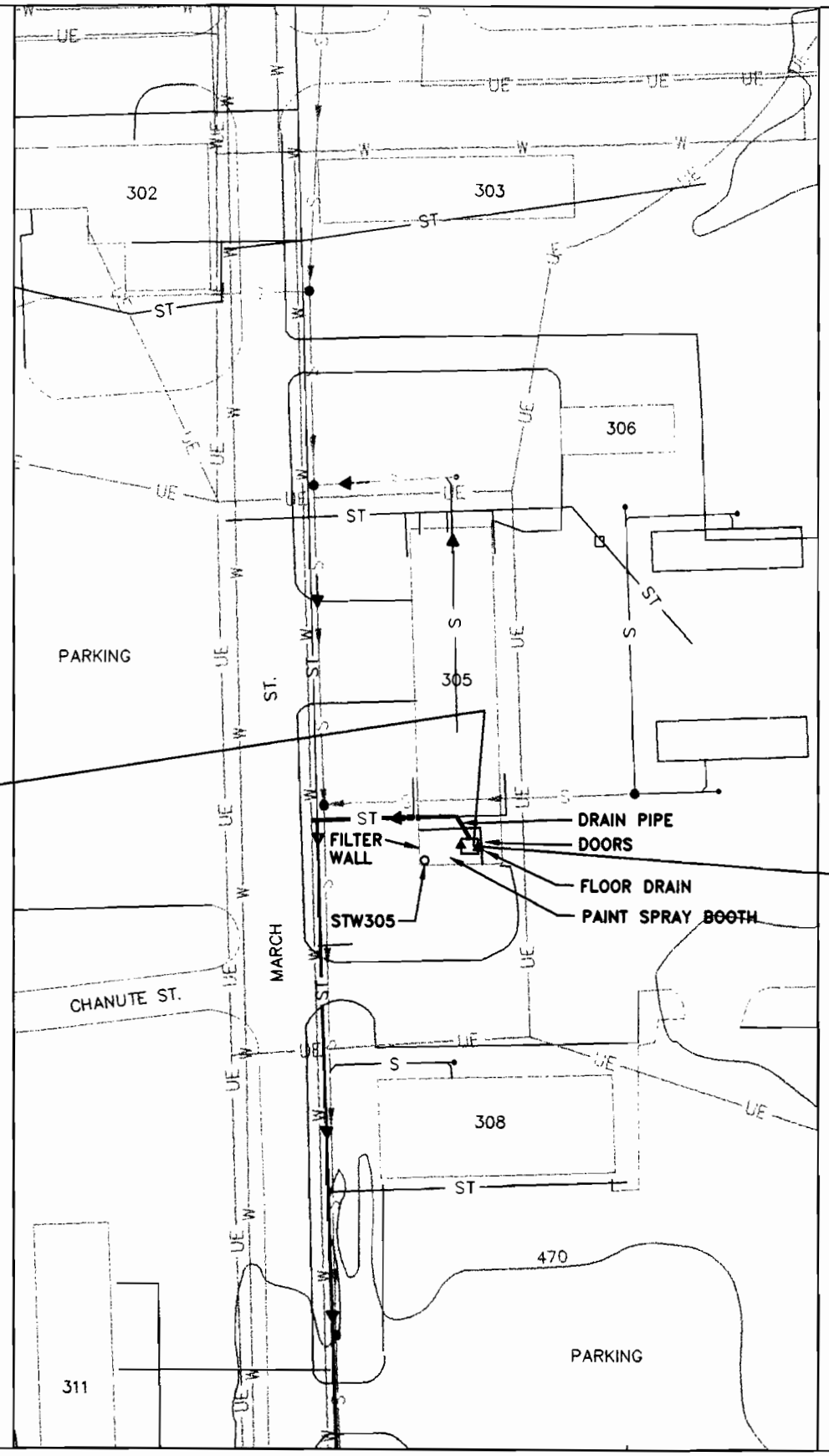
ecology and environment

FIGURE 4.1-1 BUILDING 305 PAINT SPRAY BOOTH (OTH-305) SAMPLING-LOCATIONS AND FLOOR DRAIN SUMMARY

F:\GRIFFISS\CK1000\BOB MYERS\Jan 2002 Wp\June 03\CK1S014C.dwg

OTH305-WG01	
ORGANICS (µg/L)	
Ethylbenzene	149
m,p-Xylene	492
Bis(2-ethylhexyl)phthalate	33.8
Butylbenzylphthalate	181
Aroclor 1254 (Total PCBs)	3.07
INORGANICS (µg/L)	
Aluminum	1420
Antimony	17.0J
Barium	3050
Cadmium	9.38J
Chromium	220J
Iron	10400J
Lead	822J
Manganese	225
Sodium	48700
Zinc	3130

OTH305-WG01/D	
ORGANICS (µg/L)	
Ethylbenzene	159
m,p-Xylene	448
Bis(2-ethylhexyl)phthalate	56.2
Butylbenzylphthalate	134
Aroclor 1254 (Total PCBs)	3.44
INORGANICS (µg/L)	
Aluminum	828
(Al exceeded federal MCL only)	
Antimony	9.62J
Barium	2000
Cadmium	5.14J
Chromium	123J
Iron	5320J
Lead	449J
Manganese	146
(Mn exceeded federal MCL only)	
Sodium	48200
Zinc	1660J



OTH305-SD01	
ORGANICS (µg/kg)	
Ethylbenzene	489000
m,p-Xylene	1590000
Xylenes, Total	1610000
Bis(2-ethylhexyl)phthalate	173000J
Butylbenzylphthalate	383000J
Di-n-butylphthalate	116000J
Di-n-octylphthalate	64800J
Naphthalene	18500J
Dieldrin	226J
PCBs (mg/kg)	
Aroclor 1242	4.8
Aroclor 1254	10.6
Total PCBs	15.48
INORGANICS (mg/kg)	
Antimony	80.8
Barium	12000
Cadmium	65.7
Calcium	28900
Chromium	1440
Cobalt	165
Copper	586
Iron	56700
Lead	4970
Mercury	1.52J
Nickel	105
Selenium	7.89J
Sodium	263
Zinc	14500J

OTH305-SD01/D	
ORGANICS (µg/kg)	
Ethylbenzene	505000
m,p-Xylene	1670000
Xylenes, Total	1690000
Heptachlor epoxide	133J
Butylbenzylphthalate	82900J
Di-n-butylphthalate	23400J
Chrysene	202J
Dieldrin	504
PCBs (mg/kg)	
Aroclor 1242	8.84
Aroclor 1254	18.9
Total PCBs	27.74
INORGANICS (mg/kg)	
Antimony	57.6
Barium	15100
Cadmium	51.2
Calcium	23700
Chromium	1020
Cobalt	143
Copper	532
Iron	58000
Lead	3960
Mercury	1.43J
Nickel	91.2
Selenium	6.86J
Zinc	10800J

LEGEND

- ▲ YEAR 2000 ESI GRAB WATER AND SEDIMENT SAMPLE LOCATION
- ▲ YEAR 2002 ESI SUBSURFACE SOIL SAMPLE LOCATION
- —— S —— SANITARY SEWER 1942
- SANITARY SEWER CURRENT
- —— ST —— STORMWATER SEWER 1942
- —— ST —— STORMWATER SEWER 1968
- —— ST —— STORMWATER SEWER 1973
- o SATELLITE WASTE ACCUMULATION POINT (STW)
- ◀— — — DIRECTION OF DRAIN FLOW
- EXCEEDS RISK BASED SCREENING CRITERIA
- 3.07 VALUE ALSO EXCEEDS FEDERAL MCL

Al	Aluminum
OTH	OTHER MISCELLANEOUS SITES
J	ESTIMATED VALUE
MCL	MAXIMUM CONTAMINANT LEVEL
Mn	Manganese
NYSDEC	NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

NOTES:

1. ONLY ANALYTICAL DATA FROM THE YEAR 2000 ESI INVESTIGATION THAT EXCEEDED SCREENING CRITERIA ARE SHOWN.

2. ALL DATA EXCEEDED NYSDEC CRITERIA UNLESS OTHERWISE NOTED.

N

SCALE IN FEET

0 100 200 300

ecology and environment

Figure 4.1-2 YEAR 2000 AND 2002 ESI ADDENDUM SAMPLING LOCATIONS AND YEAR 2000 ESI GRAB WATER AND SEDIMENT SAMPLE RESULTS BUILDING 305 PAINT SPRAY BOOTH (OTH-305)

4.2 PCI Site 20

The objective of this work was to determine whether lead contamination detected in the near-surface soil at this site remained after the Year 2000 ESI removal of near-surface soil and surface debris.

4.2.1 Site Background

PCI Site 20 is located on a wooded bank of the Mohawk River on the western edge of a present-day golf course. According to PCI's archival search, this site is not depicted on any historical map (PCI 1997).

PCI conducted Phase I and Phase II archaeological investigations of the site in 1994 and 1995, respectively. Excavations performed by PCI during the Phase I and Phase II archaeological investigations revealed no hazardous or potentially hazardous materials. Artifacts recovered during the Phase I archaeological investigation originated predominantly from the post-World War II era. Other materials encountered during the Phase I investigation may be from an industrial community, including canning factories, dating from the late nineteenth century to the 1940s. The PCI Phase II investigation consisted of shovel tests and collection of artifacts. The artifacts recovered during the Phase II investigation included glass, ceramic, metal, rubber, plastic, leather, bone, shell, and coal. In addition to the artifacts recovered, a mound of modern asphalt rubble was observed on site during the archaeological investigations. PCI Site 20 was not recommended for listing in the National Register of Historic Places (PCI 1997).

E & E inspected the site on May 27, 1999, and confirmed the presence of a small amount of surface debris and a mound of asphalt rubble. No evidence of a release to the environment was observed.

4.2.2 Physical Characteristics of the Site

PCI Site 20 is located on a wooded bank of the Mohawk River on the western edge of a present-day golf course. PCI identified the site as a modern, or possibly recent, historic dump with no significant or intact historic deposits. The approximate dimensions of the site are 49 feet by 97 feet, and small debris particles were observed to extend to an approximate depth of 3 to 6 inches BGS. Erosion, additional dumping, and possible earth-moving activities have disturbed the site.

4.2.3 Description of Previous Studies

PCI conducted Phase I and Phase II archaeological investigations of the site in 1994 and 1995, respectively. E & E inspected the site on May 27, 1999. No other investigations have been performed.

In spring 2000, E & E investigated PCI Site 20 as part of the Year 2000 ESI program. A geophysical survey, near-surface soil sampling, and debris removal were performed. Debris removal included removing a pile of asphalt, scattered surface debris, and a small amount of surface soil with a backhoe. The total volume of surface debris and soil removed was approximately 20 cubic yards.

The geophysical survey performed at the site using an EM31 ground conductivity meter and magnetometer indicated no buried metallic materials or geophysical anomalies.

Five near-surface soil samples were collected prior to debris removal. All near-surface soil samples were analyzed for TCL VOCs and SVOCs, TCL pesticides/PCBs, TAL metals, and percent solids (see Figure 4.2-1).

Four PAHs were detected at concentrations above NYSDEC screening criteria. No SVOCs were detected above USEPA RBCs.

Aroclor 1260 and nine pesticides were detected in the near-surface soil samples at concentrations below NYSDEC screening criteria and USEPA RBCs.

The arsenic concentration in one sample exceeded only USEPA RBCs, concentrations of 13 metals exceeded only NYSDEC criteria, and lead concentrations in two samples exceeded both. Most metals were detected at concentrations slightly above the screening levels.

Since the samples were collected prior to debris removal at locations with the most debris accumulation, the isolated presence of metals was considered to be associated with the surface debris at the two sampling locations. Based on the potential future use of this site and the elevated levels of lead detected in near-surface soil samples NS03 and NS04, further sampling was recommended in the Final Year 2000 ESI Report (E & E 2002c).

4.2.4 Description of Year 2002 ESI Field Investigations

To determine if lead detected prior to debris removal in the near-surface soil is still present, three additional near-surface soil samples were collected from 0 to 2 inches

BGS (see Figure 4.2-1). The 2002 ESI near-surface soil samples were collected at 2000 ESI sample locations NS03 and NS04 that contained the highest levels of lead, and from in between these two sample locations. The 2002 samples were analyzed for lead content to determine if the debris removal conducted during the Year 2000 ESI program sufficiently addressed the elevated lead levels.

The Year 2002 ESI PCI Site 20 sampling locations are shown on Figure 4.2-1. A list of sample identifications and analyses is presented in Table 4.2-1.

4.2.5 Year 2002 ESI Results and Interpretation

All samples were subjected to a detailed screening, described in Section 2. Table 4.2-2 summarizes the positive analytical results and applicable NYSDEC and USEPA soil screening criteria. A complete analytical data summary for each sample is presented in Appendix A, and QC evaluations are included in the QCSR for the Year 2002 ESI (E & E 2002b). A summary of analytical results is presented below.

Near-surface soil

Three near-surface soil samples were collected (plus one duplicate) and analyzed for TAL lead only (see Table 4.2-1).

Inorganics. Positive analytical results and screening criteria are summarized in Table 4.2-2. Lead was detected in all soil samples, ranging in concentration from 202 mg/Kg in PCI20-NS06/D to 521 mg/Kg in PCI20-NS08. Three of the four soil samples (NS06/D, NS07, and NS08) contained lead in concentrations that exceeded NYSDEC screening criteria. Additionally, lead exceeded both the NYSDEC screening criteria and the USEPA RBC in NS08. NS08 was collected from the same location as Year 2000 ESI sample PCI20-NS03 which previously contained 2,220 mg/Kg of lead. Since significant lead detection at the site is infrequent (one above both state and federal criteria) its presence does not represent a serious concern.

4.2.6 Conclusions and Recommendations

The purpose of this investigation was to determine whether lead contamination present prior to debris removal in the near-surface soil is still present. Elevated levels of lead were found in only one out of six locations sampled on site.

Based on the limited extent of lead detected on site, NFS is recommended. The potential future utilization of the site for public/recreational use (USAF 1995) was considered in making this recommendation.

Table 4.2-1 Sample Listing, PCI 20 Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

									ANALYSES	
Location	Date	Sample Number	Lab	Matrix	Depth	WP	Stat	Type	TAL Lead Only SW6010B	% Solids ASTM_D2216
PCI 20	07/15/02	PCI20-NS06	ASC	Near-surface Soil	0.00' - 0.17'	Y	T	N1	X	X
	07/15/02	PCI20-NS06/D	ASC	Near-surface Soil	0.00' - 0.17'	Y	T	FD1	X	X
	07/15/02	PCI20-NS06/S	ERDC	Near-surface Soil	0.00' - 0.17'	Y	T	FR1	X	X
	07/15/02	PCI20-NS07	ASC	Near-surface Soil	0.00' - 0.17'	Y	T	N1	X	X
	07/15/02	PCI20-NS08	ASC	Near-surface Soil	0.00' - 0.17'	Y	T	N1	X	X
	07/15/02	PCI20-NS08 (extra volume)	ASC	Near-surface Soil (MS/MSD)	0.00' - 0.17'	Y	T	MS1	X	X

Key:

ASC = E & E's Analytical Services Center.
ASTM = American Society for Testing and Materials.
/D = Duplicate sample.
Depth = Depth interval at which sample will be collected.
ERDC = U.S. Army Engineer Research and Development Center Quality Assurance Laboratory.
ESI = Expanded Site Investigation.
FD = Field duplicate.
FR = Field split/replicate.
MS/MSD = Matrix spike/matrix spike duplicate.
N = Original sample.
NS = Near-surface soil sample.
PCI = Panamerican Consultants, Inc. (site).
/S = Split sample.
Stat = Status (O= Open, T= Taken, S= Skipped).
TAL = Target analyte list.

Table 4.2-2
Summary of Positive Analytical Results for Near Surface Soil Samples, PCI 20 Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	NYSDEC TAGM 4046 [1]	EPA RBCs - Industrial [2]	Sample ID: Depth (ft): Date:	PCI20-NS06 0.0 - 0.17 07/15/02	PCI20-NS06/D 0.0 - 0.17 07/15/02	PCI20-NS07 0.0 - 0.17 07/15/02	PCI20-NS08 0.0 - 0.17 07/15/02
Metals by Method 6010B (mg/Kg)							
Lead	200	400		183	**202**	262	**521**

[1] New York State Department of Environmental Conservation, Technical and Administrative Guidance Memorandum #4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1994.

[2] Environmental Protection Agency Region III Risk-based concentration for industrial soil, April 2002.

Note: For a complete list of the screening criteria see Section 2.

Key:

/D = Duplicate sample.
EPA = Environmental Protection Agency.
ESI = Expanded Site Investigation.
ft = Feet.
J = Estimated value.
mg/Kg = Milligrams per kilogram.
NS = Near surface soil sample.
NYSDEC = New York State Department of Environmental Conservation.
PCI = Panamerican Consultants, Inc. (site).
RBC = Risk-based concentration.
TAGM = Technical and Administrative Guidance Memorandum
U = Not detected (practical quantitation limit listed).
202 Result above NYSDEC screening criteria (shaded and bolded).
521 Result above both NYSDEC screening criteria and EPA RBCs (shaded, bolded, and underlined).

Key at the end of Table.

CK1S002C

PC120–NS04 (0–0.17ft. BGS)	
ORGANICS (µg/kg)	
Benzo(a)pyrene	169J
INORGANICS (mg/kg)	
Antimony	11.9
Arsenic	16
(As only exceeded RBC)	
Barium	759
Cadmium	16.3
Chromium	45.2
Copper	251
Iron	145,000
Lead	1,640
Mercury	3.83J
Nickel	59.0
Selenium	9.03J
Zinc	465J

PC120–NS06/D (0–0.17ft. BGS)	
INORGANICS (mg/kg)	
Lead	202

PC120–NS03 (0–0.17ft. BGS)	
ORGANICS (µg/kg)	
Benzo(a)anthracene	742J
Benzo(a)pyrene	741J
Chysene	812J
Dibenz(a,h)anthracene	117J
INORGANICS (mg/kg)	
Antimony	19.7
Cadmium	10.5
Chromium	39.3
Cobalt	30.1
Copper	79.3
Iron	96,900
Lead	2,270
Mercury	0.251J
Nickel	68.9
Selenium	5.33J
Zinc	332J

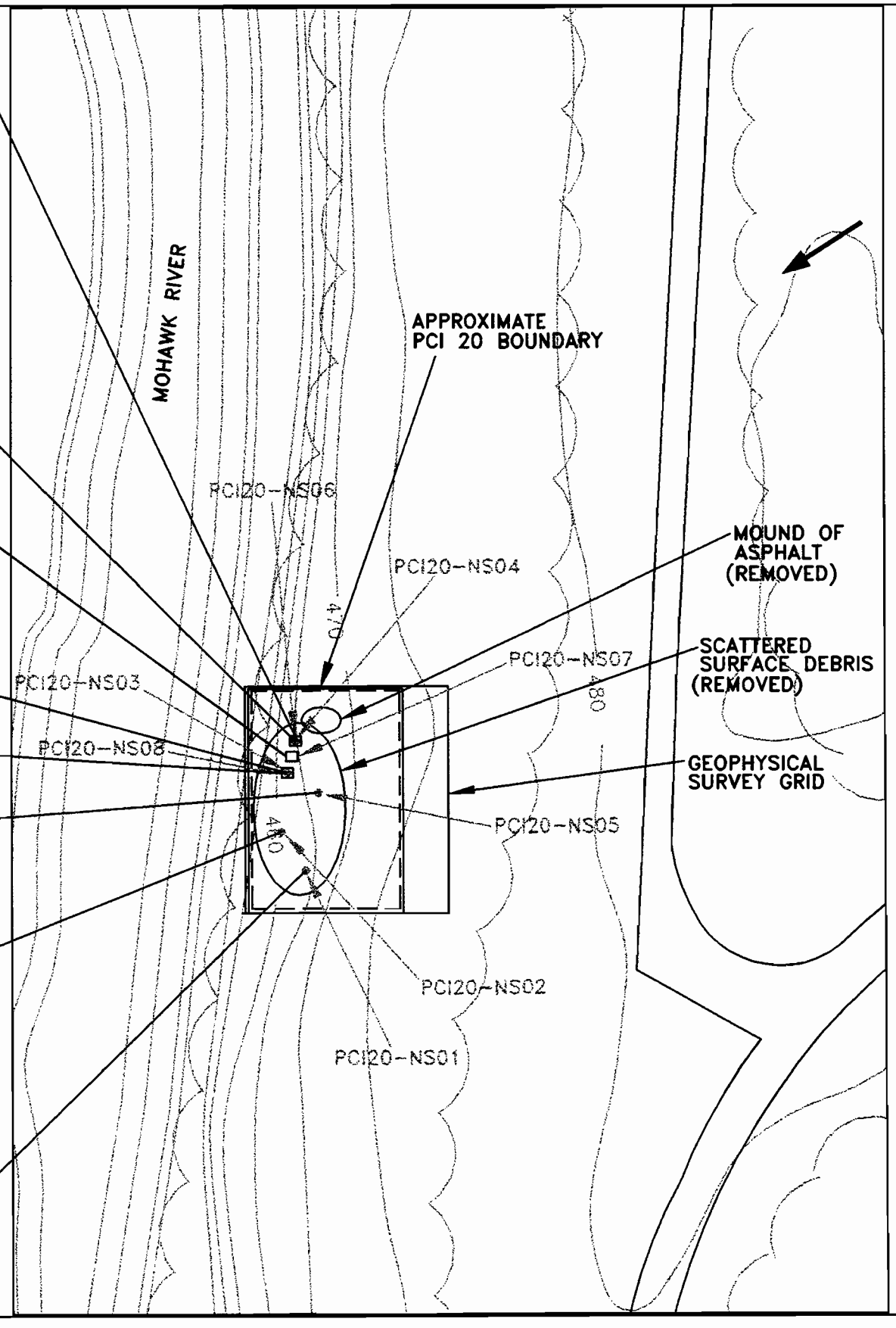
PC120–NS07 (0–0.17ft. BGS)	
INORGANICS (mg/kg)	
Lead	262

PC120–NS08 (0–0.17ft. BGS)	
INORGANICS (mg/kg)	
Lead	524

PC120–NS05 (0–0.17ft. BGS)	
ORGANICS (µg/kg)	
Benzo(a)anthracene	507
Benzo(a)pyrene	397J
Chysene	580
INORGANICS (mg/kg)	
Antimony	4.41
Beryllium	0.705J
Cadmium	4.04
Mercury	0.147J
Selenium	2.64J
Zinc	143J

PC120–NS02 (0–0.17ft. BGS)	
ORGANICS (µg/kg)	
Benzo(a)pyrene	212J
INORGANICS (mg/kg)	
Cadmium	7.65
Chromium	34.3
Copper	106
Iron	69,200
Lead	222
Mercury	1.17J
Selenium	3.98J
Zinc	147J

PC120–NS01 (0–0.17ft. BGS)	
ORGANICS (µg/kg)	
Benzo(a)pyrene	161J
INORGANICS (mg/kg)	
Beryllium	0.682
Cadmium	9.77
Chromium	25.8
Copper	74.3
Iron	81,000
Mercury	0.317J
Selenium	3.91J
Zinc	367J



LEGEND

- APPROXIMATE DIRECTION OF GROUNDWATER FLOW
- YEAR 2000 ESI ADDENDUM NEAR–SURFACE SOIL SAMPLE LOCATION
- YEAR 2000 ESI ADDENDUM NEAR–SURFACE SOIL SAMPLE LOCATION TO BE RESAMPLED DURING 2002 ESI ADDITIONAL SAMPLING
- 2002 ESI ADDITIONAL NEAR–SURFACE SOIL SAMPLE LOCATION
- EXCEEDS RISK BASED SCREENING CRITERIA

As	Arsenic
BGS	BELOW GROUND SURFACE
ESI	EXPANDED SITE INVESTIGATION
J	ESTIMATED VALUE
PCI	PANAMERICAN CONSULTANTS, INC.
NYSDEC	NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SITE LOCATION

NOTES:
1. ONLY ANALYTICAL DATA FROM THE YEAR 2000 ESI THAT EXCEEDED SCREENING CRITERIA ARE SHOWN.
2. ALL DATA EXCEEDED NYSDEC CRITERIA UNLESS OTHERWISE NOTED.

N

SCALE IN FEET
0 60 120 180

FIGURE 4.2–1 PCI SITE 20
YEAR 2000 AND 2002 ESI RESULTS
AND SAMPLE LOCATIONS

4.3 Building 211 - Pipe Vault (DRY- 211 & OTH-211)

The objective of this work was to encapsulate residual mercury contamination present on the floor of the pipe vault beneath Building 211 (OTH-211, DRY-211).

4.3.1 Site Background

A large manifolding pressure-control gauge in Building 211 broke in 1991 resulting in a mercury spill in the building. Some of the mercury was collected from the floor by one of the shop workers. Building 211 is currently used as a drinking water chlorination facility. No mercury-containing equipment is currently used in this building.

In 1997, during the ESI and CS of AOIs and Drywell/Wastewater-Related Systems (DRY/WW) program (E & E 1998), swipe samples collected on the floor near the drains and the pipe vault grate were found to contain low levels of mercury. In addition, a grab water sample taken from within the concrete pipe vault contained low levels of mercury. Based on these results, NYSDEC and USEPA concurred with the recommendation made in the Draft ESI Report (E & E 1998) to clean up the residual mercury contamination at Building 211.

In response to the recommendation made in the Draft ESI Report, an Interim Removal Action (IRA) was performed by OHM in 2000. However, upon completion of the IRA, residual mercury contamination above the action level remained on the pipe vault floor (OHM 2001).

4.3.2 Physical Characteristics of the Site

Building 211 is located near the intersection of Hangar Road and March Street (see Figure 1-2) in the west-central portion of the base. There is a concrete pipe vault to service the main water pipe below the floor inside Building 211. The pipe vault for the water main consists of a 9-foot-deep, 4-foot-wide, and 11-foot-long concrete vault beneath the center of Building 211 covered with a 2-foot square steel grate. There were approximately 2.5 feet of standing water inside this vault during a site inspection performed by E & E on November 27, 2001.

The subsurface log for temporary well D211-SS01 drilled at this site in 1997 during the ESI and CS of AOIs and DRY/WW program (E & E 1998) indicates that the subsurface soils consist predominantly of sand and gravel with some silt and clay. Saturated

soils were encountered at a depth of 14 feet BGS during drilling, and groundwater was measured at 16.44 feet BGS at the time of sampling.

4.3.3 Description of Previous Studies

This site was investigated in 1997 under the ESI and CS of AOIs and DRY/WW program, primarily because of a mercury spill from a manometer, which occurred in 1991. A geophysical survey using ground-penetrating radar (GPR) and drain tracing were performed in an attempt to locate the drywell (DRY-211) next to Building 211. The drywell was not located by using either method. The investigation inside Building 211 consisted of obtaining a total of three swipe samples from the two floor drains and the grate covering the pipe vault and one grab water sample from inside the water main pipe vault. The investigation outside Building 211 consisted of drilling and installing one temporary well (D211-SS01) at the suspected drywell location on the east side of the building and collecting one subsurface soil sample from 2 to 4 feet BGS, one subsurface soil sample from 8 to 12 feet BGS (groundwater interface), and one groundwater sample from the temporary well. The borehole was drilled to a depth of 22 feet BGS and the temporary well was installed in the borehole with a 10-foot screened interval. Saturated soils were encountered at a depth of 14 feet BGS during drilling, and groundwater was measured at 16.44 feet BGS in temporary well D211-SS01 at the time of sampling.

The results of the GPR survey did not indicate the presence of a drywell at this site. The soil and groundwater samples collected at the approximate location of the drywell did not contain mercury or other contaminants of concern at levels above the screening criteria current at that time. Mercury was detected at 0.84 micrograms per liter (µg/L) in the unfiltered groundwater sample collected from the temporary well but was not detected in the filtered groundwater sample. This concentration was below the NYSDEC criterion (2 µg/L), MCL (2 µg/L), and RBC for tap water (11 µg/L) for mercury current during the 1997 ESI; however, it does exceed the current NYSDEC Class GA groundwater standard of 0.7 µg/L. The filtered and unfiltered grab water samples collected from the pipe vault beneath Building 211 contained mercury at concentrations of 3.6 and 2.7 µg/L, respectively. Three of the four swipe samples collected from the area around the two floor drains and pipe vault grate also contained mercury at concentrations ranging from 0.93 to 3.7 µg/wipe (E & E 1998). Based on these results, NYSDEC and the

USEPA concurred with the recommendation made in the Draft ESI Report to clean up the residual mercury contamination at Building 211.

In response to the recommendation made in the Draft 1998 ESI Report, an IRA was performed at Building 211 by OHM between July 10 and August 23, 2000. IRA objectives for this site were established by the AFBCA in conjunction with NYSDEC and USEPA.

The building floor and the floor of the pipe vault located under Building 211 were decontaminated for mercury twice by OHM. Several small beads of free mercury were discovered during the cleaning of the pipe vault. The results of confirmation wipe samples indicated that the site-specific action level for mercury in wipes was achieved for the floor of the building but that residual mercury contamination above the action level remained on the pipe vault floor. Confirmatory wipe sample locations are provided in Appendix F. Since the pipe vault floor has been decontaminated twice and the likelihood of human exposure is low due to the remote location of the contaminated surface, no further cleaning was recommended by OHM. An alternative recommendation made by OHM was to encapsulate the residual mercury contamination by painting the pipe vault floor (OHM 2001).

4.3.4 Description of Year 2002 ESI Field Investigations

The objectives of this work were to remove and properly dispose of the standing water within the pipe vault and encapsulate the residual mercury contamination present on the pipe vault floor. Prior to removal, the water within the vault was sampled and analyzed for TAL metals for disposal purposes. Based on the results of the analysis, the water was pumped to the sanitary sewer adjacent to Building 211 with the approval of the RWPCF (see Appendix C). Upon removal of the water, a 5-inch-thick layer of concrete was pumped into the bottom of the vault to prevent future contact with the residual mercury contamination present on the existing concrete floor.

The Year 2002 ESI sampling locations for the Building 211 - Pipe Vault are shown on Figure 4.3-1. A list of sample identifications and analyses is presented in Table 4.3-1.

4.3.5 Year 2002 ESI Results and Interpretation

The standing water was sampled and analyzed in order to get permission from the RWPCF to discharge it into the sanitary sewer next to Building 211. Table 4.3-2 summarizes the positive analytical results. A complete analytical data summary is presented in Appendix A, and QC evaluations are included in the QCSR for the Year 2002 ESI (E & E 2002b).

Laboratory analysis of the grab water sample indicated the presence of 16 metals at low levels. Upon review of the analytical data, the RWPCF granted permission to discharge the water (see June 19, 2002 letter from RWPCF in Appendix C) and the water was pumped from the pipe vault directly into the sanitary sewer.

4.3.6 Conclusions and Recommendations

The grab water results indicated very low levels of mercury remained in the pipe vault. The water was removed from the pipe vault and the floor was encapsulated with a 5-inch-thick concrete slab. The limited presence of mercury beneath the new concrete slab does not pose a concern based on the planned future use of the site and NFA is recommended for this site.

The actions at Building 211 will be documented in a post-action group ROD along with the other 2002 ESI sites. Any institutional controls or land use restrictions associated with Building 211 will be documented in the ROD.

Table 4.3-1 Sample Listing, Building 211 Pipe Vault Floor Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Location	Date	Sample Number	Lab	Matrix	WP	Stat	Type	ANALYSES: TAL Metals SW6010B/7470/71A
Bldg. 211	02/06/02	Bldg211-WG01	ASC	WG	Y	T	N1	X

Key:

ASC = E & E's Analytical Services Center.
Bldg. = Building.
Depth = Depth interval at which sample will be collected.
ESI = Expanded Site Investigation.
N = Original sample.
Stat = Status (O= Open, T= Taken, S= Skipped).
TAL = Target analyte list.
WG = Grab water sample.
WP = Sample in work plan (Y= yes, N= no).

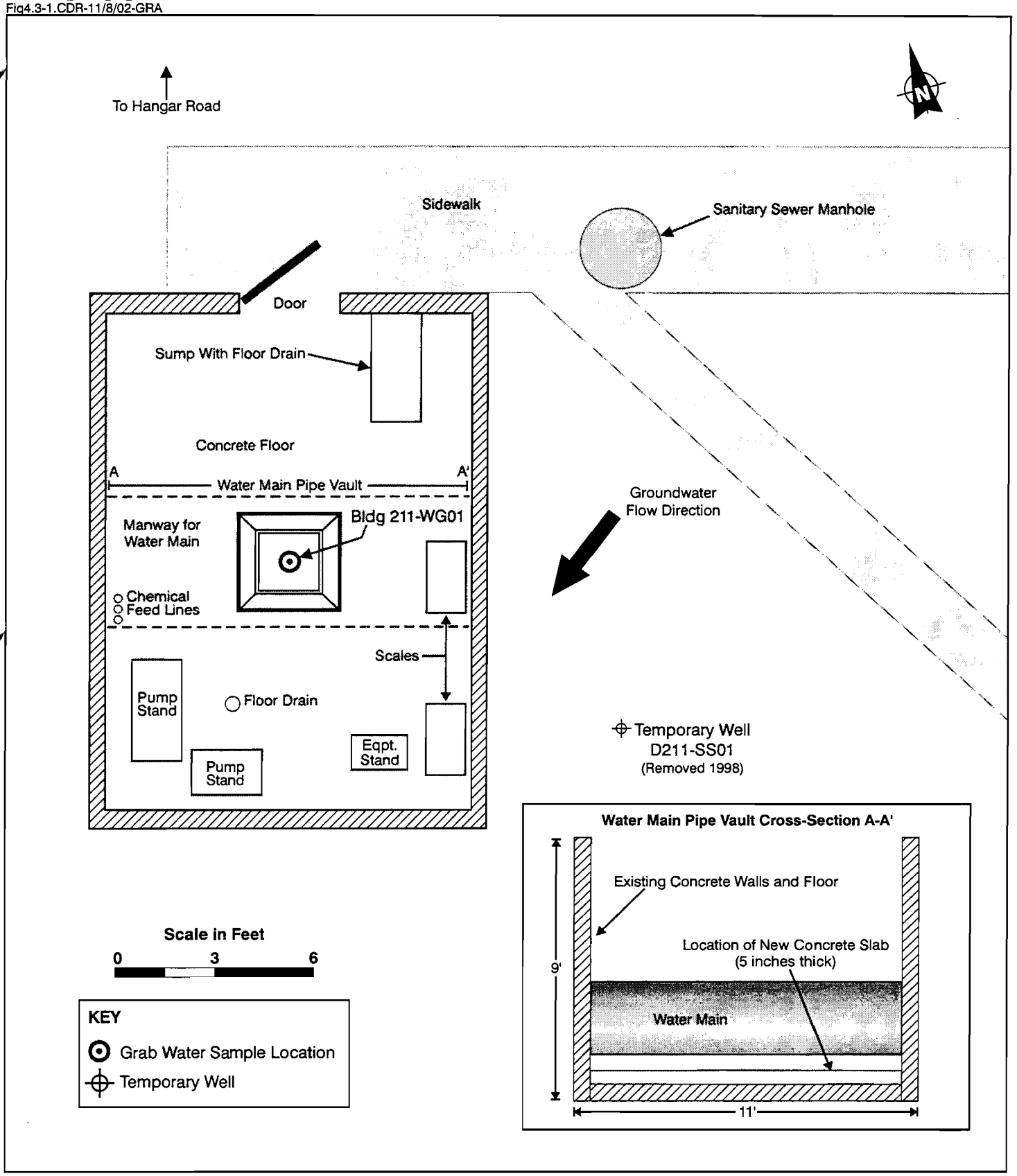
Table 4.3-2
Summary of Positive Analytical Results for Grab Water Samples,
Building 211 Pipe Vault Floor Year 2002 ESI,
Former Griffiss Air Force Base, Rome, New York

Analyte	Sample ID: / Date:	Bldg211-WG01 / 02/06/02
Metals/Mercury by Method 6010B/7470A (µg/L)		
Aluminum		61.6
Antimony		12.6
Barium		28.4
Calcium		39300
Chromium		1.3
Cobalt		8.1
Copper		63.3
Iron		1320
Magnesium		3700
Manganese		106
Mercury		0.72
Nickel		27.8
Potassium		4520
Sodium		21300
Vanadium		0.72
Zinc		254

Key:

ESI = Expanded Site Investigation.
J = Estimated value.
µg/L = Micrograms per liter.
WG = Grab water sample.

Key at the end of Table.



SOURCE: Ecology and Environment, Inc., 2002

Figure 4.3-1 BUILDING 211 2002 ESI SAMPLING AND REMEDIAL ACTION LOCATIONS FORMER GRIFFISS AIR FORCE BASE, ROME, NEW YORK

4.4 AOI 473 - Building 112 Room 10

A former base employee stated that a basement room, which has since had a false floor put over it, previously contained a large oil tank. The former employee stated there were two 150-gallon tanks outside the room and a large tank inside the room and that the pipes/fittings often leaked and soaked the entire floor of the room with oil. The objective of this work was to determine whether petroleum hydrocarbons, potentially containing PCBs, have been spilled in AOI 473-Building 112 Room 10.

4.4.1 Site Background

Building 112, formerly a High Power Laboratory, is located in the central industrialized area of Griffiss AFB. Two aboveground storage tanks (ASTs) and one underground storage tank (UST) were located near the northeast corner of Building 112 before they were removed prior to 1994. The loading dock area was used for the storage of PCB containers, which resulted in PCB soil contamination. A PCB Dump Area south of Building 112, comprising a 16-foot by 44-foot fenced-in gravel area, was used to store PCB transformers until they were removed in 1994.

In spring 1999, a former Griffiss AFB employee reported to AFBCA that he dumped transformer oil along the northern wall of the building and the northern section of the east and west walls. Oil reportedly was also dumped into a concrete pit (terra-cotta sump) in the northernmost cell of the basement floor. These areas were designated AOI 469 and investigated during the Year 2000 ESI program. No further study was recommended for AOI 469 in the Final Year 2000 ESI Report.

However, in winter 2002, the same former Griffiss AFB employee reported to AFBCA that the terra-cotta sump investigated during the Year 2000 ESI program was not the concrete pit he was referring to in the spring of 1999. The former employee stated that he was referring to a basement room, which has since had a false floor put over it. The former employee stated there were two 150-gallon tanks outside the room and a large tank inside the room and that the pipes/fittings often leaked and soaked the entire floor of the room with oil. Based on this report, this area was designated AOI 473-Building 112 Room 10.

4.4.2 Physical Characteristics of the Site

Building 112 is located in the central industrial area of the base. The site is generally flat, with less than 5 feet of topographic relief across the site. The area surrounding Building 112 is grassed to the east and predominantly paved to the west. A substation is present on the south side of the building.

Building 112 is not located near any major surface water drainage features. Runoff from the site is channeled to the base storm water drainage system, which drains into Six Mile Creek, which, in turn, ultimately drains to the NYSBC approximately 1.5 miles south of the base.

Based on field descriptions of soils encountered in 74 borings drilled during the RI (Law 1995) and 11 borings drilled during the Year 2000 ESI, the upper 10 feet of soil at Building 112 consists of predominantly brown, silty, fine to coarse sand and gravel. Soils encountered from 10 to 20 feet BGS consisted predominantly of brown, silty, fine to coarse sand.

The groundwater zone investigated at Building 112 exists under unconfined conditions within an unconsolidated aquifer. The saturated zone in the vicinity of Building 112 was encountered at depths ranging from 4 feet BGS in well TF3MW-1 east of Building 112 to 16 feet BGS in boring 112SB-57 south of Building 112.

4.4.3 Description of Previous Studies

Four areas were investigated at Building 112 prior to the Year 2000 ESI: a drywell located east of Building 112; the southwest roof of the building; the area around the loading dock located to the southwest; and the PCB dump site located south of the building. However, none of these investigations included AOI 473.

In 1981, Griffiss AFB bioenvironmental engineers sampled site soils to determine whether PCBs were present. In 1982, soils were collected from areas next to the building and were analyzed for PCBs. PCBs were detected on the west and south sides of Building 112 and on a transformer pad on the roof. A limited groundwater investigation in the vicinity of Building 112 also identified the presence of inorganic compounds in groundwater. In 1984, a leaking transformer on the roof of Building 112 and contaminated roof materials were removed. In 1994 and early 1995, in accordance with a Federal Facility Agreement, Law performed a remedial investigation for the Building 112 AOC (Law

1996). The RI for the Building 112 AOC included collection of surface soil samples, subsurface soil samples, and a grab water sample and preparation of a baseline risk assessment. Based on the results of the baseline risk assessment, no further action was recommended at the drywell location. In 1996, E & E prepared a design analysis report to address remediation of contaminants at the Building 112 AOC (E & E 1997c). A drywell investigation for Building 112 was conducted by OHM in January 1997 (OHM 1998). Two presumed drywells were investigated. Drywell No. 1 was recommended for closure. Based on a smoke trace test, it was concluded that there was no second drywell; therefore, no further study was recommended for what was initially identified as Drywell No. 2.

In 1999, a removal action was performed to remove PCB-contaminated materials at the Building 112 AOC. The action included removal of a contaminated transformer pad from the roof, contaminated soil and a concrete retaining wall from the south side of the building, and contaminated soils from the southwest side of the building.

Extensive sampling for PCBs was performed at the south side of the building (dump area). However, prior to the Year 2000 ESI there was no sampling performed at the north side, except for a three-point composite sample collected from Drywell No. 1.

During a site visit in May 1999, E & E inspected Building 112 both inside and outside. A terra-cotta sump approximately 2 feet deep and 2 feet in diameter was discovered beneath the tile floor in the northwest corner of the basement beneath the stairway access. The terra-cotta sump had a concrete bottom. Both the sump and the concrete appeared clean and intact. Therefore sampling was not warranted in the area of the sump. There were no signs of stressed vegetation outside of the building.

In spring 2000, E & E investigated the north side of Building 112, where the waste oil was reportedly spilled (AOI 469), as part of the Year 2000 ESI program.

A sampling grid with 25-foot spacing, covering the area where PCBs were allegedly dumped, was used to collect 22 near-surface soil samples (0 to 2 inches BGS). All of the samples were analyzed for TCL SVOCs, TCL PCBs, TRPH, TAL metals, and percent solids. Also, based on the analytical results of the 22 near-surface soil samples, additional sampling of soil borings at 11 locations with elevated PCB concentrations was completed. At nine of these borings, an intermediate depth soil sample (approximately 5 to 7 feet BGS) and a deeper soil sample (immediately above the water table [approximately 10 to 14 foot BGS]) were collected. Soil boring G469-NS19 was located due east

of AOI 473-Building 112 Room 10, approximately 6 feet from the eastern exterior wall of Building 112. PCBs were detected at very low levels (0.0160J mg/kg) in the soil sample collected from immediately above the water table (12 to 13 feet BGS) and were not detected in the soil sample collected from 6 to 7 feet BGS. TRPH was not detected in either soil sample collected from boring G469-NS19. Soil samples were collected continuously from ground surface to the water table at the remaining two borings (G469-NS01 and G469-NS20). All deeper soil samples were analyzed for the same parameters as specified previously for the near-surface soil samples. The primary contaminants detected at AOI 469 are PCBs and lead.

Three PCBs were detected in the 22 near-surface soil samples collected, including Aroclor 1242, Aroclor 1254, and Aroclor 1260. Concentrations of Aroclor 1242 ranged from non-detected to 0.495 mg/kg in NS01. Concentrations of Aroclor 1254 ranged from non-detected to 1.04 mg/kg in NS01. Concentrations of Aroclor 1260 ranged from 0.0206 mg/kg to 7.12 mg/kg in NS20. None of the concentrations of Aroclor 1242 detected exceeded either NYSDEC or EPA RBC criteria values. Concentrations of Aroclor 1254 only marginally exceeded the NYSDEC criterion (1 mg/kg) in NS01 (1.02 mg/kg) and NS01/D (1.04 mg/kg). Concentrations of Aroclor 1260 exceeded the NYSDEC and EPA RBC criteria value only in NS20 (7.12 mg/kg).

Thirty-one subsurface soil samples were collected at AOI 469 from the 11 soil borings installed. Two PCBs were detected in the subsurface soil samples, including Aroclor 1254 and Aroclor 1260. Concentrations of Aroclor 1254 ranged from non-detected to 0.684 mg/kg in SS01-Z1. Concentrations of Aroclor 1260 ranged from non-detected to 12.40 mg/kg in SS20-Z1.

Concentrations of Aroclor 1260 exceeded screening criteria values in only two shallow subsurface soil samples, which were collected from soil boring G469-NS20. The concentration of Aroclor 1260 detected in SS20-Z1 (12.40 mg/kg) exceeded both NYSDEC and EPA RBC criterion value. The concentration of Aroclor 1260 in SS20-Z2 (3.88 mg/kg) exceeded EPA RBC criterion value but not the NYSDEC value. No other PCBs were detected in the subsurface soil samples above NYSDEC or EPA RBC screening criteria values.

Concentrations of lead ranged from 8.29 mg/kg in NS09 to 1,880 mg/kg in NS10 and exceeded both the NYSDEC and EPA RBC criteria values in NS10, NS14, NS16,

and NS21. No other metals exceeded EPA RBCs. An Assessment of Adult Exposure to Lead in Soil was performed due to the levels of lead detected in the near-surface soil. The assessment indicated that the levels of lead present are unlikely to pose any significant health risk to future industrial/commercial workers.

During a site visit in February 2002, E & E inspected AOI 473-Building 112 Room 10. Room 10 currently has a false floor over it (.5-inch-thick steel plate) and can be accessed through a 3-foot-square opening in the false floor, which is situated above a metal ladder. A sump pit is located near the northeast corner of the room. The sump pit has very rusty metal sides and a solid (i.e., steel or concrete) bottom. The sump pit measures two feet wide by 3.5 feet deep, and contained .85 feet of standing water and less than 0.5 inches of sludge/rust. The sump pump has been removed from the sump and is presently located on the concrete floor next to the sump. The floor and walls of the room were observed to be clean and in good condition. No significant signs of spilled oil were observed on the floor or walls of the room.

During two separate site visits in March 2002 and February 2003, E & E inspected AOI 473-Building 112 Room 10 to determine the discharge point of the sump pump observed during the previous inspection. The sump pump discharge line consisted of a flexible hose, which was coiled on the floor and extended up to the northwest ceiling of the room and then out of sight. The flexible hose was observed exiting Room 10 to the north via an up-turned elbow in a 3- inch copper pipe located approximately 1 foot from the ceiling. The 3-inch pipe was followed and found to discharge into the storm sewer line which exits Building 112 on the east side of the building, turns north, and discharges into the storm sewer paralleling Hangar Road.

4.4.4 Description of Year 2002 ESI Field Investigations

In accordance with the Final FSP (E & E 2000a), samples were collected from the sump and the floor of Room 10 in order to determine whether petroleum hydrocarbons, potentially containing PCBs, have been spilled in AOI 473-Building 112 Room 10 (see Figure 4.4-1). Four contingent subsurface soil samples were not collected from beneath the floor of Room 10 because the floor was observed to be in good condition (no cracks) during the 2002 ESI sampling.

Sampling of the sump included collection of a sludge sample from the sump and collection of a swipe sample. Nine additional swipe samples were collected from the floor of Room 10. The floor swipe samples were evenly spaced in a grid pattern as shown on Figure 4.4-1. The sludge and 10 swipe samples were analyzed for TCL SVOCs, PCBs, TRPH, and TAL metals.

The Year 2002 ESI sampling locations for AOI 473 are provided in Figure 4.4-1. A list of sample identifications and analyses is presented in Table 4.4-1.

4.4.5 Year 2002 ESI Results and Interpretation

A listing of samples collected and analyses run is presented in Table 4.4-1. All samples were subjected to a detailed screening, which is described in Section 2. Table 4.4-2 summarizes positive analytical results and applicable NYSDEC and USEPA RBC criteria for the sludge sample and Table 4.4-4 summarizes positive analytical results and the calculated RBSLs for the swipe samples. TIC analytical results are summarized in Tables 4.4-3 and 4.4-5. A complete analytical data summary for each sample is presented in Appendix A, and QC evaluations are included in the QCSR for the Year 2002 ESI (E & E 2002b). Analytical results are discussed below.

Sludge

Organics. One sludge sample (G473-Rm10-SD01) was collected at AOI 473 from the sump and analyzed for TCL SVOCs, PCBs, TRPH, and TAL metals (see Table 4.4-1). The sludge sample consisted almost entirely of rust. An insufficient volume (i.e., less than 0.5 inches deep) of sludge/rust was present in the sump pit to allow for the collection of the QC samples which were also planned. Positive results and screening are summarized in Table 4.4-2.

One PCB (Aroclor 1260) was detected at a laboratory estimated concentration of 0.473 mg/Kg. The detected concentration of total PCBs did not exceed NYSDEC screening criteria for total PCBs and USEPA RBCs for soils (see Table 4.4-2).

Fifteen SVOCs, all PAHs, were detected in the sludge sample. Four of these PAHs, including benz(a)anthracene (1,140 µg/Kg estimated), benzo(a)pyrene (810 µg/Kg estimated), benzo(k)fluoranthene (1,160 µg/Kg estimated), and chrysene (1,130 µg/Kg

estimated) were detected at levels exceeding the NYSDEC screening criteria (see Table 4.4-2). Additionally, benzo(a)pyrene also exceeded the USEPA RBC. Overall, the concentrations of PAHs found in the sludge are similar to those in urban areas near traffic or other fossil-fuel combustion sources (USDOH&HS 1993), and are also similar to those commonly found in surface soils at Griffiss AFB.

Nineteen semivolatile TICs were detected in the sludge sample (see Table 4.4-3). Two of these TICs, 2-pentanone, 4-hydroxy-4-methyl and (E)-4,8-dimethyl-3,8-nonadien-2-one, were found at estimated concentrations that exceed the screening value of 50 ppm for individual SVOCs. Due to the high concentrations (1,120 ppm) of the (E)-4,8-dimethyl-3,8-nonadien-2-one TIC, the total SVOC concentration of 1,234 ppm exceeds the NYSDEC TAGM of 500 ppm for total semivolatiles.

Inorganics. Twenty-one metals were detected in the sludge sample (see Table 4.4-2). Sixteen of these metals were detected at concentrations above NYSDEC screening criteria. These included antimony, arsenic, barium, cadmium, calcium, chromium, copper, iron, lead, mercury, nickel, potassium, silver, sodium, thallium, and zinc. Only lead and arsenic were detected at concentrations (12,200 mg/Kg and 19.1 mg/Kg, respectively), were found to exceed both NYSDEC screening criteria and USEPA RBCs.

Petroleum Hydrocarbons. TRPH was detected in only the sludge sample at a concentration of 8,710 mg/Kg (see Table 4.4-2).

Swipes

Organics. Ten swipe samples and one duplicate were collected and analyzed for TCL SVOCs and PCBs, TAL metals and mercury, and TRPH (see Table 4.4-3). No analytes were detected at levels exceeding screening criteria values (see Table 4.4-4). Low levels of three PCBs (Aroclor 1242, 1254, and Aroclor 1260) were detected in four wipe samples (G473-RM10-SP01, -SP02, -SP03, and -SP06). No PCBs were detected at concentrations exceeding the RBSL of 6 µg/wipe.

Two SVOCs, benzyl alcohol and bis(2-ethylhexyl)phthalate were detected in the swipe samples. Samples G473-RM10-SP05 and -SP09 did not contain any SVOCs. Concentrations of the two SVOCs did not exceed the screening levels in any of the samples. Additionally, 110 semivolatile TICs (including some hydrocarbon related TICs) were detected in at least one wipe sample (see Table 4.4-5).

Inorganics. Twenty-two metals were detected in swipe samples (see Table 4.4-4). All detected metals concentrations were below the screening levels. Lead concentrations were slightly elevated in samples G473-RM10-SP01, -SP01/D, and -SP10; elevated copper levels were found in SP10, and iron in SP02 and SP05.

Petroleum Hydrocarbons. TRPH was detected in all the samples at concentrations ranging from 879 mg/Kg (estimated) in SP01/D to 7,260 mg/Kg in SP06 (see Table 4.4-4).

4.4.6 Conclusions and Recommendations

Eleven (including one duplicate) swipe samples and one sludge sample (collected from the sump) were analyzed for TCL SVOCs and PCBs, TRPH, and TAL metals. Four contingent subsurface soil samples were not collected from beneath the floor of Room 10 because the floor was observed to be in good condition (no cracks) during the 2002 ESI sampling.

Three PCBs were detected in the samples (Aroclor 1242, Aroclor 1254, and Aroclor 1260) at concentrations below screening criteria. The swipes samples contained several metals, TRPH, and two SVOCs. However, none of these detections exceeded the screening levels.

Levels of four SVOCs and 16 metals detected in the sludge sample collected from the sump were found to exceed state or federal standards. Additionally, the total SVOC concentration exceeded the NYSDEC maximum concentration of 500 ppm. However, the standing water and sludge is contained within the sump pump pit, appears stagnant and does not appear to be leaking into the ground beneath Building 112. The sump pump has been removed from the sump pump pit and Building 112 is currently restricted from use.

Based on these findings and on the planned industrial use of this site (USAF 1995), it is recommended that the water and small amount of remaining sludge within the Room 10 floor drain be removed, and the sump pump pit be decontaminated.

Table 4.4-1 Sample Listing, Building 112 AOI 473-Room 10 Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

								ANALYSES				
Location	Date	Sample Number	Lab	Matrix	WP	Stat	Type	TCL PCBs 8082	% Solids ASTM_D2216	TCL SVOC SW8270C	TRPH 418.1M	TAL Metals SW6010B/7471A
AOI 473-Room 10	07/17/02	G473-Rm10-SD01	ASC	Sediment	Y	T	N1	X	X	X	X	X
		G473-Rm10-SD01/D	ASC	Sediment	Y	S	FD1	X	X	X	X	X
		G473-Rm10-SD01/S	ERDC	Sediment	Y	S	FR1	X	X	X	X	X
		G473-Rm10-SD01 (extra volume)	ASC	Sediment (MS/MSD)	Y	S	MS1	X	X	X	X	X
	07/17/02	G473-Rm10-SP01	ASC	Swipe	Y	T	N1	X		X	X	X
	07/17/02	G473-Rm10-SP01/D	ASC	Swipe	Y	T	FD1	X		X	X	X
	07/17/02	G473-Rm10-SP01/S	ERDC	Swipe	Y	T	FR1	X		X	X	X
	07/17/02	G473-Rm10-SP02	ASC	Swipe	Y	T	N1	X		X	X	X
	07/17/02	G473-Rm10-SP02 (extra volume)	ASC	Swipe (MS/MSD)	Y	T	MS1	X		X	X	X
	07/17/02	G473-Rm10-SP03	ASC	Swipe	Y	T	N1	X		X	X	X
	07/17/02	G473-Rm10-SP04	ASC	Swipe	Y	T	N1	X		X	X	X
	07/17/02	G473-Rm10-SP05	ASC	Swipe	Y	T	N1	X		X	X	X
	07/17/02	G473-Rm10-SP06	ASC	Swipe	Y	T	N1	X		X	X	X
	07/17/02	G473-Rm10-SP07	ASC	Swipe	Y	T	N1	X		X	X	X
	07/17/02	G473-Rm10-SP08	ASC	Swipe	Y	T	N1	X		X	X	X
	07/17/02	G473-Rm10-SP09	ASC	Swipe	Y	T	MS1	X		X	X	X
	07/17/02	G473-Rm10-SP10	ASC	Swipe	Y	T	N1	X		X	X	X
	07/17/02	FIELDQC-FB473-Rm10-SP1	ASC	Swipe	Y	T	FB1	X		X	X	X
		G473-Rm10-SS01	ASC	Subsurface soil	Y	S	**N1	X	X	X	X	X
		G473-Rm10-SS01/D	ASC	Subsurface soil	Y	S	**FD1	X	X	X	X	X
		G473-Rm10-SS01/S	ASC	Subsurface soil	Y	S	**FR1	X	X	X	X	X
		G473-Rm10-SS01 (extra volume)	ASC	Subsurface soil	Y	S	**MS1	X	X	X	X	X
		G473-Rm10-SS02	ASC	Subsurface soil	Y	S	**N1	X	X	X	X	X
		G473-Rm10-SS03	ASC	Subsurface soil	Y	S	**N1	X	X	X	X	X
		G473-Rm10-SS04	ASC	Subsurface soil	Y	S	**N1	X	X	X	X	X
		FIELDQC-RB473-Rm10-SS1	ASC	Eqpt. Washwater	Y	S	**RB1	X		X	X	X

Key:

AOI = Area of Interest.
ASC = E & E's Analytical Services Center.
ASTM = American Society for Testing and Materials.
/D = Duplicate sample.
Depth = Depth interval at which sample will be collected.
ERDC = U.S. Army Engineer Research and Development Center Quality Assurar
ESI = Expanded Site Investigation.
Eqpt.= Equipment Washwater.
FB= Field blank sample.
FD = Field duplicate.
FR = Field split/replicate.
MS/MSD = Matrix spike/matrix spike duplicate.
N = Original sample.
QC = Quality control.
PCB = Polychlorinated biphenyl.
RB = Rinsate blank sample.
/S = Split sample.
SD = Sediment.
SP = Swipe sample.
SS = Subsurface soil sample.
Stat = Status (O= Open, T= Taken, S= Skipped).
SVOC = Semivolatile organic compound.
TAL = Target analyte list.
TCL = Target Compound List.
TCLP = Toxicity Characteristic Leaching Procedure
TRPH = Total recoverable petroleum hydrocarbons.
VOC = Volatile organic compound.
WP = Sample in work plan (Y= yes, N= no).
** = Provisional samples collected only if cracks were observed in floor.

Table 4.4-2
Summary of Positive Analytical Results for the Sludge Sample, AOI 473 Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	NYSDEC TAGM 4046 [1]	EPA RBCs - Industrial [2]	Sample ID: G473-RM10-SD01 Date: 07/17/02
PCBs by Method 8082 (mg/Kg)			
Aroclor 1260	1	2.9	0.473 J
Semivolatile organics by Method 8270C (µg/Kg)			
Acenaphthene	50,000	120,000,000	181 J
Anthracene	50,000	610,000,000	660 J
Benz(a)anthracene	224	7,800	1140 J
Benzo(a)pyrene	61	780	810 J
Benzo(b)fluoranthene	1,100	7,800	897 J
Benzo(g,h,i)perylene	50,000	NA	392 J
Benzo(k)fluoranthene	1,100	78,000	1160 J
Chrysene	400	780,000	1130 J
Dibenzofuran	6,200	8,200,000	68.0 J
Fluoranthene	50,000	82,000,000	1690 J
Fluorene	50,000	82,000,000	190 J
Indeno(1,2,3-cd)pyrene	3,200	7,800	227 J
Naphthalene	13,000	41,000,000	101 J
Phenanthrene	50,000	NA	2210 J
Pyrene	50,000	61,000,000	1440 J
Metals/Mercury by Method 6010B7471A (mg/Kg)			
Aluminum	18,306	2,000,000	5530
Antimony	3.4	820	28.2
Arsenic	4.9	3.8	19.1 J
Barium	71	140,000	190
Cadmium	1.1	1,000	15.9 J
Calcium	23,821	NA	148000
Chromium	22.6	6,100	42.5 J
Cobalt	30	41,000	8.36 J
Copper	43	82,000	1370
Iron	47,350	610,000	114000
Lead	200	400	12200
Magnesium	7,175	NA	4070
Manganese	2,106	41,000	801
Mercury	0.1	NA	3.60
Nickel	46	41,000	58.4
Potassium	1,993	NA	3680
Silver	1.1	10,000	18.6 J
Sodium	259	NA	716 J
Thallium	0.45	140	27.9 J
Vanadium	150	14,000	12.0 J
Zinc	120	610,000	2340
TRPH by Method 418.1M (mg/Kg)			
Petroleum Hydrocarbons	NA	NA	8710

Key at the end of Table.

Table 4.4-2
Summary of Positive Analytical Results for the Sludge Sample, AOI 473 Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

(1) New York State Department of Environmental Conservation, Technical and Administrative Guidance Memorandum #4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1994.

(2) Environmental Protection Agency Region III Risk-based concentration for industrial soil, April 2002.

Note: For a complete list of the screening criteria see Section 2.

Key:

AOI =	Area of Interest.
EPA =	Environmental Protection Agency.
ESI =	Expanded Site Investigation.
J =	Estimated value.
mg/Kg =	Milligrams per kilogram.
µg/Kg =	Micrograms per kilogram
NA =	No criteria available.
NYSDEC =	New York State Department of Environmental Conservation.
PCBs =	Polychlorinated biphenyls.
RBC =	Risk-based concentration.
SD =	Sludge sample.
TAGM =	Technical and Administrative Guidance Memorandum
TRPH =	Total recoverable petroleum hydrocarbons.
1140 J	Result above NYSDEC screening criteria (shaded and bolded).
19.1 J	Result above both NYSDEC screening criteria and EPA RBCs (shaded, bolded, and underlined).

Table 4.4-3
Summary of Tentatively Identified Compound Results for the Sludge Sample, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	Match Quality	Sample ID: Date:	G473-RM10-SD01 07/17/02
Semivolatile Organics by Method 8270C (µg/Kg)			
Unknown	0		130 NJ
Stigmastan-3,5-dien	91		10600 NJ
Heptadecane, 2,6,10,15-tetramethyl-	80		184 NJ
Decahydro-9-ethyl-4,4,8,10-tetramethylna	91		3990 NJ
Decahydro-4,4,8,9,10-pentamethylnaphthal (15.657)	93		835 NJ
Decahydro-4,4,8,9,10-pentamethylnaphthal (15.248)	62		194 NJ
BENZENE, 1,3-BIS(DIMETHYLAMINO)-	43		161 NJ
Acridine, 9-methyl-	50		4830 NJ
4,4´-Difluorobiphenyl	60		111 NJ
3-Hydroxy-3-methyl-2-butanone	53		319 NJ
3,8-Nonadien-2-one, (E)-	22		827 NJ
3,5-Octadiene, 4,5-diethyl-3,6-dimethyl-	70		267 NJ
2-UNDECENE, 4,5-DIMETHYL-, CIS-, THREO-	45		7960 NJ
2-Pentanone, 4-hydroxy-4-methyl-	50		64400 NJ
2-Hexanone, 4-hydroxy-5-methyl-	72		976 NJ
2-Heptanone	25		6030 NJ
2,5,5,6,1a-Pentamethyl-cis-1a,4a,5,6,7,8	58		252 NJ
1,4-Hexadiene, 2,3,4,5-tetramethyl-	53		136 NJ
(E)-4,8-Dimethyl-3,8-nonadien-2-one	52		1120000 NJ

Note: Results are reported as total for similar tentatively identified compounds.

Key:

AOI = Area of Interest.
ESI = Expanded Site Investigation.
µg/Kg = Micrograms per kilogram.
NJ = Identification not confirmed, estimated value.
SD = Sludge sample.

Table 4.4-4
Summary of Positive Analytical Results for Wipe Samples, AOI 473 2002 ESI,
Former Griffiss Air Force Base, Rome, New York

Analyte	Screening Criteria [1]	Sample ID:	FIELDQC-FB473-RM10-SP1	G473-RM10-SP01	G473-RM10-SP01/D	G473-RM10-SP02	G473-RM10-SP03	G473-RM10-SP04	G473-RM10-SP05
		Date:	07/17/02	07/17/02	07/17/02	07/17/02	07/17/02	07/17/02	07/17/02
PCBs by Method 8082 (µg/wipe)									
Aroclor 1242	6		NS	1.50 U	1.50 U	2.09	2.01	1.50 U	1.50 U
Aroclor 1254	6		NS	1.73	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U
Aroclor 1260	6		NS	1.50 U	1.50 U	1.58	1.62	1.50 U	1.50 U
SVOCs by Method 8270C (µg/wipe)									
Benzyl alcohol	500,000		10.0 U	5.45 J	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Bis(2-ethylhexyl)phthalate	600		10.0 U	14.3 J	17.8 J	10.4 J	6.64 J	168 J	10.0 U
Metals/Mercury by Method 6010B/7471A (µg/wipe)									
Aluminum	2,000,000,000		12.4	9170 J	4190 J	3320	2850	9180	1650
Antimony	30,000		1.81	5.38 U	7.15 U	50.0 U	10.0 U	10.0 U	10.0 U
Arsenic	40		1.00 U	5.54	5.00 U	50.0 U	10.0 U	8.99 J	10.0 U
Barium	20,000,000		1.25 J	134 J	73.4 J	57.6 J	101	155	53.1
Beryllium	70,000,000		0.500 U	0.654 J	2.50 U	25.0 U	5.00 U	5.00 U	5.00 U
Cadmium	300,000		0.500 U	26.6 J	15.8 J	11.2 J	18.3	21.0	101
Calcium	NA		462	79200 J	38000 J	25300	29100	102000	15700
Chromium	20,000,000		1.00 U	93.9 J	28.4 J	75.6	26.7	57.1	17.1
Cobalt	100,000		2.00 U	13.4	5.60 J	9.75 J	5.44 J	10.4 J	3.99 J
Copper	60,000		0.974 J	283 J	123 J	335	100	86.1	94.9
Iron	50,000,000		20.4	81100 J	34600 J	314000	87000	45900	128000
Lead	70,000		2.29	2780 J	1170 J	539	571	461	327
Magnesium	NA		164	3980 J	1840 J	1420 J	1860	5150	1030
Manganese	20,000,000		1.88	5030 J	1640 J	1020	259	410	315
Mercury	1,000,000		0.0200 U	20.1	21.9	124	67.4	45.5	35.3
Nickel	20,000,000		2.00 U	83.9 J	31.6 J	139	22.0	30.0	158
Potassium	NA		49.0 J	4980 J	2280 J	23100	29000	56700	7070
Silver	5,000,000		1.00 U	32.5 J	5.87 J	50.0 U	3.42 J	5.94 J	2.23 J
Sodium	NA		1550	1160 U	679 U	7840	14400	28600	2650 U
Thallium	100		0.765 J	14.8 J	7.97 J	21.7 J	6.16 J	12.1	6.38 J
Vanadium	20,000,000		2.00 U	26.0 J	12.7 J	65.0 J	26.4	31.3	13.8 J
Zinc	500,000		4.26	1680 J	713 J	1010	639	1320	428
TRPH by Method 418.1M (mg/wipe)									
Petroleum Hydrocarbons	NA		NS	1650 J	879 J	3020	5580	4850	3970

Table 4.4-4
Summary of Positive Analytical Results for Wipe Samples, AOI 473 2002 ESI,
Former Griffiss Air Force Base, Rome, New York

Analyte	Screening Criteria [1]	Sample ID: Date:	G473-RM10-SP06 07/17/02	G473-RM10-SP07 07/17/02	G473-RM10-SP08 07/17/02	G473-RM10-SP09 07/17/02	G473-RM10-SP10 07/17/02
PCBs by Method 8082 (µg/wipe)							
Aroclor 1242	6		0.402 J	4.50 U	1.50 U	1.50 U	1.50 U
Aroclor 1254	6		1.50 U	4.50 U	1.50 U	1.50 U	1.50 U
Aroclor 1260	6		1.50 U	4.50 U	1.50 U	1.50 U	1.50 U
SVOCs by Method 8270C (µg/wipe)							
Benzyl alcohol	500,000		10.0 U	10.0 U	10.0 U	10.0 U	4.37 J
Bis(2-ethylhexyl)phthalate	600		10.0 U	189 J	2.88 J	10.0 U	5.32 J
Metals/Mercury by Method 6010B/7471A (µg/wipe)							
Aluminum	2,000,000,000		1980	2600	2420	2500	5170
Antimony	30,000		5.00 U	6.75 U	2.70 U	5.00 U	11.6 J
Arsenic	40		5.00 U	2.48 J	0.671 J	5.00 U	25.0 U
Barium	20,000,000		100	95.9	180	87.3	130
Beryllium	70,000,000		2.50 U	2.50 U	1.00 U	2.50 U	12.5 U
Cadmium	300,000		9.73	12.1	14.6	19.2	17.8
Calcium	NA		20400	21300	18300	13600	55800
Chromium	20,000,000		14.1	19.5	15.7	22.9	37.3
Cobalt	100,000		1.99 J	3.56 J	3.13 J	18.3	50.0 U
Copper	60,000		1720	45.1	80.6	192	41500
Iron	50,000,000		35800	7790	12900	9510	19500
Lead	70,000		405	208	258	188	1910
Magnesium	NA		1340	1650	1250	1160	4490
Manganese	20,000,000		127	95.3	77.7	81.5	197
Mercury	1,000,000		29.0	14.9	25.9	14.2	0.576
Nickel	20,000,000		13.1	8.93 J	9.38	20.7	23.3 J
Potassium	NA		18200	37000	11100	3670	32500
Silver	5,000,000		1.39 J	3.93 J	15.5	1.81 J	5.74 J
Sodium	NA		7310 U	17200	4350 U	1220 U	11600
Thallium	100		4.76 J	5.00 U	2.45 U	5.00 U	11.4 J
Vanadium	20,000,000		9.69 J	8.79 J	6.27	4.20 J	15.5 J
Zinc	500,000		394	372	448	346	1560
TRPH by Method 418.1M (mg/wipe)							
Petroleum Hydrocarbons	NA		7260	7190	1960	4820	3020

Table 4.4-4
Summary of Positive Analytical Results for Wipe Samples, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Note: Shaded and bolded results exceed the calculated risk based screening levels.

(1) Screening criteria for the wipe samples were developed in a manner similar to a method that was used by EPA to develop the TSCA screening criteria for PCBs, based on potential cancer risk from dermal exposure, presented in a 1986 memorandum.

Key:

AOI = Area of Interest.
EPA = Environmental Protection Agency.
ESI = Expanded Site Investigation.
FIELDQC-FB = Field blank.
J = Estimated value.
mg/wipe = Milligrams per wipe.
µg/wipe = Micrograms per wipe.
NA = No criteria available.
NS = Not sampled.
PCBs = Polychlorinated biphenyls.
SP = Wipe sample.
SVOCs = Semivolatile organic compounds.
TRPH = Total recoverable petroleum hydrocarbons.
TSCA =
U = Not detected (practical quantitation limit listed).

Table 4.4-5
Summary of Tentatively Identified Compound Results for Wipe Samples, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	Match Quality	Sample ID: Date:	FIELDQC-FB473-RM10-SP1 07/17/02	G473-RM10-SP01 07/17/02	G473-RM10-SP01/D 07/17/02
Semivolatile Organics by Method 8270C (µg/wipe)					
Unknown	0		13.7 NJ	NF	NF
Tritetracontane	91		NF	NF	NF
Triethylene glycol	78		NF	NF	NF
Tricosane	93		NF	NF	NF
Triallylsilane	52		NF	NF	NF
TRAPEZIFOLIXANTHONE DIMETHYL ETHER	35		NF	NF	NF
Tetratriacontane	90		NF	NF	NF
Tetratetracontane	87		NF	NF	NF
Tetradecane, 1-bromo-	70		NF	NF	NF
Tetracosane	93		NF	76 NJ	NF
Squalene	86		NF	NF	NF
Propane, 1-(1-methylethoxy)-	38		NF	NF	NF
Phthalic anhydride (13.985)	96		NF	NF	NF
Phenol, 4,4´-butylidenebis(2-(1,1-dimeth	91		NF	NF	124.4 NJ
Phenol, 4-(1-phenylethyl)-	83		NF	NF	NF
Phenol, 2,4-bis(1-phenylethyl)-	70		NF	NF	NF
Pentatriacontane	91		NF	NF	NF
Pentadecane, 8-hexyl-	91		NF	NF	NF
PENTADECANE, 2,6,10-TRIMETHYL-	43		21.4 NJ	NF	NF
Pentadecane, 2,6,10,14-tetramethyl-	94		NF	NF	NF
Pentacosane	95		NF	165.8 NJ	NF
Octanoic Acid	72		NF	NF	NF
Octadecane, 1-bromo-	64		NF	NF	NF
Octadecane	87		NF	NF	NF
Octacosane (23.243)	72		12.76 NJ	NF	NF
Octacosane	96		NF	NF	NF
Nonadecane	96		NF	NF	NF
Nonacosane	96		NF	NF	NF
n-Decanoic acid	64		NF	NF	NF
Naphthalene, 1,6-dimethyl-4-(1-methyleth	72		NF	NF	NF
Hexatriacontane	90		NF	NF	NF
Hexanoic acid, 2-methyl-	43		NF	NF	NF
Hexadecane, 2-methyl-	93		NF	NF	NF
Hexadecane, 2,6,11,15-tetramethyl-	90		NF	NF	NF
Hexadecane, 2,6,10,14-tetramethyl-	90		NF	NF	NF
Hexadecane	93		NF	NF	NF
Hexacosane	93		NF	40.4 NJ	NF
Heptanoic acid, methyl ester	25		NF	NF	NF
Heptane, 2,2,3,3,5,6,6-heptamethyl-	28		NF	NF	7.18 NJ
Heptadecane, 9-octyl-	93		NF	NF	NF
Heptadecane	83		46.2 NJ	89.8 NJ	NF
Heptacosane, 1-chloro-	50		44.8 NJ	NF	NF
Heptacosane	91		NF	14.08 NJ	NF
Heneicosane	95		NF	NF	NF
HAHNFETT	87		NF	NF	NF
Furan, tetrahydro-3,4-dimethyl-, cis-	18		NF	NF	NF
Ether, heptyl hexyl	34		NF	9.38 NJ	NF
Ethanol, 2,2´-oxybis-	64		NF	NF	NF
Ethanol, 2,2´-(oxybis(2,1-ethanediyloxy)	78		NF	NF	NF
Ethanol, 2,2´-(1,2-ethanediylbis(oxy))bi	38		NF	NF	NF

Table 4.4-5
Summary of Tentatively Identified Compound Results for Wipe Samples, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	Match Quality	Sample ID: Date:	FIELDQC-FB473-RM10-SP1 07/17/02	G473-RM10-SP01 07/17/02	G473-RM10-SP01/D 07/17/02
Eicosane, 10-methyl-	93		NF	142.6 NJ	NF
Eicosane	89		14.12 NJ	NF	NF
E-8-Methyl-9-tetradecen-1-ol acetate	52		NF	NF	NF
d-Ribonic acid, _gamma_-lactone, cyclic	59		NF	NF	NF
Dotriacontane	91		NF	NF	NF
Docosane	93		NF	108 NJ	NF
Decane, 1,1´-oxybis-	18		15.3 NJ	NF	NF
Decane	52		11.8 NJ	NF	NF
Cyclopentane, 1,2,3-trimethyl-, (1_alpha	43		NF	NF	NF
CYCLOPENTANCARBONIC ACID, 3-METHYL-, MET	25		NF	NF	NF
Cyclohexanemethanol, 2-methyl-	43		NF	NF	NF
Cyclohexane, undecyl-	53		20 NJ	NF	NF
Cyclohexane, decyl-	76		NF	NF	NF
Cyclohexane, 1-ethyl-4-methyl-, cis-	38		NF	NF	NF
CAPRONIC ACID, OCTYL ESTER	18		NF	46.2 NJ	NF
Bicyclo(3_1_1)heptane, 2,6,6-trimethyl-,	60		NF	NF	NF
Bicyclo(3_1_0)hexan-2-one, 4-methyl-1-(1	68		NF	NF	NF
Benzothiazole	91		NF	NF	6.64 NJ
Benzenethiol, 2-amino-	64		NF	10.66 NJ	NF
8-Nonenoic acid	17		NF	NF	NF
7-Octynoic acid, methyl ester	17		NF	NF	7.42 NJ
6-METHYL-6-(5´METHYL-2´-FURYL)HEPTA-2,3-	43		NF	NF	NF
4-Cyanocyclohexene	99		NF	78 NJ	17.16 NJ
4-Chloro-3-n-hexyltetrahydropyrane	60		NF	3980 NJ	NF
4-Benzylamino-1,3-diphenyl-5,6,7,8-tetra	74		NF	NF	NF
4,8,12-Trimethyltridecan-4-olide	90		10.12 NJ	NF	NF
4,5-DIDEUTERO ISOTHIAZOLE	27		NF	NF	NF
4(5)-METHYL-5(4)-NITROIMIDAZOLE	38		NF	NF	NF
3-Pentanol, 2-methyl-	53		NF	10.84 NJ	NF
3-Methyl-2-butyl acetate	42		36.6 NJ	NF	21.6 NJ
3-Hydroxy-3-methyl-2-butanone	50		NF	NF	10.04 NJ
3-HEXEN-2-ONE, 3-CYCLOHEXYL-4-ETHYL-	43		NF	NF	NF
2-Pentenoic acid, 4-methylphenyl ester	22		NF	NF	6.38 NJ
2-Pentanone, 4-hydroxy-4-methyl-	23		2620 NJ	2440 NJ	2283.8 NJ
2-Octanone	47		NF	NF	7.44 NJ
2-Hexene, 1-(1-ethoxyethoxy)-, (Z)-	35		22 NJ	NF	NF
2-Hexanone, 4-hydroxy-5-methyl-	50		NF	29.8 NJ	NF
2-Heptanone	23		248 NJ	210 NJ	NF
2H-1,3-Benzoxazine, 6-chloro-3-cyclohexy	35		NF	NF	NF
2-Furanmethanol	14		15.44 NJ	NF	NF
2-Butanone, 3-hydroxy-3-methyl-	33		NF	NF	NF
2-Butanol, 3-methyl-, acetate	50		NF	NF	NF
2-Acetylthiazole	32		NF	NF	NF
2,6,10-Dodecatrien-1-ol, 3,7,11-trimethy	68		NF	NF	160 NJ
2,4-Hexadiene	35		NF	NF	NF
2,4,6-Tris-(1-phenylethyl)-phenol	38		NF	63.66 NJ	175.04 NJ
2,2´-Bi-1,3-dioxolane	35		26.6 NJ	NF	NF
1-Tetradecanol	38		NF	NF	NF
1H-Isoindole-1,3(2H)-dione, 3a,6,7,7a-te	11		14.12 NJ	NF	NF
1-Bromo-3-(2-bromoethyl)heptane	52		NF	NF	6140 NJ
17-Pentatriacontene	43		16.16 NJ	NF	NF
10-Methylnonadecane	91		NF	63.2 NJ	NF

Table 4.4-5
Summary of Tentatively Identified Compound Results for Wipe Samples, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	Match Quality	Sample ID: Date:	FIELDQC-FB473-RM10-SP1 07/17/02	G473-RM10-SP01 07/17/02	G473-RM10-SP01/D 07/17/02
1,4-Hexadiene, 2-methyl-	38		NF	NF	NF
1,4-Benzenediol, 2,5-bis(1,1-dimethylpro	83		NF	NF	NF
1,3-Hexadiene, 3-ethyl-2-methyl-, (Z)-	25		NF	NF	NF
1,3-DIOXANE, 6-ACETOXY-2,4-DIMETHYL-	22		11.1 NJ	NF	NF
1,2-Ethanediamine, N-methyl-	35		NF	NF	7.78 NJ
1,2-Benzenedicarboxylic acid, bis(2-ethy	25		15.74 NJ	NF	NF
1,2,3,4-Tetrahydronaphthalene-d12	70		NF	NF	NF
(Z)-Methyl-5-((E)-3-(1-ethoxyethoxy)oct-	43		7.84 NJ	NF	NF

Note: Results are reported as total for similar tenatively identified compounds.

Key:

AOI = Area of Interest.
ESI = Expanded Site Investigatio
µg/wipe = Micrograms per wipe.
NF = Not found.
NJ = Identification not confirm
SP = Wipe sample.

Table 4.4-5
Summary of Tentatively Identified Compound Results for Wipe Samples, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	Match Quality	Sample ID: Date:	G473-RM10-SP02 07/17/02	G473-RM10-SP03 07/17/02	G473-RM10-SP04 07/17/02
Semivolatile Organics by Method 8270C (µg/wipe)					
Unknown	0		NF	NF	NF
Tritetracontane	91		NF	NF	NF
Triethylene glycol	78		NF	NF	28.8 NJ
Tricosane	93		NF	22.6 NJ	26.8 NJ
Triallylsilane	52		NF	NF	NF
TRAPEZIFOLIXANTHONE DIMETHYL ETHER	35		NF	NF	NF
Tetratriacontane	90		NF	NF	NF
Tetratetracontane	87		NF	NF	NF
Tetradecane, 1-bromo-	70		NF	NF	NF
Tetracosane	93		NF	NF	43 NJ
Squalene	86		NF	NF	NF
Propane, 1-(1-methylethoxy)-	38		NF	NF	NF
Phthalic anhydride (13.985)	96		NF	NF	NF
Phenol, 4,4´-butylidenebis(2-(1,1-dimeth	91		NF	13.58 NJ	36.2 NJ
Phenol, 4-(1-phenylethyl)-	83		NF	NF	NF
Phenol, 2,4-bis(1-phenylethyl)-	70		NF	NF	NF
Pentatriacontane	91		NF	NF	NF
Pentadecane, 8-hexyl-	91		NF	NF	NF
PENTADECANE, 2,6,10-TRIMETHYL-	43		NF	NF	NF
Pentadecane, 2,6,10,14-tetramethyl-	94		NF	NF	NF
Pentacosane	95		NF	NF	NF
Octanoic Acid	72		NF	NF	NF
Octadecane, 1-bromo-	64		NF	NF	NF
Octadecane	87		NF	NF	NF
Octacosane (23.243)	72		NF	NF	NF
Octacosane	96		98.6 NJ	NF	NF
Nonadecane	96		NF	NF	NF
Nonacosane	96		78.2 NJ	NF	NF
n-Decanoic acid	64		NF	NF	NF
Naphthalene, 1,6-dimethyl-4-(1-methyleth	72		NF	NF	NF
Hexatriacontane	90		125.4 NJ	NF	NF
Hexanoic acid, 2-methyl-	43		NF	NF	NF
Hexadecane, 2-methyl-	93		NF	NF	NF
Hexadecane, 2,6,11,15-tetramethyl-	90		NF	NF	NF
Hexadecane, 2,6,10,14-tetramethyl-	90		NF	NF	NF
Hexadecane	93		NF	NF	NF
Hexacosane	93		29 NJ	36 NJ	76 NJ
Heptanoic acid, methyl ester	25		NF	NF	191.8 NJ
Heptane, 2,2,3,3,5,6,6-heptamethyl-	28		NF	10.7 NJ	NF
Heptadecane, 9-octyl-	93		NF	NF	NF
Heptadecane	83		NF	NF	NF
Heptacosane, 1-chloro-	50		NF	NF	NF
Heptacosane	91		NF	96.8 NJ	NF
Heneicosane	95		NF	17.86 NJ	161.2 NJ
HAHNFETT	87		NF	NF	3480 NJ
Furan, tetrahydro-3,4-dimethyl-, cis-	18		NF	8.9 NJ	NF
Ether, heptyl hexyl	34		9.98 NJ	NF	NF
Ethanol, 2,2´-oxybis-	64		NF	NF	NF
Ethanol, 2,2´-(oxybis(2,1-ethanediyloxy)	78		5.9 NJ	NF	NF
Ethanol, 2,2´-(1,2-ethanediylbis(oxy))bi	38		NF	NF	NF

Table 4.4-5
Summary of Tentatively Identified Compound Results for Wipe Samples, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	Match Quality	Sample ID: Date:	G473-RM10-SP02 07/17/02	G473-RM10-SP03 07/17/02	G473-RM10-SP04 07/17/02
Eicosane, 10-methyl-	93		NF	NF	NF
Eicosane	89		NF	NF	NF
E-8-Methyl-9-tetradecen-1-ol acetate	52		NF	NF	NF
d-Ribonic acid, _gamma_-lactone, cyclic	59		NF	NF	NF
Dotriacontane	91		NF	NF	NF
Docosane	93		NF	11.88 NJ	NF
Decane, 1,1´-oxybis-	18		NF	NF	NF
Decane	52		NF	NF	NF
Cyclopentane, 1,2,3-trimethyl-, (1_alpha	43		NF	NF	NF
CYCLOPENTANCARBONIC ACID, 3-METHYL-, MET	25		NF	NF	12.6 NJ
Cyclohexanemethanol, 2-methyl-	43		34.6 NJ	NF	NF
Cyclohexane, undecyl-	53		NF	NF	NF
Cyclohexane, decyl-	76		NF	NF	NF
Cyclohexane, 1-ethyl-4-methyl-, cis-	38		NF	NF	228 NJ
CAPRONIC ACID, OCTYL ESTER	18		NF	NF	NF
Bicyclo(3_1_1)heptane, 2,6,6-trimethyl-,	60		NF	NF	NF
Bicyclo(3_1_0)hexan-2-one, 4-methyl-1-(1	68		4260 NJ	1228 NJ	NF
Benzothiazole	91		NF	8.44 NJ	45.4 NJ
Benzenethiol, 2-amino-	64		NF	NF	NF
8-Nonenoic acid	17		NF	NF	NF
7-Octynoic acid, methyl ester	17		NF	NF	NF
6-METHYL-6-(5´METHYL-2´-FURYL)HEPTA-2,3-	43		NF	NF	NF
4-Cyanocyclohexene	99		33.8 NJ	39.6 NJ	39 NJ
4-Chloro-3-n-hexyltetrahydropyrane	60		NF	NF	NF
4-Benzylamino-1,3-diphenyl-5,6,7,8-tetra	74		NF	NF	NF
4,8,12-Trimethyltridecan-4-olide	90		NF	NF	NF
4,5-DIDEUTERO ISOTHIAZOLE	27		NF	NF	NF
4(5)-METHYL-5(4)-NITROIMIDAZOLE	38		NF	NF	19.58 NJ
3-Pentanol, 2-methyl-	53		NF	NF	NF
3-Methyl-2-butyl acetate	42		NF	NF	NF
3-Hydroxy-3-methyl-2-butanone	50		NF	NF	NF
3-HEXEN-2-ONE, 3-CYCLOHEXYL-4-ETHYL-	43		NF	NF	NF
2-Pentenoic acid, 4-methylphenyl ester	22		NF	NF	NF
2-Pentanone, 4-hydroxy-4-methyl-	23		2220 NJ	2040 NJ	2840 NJ
2-Octanone	47		NF	NF	NF
2-Hexene, 1-(1-ethoxyethoxy)-, (Z)-	35		NF	NF	NF
2-Hexanone, 4-hydroxy-5-methyl-	50		NF	27 NJ	27.4 NJ
2-Heptanone	23		175 NJ	171.8 NJ	206 NJ
2H-1,3-Benzoxazine, 6-chloro-3-cyclohexy	35		NF	NF	26.6 NJ
2-Furanmethanol	14		NF	NF	NF
2-Butanone, 3-hydroxy-3-methyl-	33		NF	NF	NF
2-Butanol, 3-methyl-, acetate	50		26 NJ	NF	NF
2-Acetylthiazole	32		18.56 NJ	NF	NF
2,6,10-Dodecatrien-1-ol, 3,7,11-trimethy	68		NF	NF	NF
2,4-Hexadiene	35		8.72 NJ	NF	NF
2,4,6-Tris-(1-phenylethyl)-phenol	38		168.04 NJ	215.08 NJ	189.3 NJ
2,2´-Bi-1,3-dioxolane	35		NF	NF	NF
1-Tetradecanol	38		NF	10.68 NJ	NF
1H-Isoindole-1,3(2H)-dione, 3a,6,7,7a-te	11		NF	NF	NF
1-Bromo-3-(2-bromoethyl)heptane	52		NF	NF	NF
17-Pentatriacontene	43		NF	NF	NF
10-Methylnonadecane	91		NF	NF	NF

Table 4.4-5
Summary of Tentatively Identified Compound Results for Wipe Samples, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	Match Quality	Sample ID: Date:	G473-RM10-SP02 07/17/02	G473-RM10-SP03 07/17/02	G473-RM10-SP04 07/17/02
1,4-Hexadiene, 2-methyl-	38		NF	NF	33.6 NJ
1,4-Benzenediol, 2,5-bis(1,1-dimethylpro	83		NF	NF	NF
1,3-Hexadiene, 3-ethyl-2-methyl-, (Z)-	25		NF	167 NJ	NF
1,3-DIOXANE, 6-ACETOXY-2,4-DIMETHYL-	22		NF	NF	NF
1,2-Ethanediamine, N-methyl-	35		NF	NF	NF
1,2-Benzenedicarboxylic acid, bis(2-ethy	25		NF	NF	NF
1,2,3,4-Tetrahydronaphthalene-d12	70		NF	7.24 NJ	NF
(Z)-Methyl-5-((E)-3-(1-ethoxyethoxy)oct-	43		NF	NF	NF

Note: Results are reported as total for similar tenatively identified compounds.

Key:

AOI = Area of Interest.
ESI = Expanded Site Investigatio
µg/wipe = Micrograms per wipe.
NF = Not found.
NJ = Identification not confirm
SP = Wipe sample.

Table 4.4-5
Summary of Tentatively Identified Compound Results for Wipe Samples, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	Match Quality	Sample ID: Date:	G473-RM10-SP05 07/17/02	G473-RM10-SP06 07/17/02	G473-RM10-SP07 07/17/02
Semivolatile Organics by Method 8270C (µg/wipe)					
Unknown	0		NF	NF	NF
Tritetracontane	91		193.2 NJ	NF	NF
Triethylene glycol	78		NF	NF	NF
Tricosane	93		NF	NF	NF
Triallylsilane	52		NF	141.2 NJ	NF
TRAPEZIFOLIXANTHONE DIMETHYL ETHER	35		NF	NF	NF
Tetratriacontane	90		41.2 NJ	NF	NF
Tetratetracontane	87		NF	NF	NF
Tetradecane, 1-bromo-	70		NF	NF	NF
Tetracosane	93		NF	NF	NF
Squalene	86		NF	50.4 NJ	NF
Propane, 1-(1-methylethoxy)-	38		NF	NF	NF
Phthalic anhydride (13.985)	96		NF	NF	NF
Phenol, 4,4´-butylidenebis(2-(1,1-dimeth	91		35.2 NJ	46.2 NJ	NF
Phenol, 4-(1-phenylethyl)-	83		99 NJ	NF	NF
Phenol, 2,4-bis(1-phenylethyl)-	70		104.8 NJ	NF	NF
Pentatriacontane	91		NF	NF	NF
Pentadecane, 8-hexyl-	91		NF	NF	11.9 NJ
PENTADECANE, 2,6,10-TRIMETHYL-	43		NF	186 NJ	NF
Pentadecane, 2,6,10,14-tetramethyl-	94		NF	2560 NJ	NF
Pentacosane	95		NF	NF	NF
Octanoic Acid	72		NF	NF	NF
Octadecane, 1-bromo-	64		1154 NJ	NF	NF
Octadecane	87		NF	106 NJ	NF
Octacosane (23.243)	72		NF	NF	NF
Octacosane	96		NF	NF	NF
Nonadecane	96		NF	110.6 NJ	NF
Nonacosane	96		NF	NF	NF
n-Decanoic acid	64		NF	NF	NF
Naphthalene, 1,6-dimethyl-4-(1-methyleth	72		NF	NF	NF
Hexatriacontane	90		322 NJ	11.58 NJ	NF
Hexanoic acid, 2-methyl-	43		NF	NF	12.32 NJ
Hexadecane, 2-methyl-	93		NF	NF	NF
Hexadecane, 2,6,11,15-tetramethyl-	90		NF	15940 NJ	NF
Hexadecane, 2,6,10,14-tetramethyl-	90		91.2 NJ	NF	NF
Hexadecane	93		NF	NF	NF
Hexacosane	93		92.2 NJ	30.6 NJ	NF
Heptanoic acid, methyl ester	25		NF	NF	NF
Heptane, 2,2,3,3,5,6,6-heptamethyl-	28		NF	NF	NF
Heptadecane, 9-octyl-	93		NF	31.4 NJ	NF
Heptadecane	83		NF	NF	NF
Heptacosane, 1-chloro-	50		NF	NF	NF
Heptacosane	91		186.2 NJ	NF	13.58 NJ
Heneicosane	95		NF	NF	NF
HAHNFETT	87		NF	NF	NF
Furan, tetrahydro-3,4-dimethyl-, cis-	18		NF	NF	NF
Ether, heptyl hexyl	34		NF	NF	NF
Ethanol, 2,2´-oxybis-	64		NF	NF	8.38 NJ
Ethanol, 2,2´-(oxybis(2,1-ethanediyloxy)	78		NF	NF	NF
Ethanol, 2,2´-(1,2-ethanediylbis(oxy))bi	38		NF	NF	NF

Table 4.4-5
Summary of Tentatively Identified Compound Results for Wipe Samples, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	Match Quality	Sample ID: Date:	G473-RM10-SP05 07/17/02	G473-RM10-SP06 07/17/02	G473-RM10-SP07 07/17/02
Eicosane, 10-methyl-	93		87 NJ	45.4 NJ	NF
Eicosane	89		71.2 NJ	103.6 NJ	NF
E-8-Methyl-9-tetradecen-1-ol acetate	52		NF	NF	1312 NJ
d-Ribonic acid, _gamma_-lactone, cyclic	59		NF	NF	NF
Dotriacontane	91		40.2 NJ	NF	NF
Docosane	93		42.2 NJ	115.4 NJ	100.2 NJ
Decane, 1,1´-oxybis-	18		NF	NF	NF
Decane	52		NF	NF	NF
Cyclopentane, 1,2,3-trimethyl-, (1_alpha	43		NF	NF	NF
CYCLOPENTANCARBONIC ACID, 3-METHYL-, MET	25		NF	NF	NF
Cyclohexanemethanol, 2-methyl-	43		NF	NF	NF
Cyclohexane, undecyl-	53		NF	NF	NF
Cyclohexane, decyl-	76		NF	172.2 NJ	NF
Cyclohexane, 1-ethyl-4-methyl-, cis-	38		NF	NF	NF
CAPRONIC ACID, OCTYL ESTER	18		NF	NF	NF
Bicyclo(3_1_1)heptane, 2,6,6-trimethyl-,	60		NF	NF	NF
Bicyclo(3_1_0)hexan-2-one, 4-methyl-1-(1	68		NF	NF	NF
Benzothiazole	91		NF	NF	NF
Benzenethiol, 2-amino-	64		NF	NF	NF
8-Nonenoic acid	17		NF	NF	NF
7-Octynoic acid, methyl ester	17		NF	NF	NF
6-METHYL-6-(5´METHYL-2´-FURYL)HEPTA-2,3-	43		NF	22.8 NJ	NF
4-Cyanocyclohexene	99		NF	NF	23.6 NJ
4-Chloro-3-n-hexyltetrahydropyrane	60		NF	NF	NF
4-Benzylamino-1,3-diphenyl-5,6,7,8-tetra	74		NF	NF	10.06 NJ
4,8,12-Trimethyltridecan-4-olide	90		NF	NF	NF
4,5-DIDEUTERO ISOTHIAZOLE	27		NF	NF	8.66 NJ
4(5)-METHYL-5(4)-NITROIMIDAZOLE	38		NF	NF	NF
3-Pentanol, 2-methyl-	53		NF	NF	NF
3-Methyl-2-butyl acetate	42		NF	NF	NF
3-Hydroxy-3-methyl-2-butanone	50		NF	NF	NF
3-HEXEN-2-ONE, 3-CYCLOHEXYL-4-ETHYL-	43		194.4 NJ	NF	NF
2-Pentenoic acid, 4-methylphenyl ester	22		NF	NF	NF
2-Pentanone, 4-hydroxy-4-methyl-	23		2100 NJ	147.2 NJ	2394.8 NJ
2-Octanone	47		NF	NF	NF
2-Hexene, 1-(1-ethoxyethoxy)-, (Z)-	35		NF	NF	NF
2-Hexanone, 4-hydroxy-5-methyl-	50		NF	NF	32.6 NJ
2-Heptanone	23		186.4 NJ	NF	NF
2H-1,3-Benzoxazine, 6-chloro-3-cyclohexy	35		NF	NF	NF
2-Furanmethanol	14		NF	NF	NF
2-Butanone, 3-hydroxy-3-methyl-	33		NF	NF	8.78 NJ
2-Butanol, 3-methyl-, acetate	50		NF	NF	NF
2-Acetylthiazole	32		NF	NF	NF
2,6,10-Dodecatrien-1-ol, 3,7,11-trimethy	68		NF	NF	NF
2,4-Hexadiene	35		NF	NF	NF
2,4,6-Tris-(1-phenylethyl)-phenol	38		82 NJ	69.8 NJ	164.4 NJ
2,2´-Bi-1,3-dioxolane	35		NF	NF	NF
1-Tetradecanol	38		NF	NF	NF
1H-Isoindole-1,3(2H)-dione, 3a,6,7,7a-te	11		NF	NF	NF
1-Bromo-3-(2-bromoethyl)heptane	52		NF	NF	NF
17-Pentatriacontene	43		NF	NF	NF
10-Methylnonadecane	91		NF	NF	NF

Table 4.4-5
Summary of Tentatively Identified Compound Results for Wipe Samples, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	Match Quality	Sample ID: Date:	G473-RM10-SP05 07/17/02	G473-RM10-SP06 07/17/02	G473-RM10-SP07 07/17/02
1,4-Hexadiene, 2-methyl-	38		NF	NF	NF
1,4-Benzenediol, 2,5-bis(1,1-dimethylpro	83		NF	NF	NF
1,3-Hexadiene, 3-ethyl-2-methyl-, (Z)-	25		NF	NF	NF
1,3-DIOXANE, 6-ACETOXY-2,4-DIMETHYL-	22		NF	NF	NF
1,2-Ethanediamine, N-methyl-	35		NF	NF	NF
1,2-Benzenedicarboxylic acid, bis(2-ethy	25		NF	NF	NF
1,2,3,4-Tetrahydronaphthalene-d12	70		NF	NF	NF
(Z)-Methyl-5-((E)-3-(1-ethoxyethoxy)oct-	43		NF	NF	NF

Note: Results are reported as total for similar tenatively identified compounds.

Key:

AOI = Area of Interest.
ESI = Expanded Site Investigatio
µg/wipe = Micrograms per wipe.
NF = Not found.
NJ = Identification not confirm
SP = Wipe sample.

Table 4.4-5
Summary of Tentatively Identified Compound Results for Wipe Samples, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	Match Quality	Sample ID: Date:	G473-RM10-SP08 07/17/02	G473-RM10-SP09 07/17/02	G473-RM10-SP10 07/17/02
Semivolatile Organics by Method 8270C (µg/wipe)					
Unknown	0		NF	NF	NF
Tritetracontane	91		NF	NF	NF
Triethylene glycol	78		NF	NF	NF
Tricosane	93		NF	335.2 NJ	NF
Triallylsilane	52		NF	NF	NF
TRAPEZIFOLIXANTHONE DIMETHYL ETHER	35		NF	NF	254 NJ
Tetratriacontane	90		NF	NF	NF
Tetratetracontane	87		NF	98.6 NJ	NF
Tetradecane, 1-bromo-	70		208 NJ	NF	NF
Tetracosane	93		266 NJ	89.4 NJ	106.2 NJ
Squalene	86		NF	NF	NF
Propane, 1-(1-methylethoxy)-	38		NF	138.2 NJ	NF
Phthalic anhydride (13.985)	96		NF	NF	13 NJ
Phenol, 4,4´-butylidenebis(2-(1,1-dimeth	91		32.6 NJ	44.2 NJ	12.68 NJ
Phenol, 4-(1-phenylethyl)-	83		NF	NF	NF
Phenol, 2,4-bis(1-phenylethyl)-	70		58.8 NJ	77.8 NJ	NF
Pentatriacontane	91		NF	NF	40.8 NJ
Pentadecane, 8-hexyl-	91		NF	NF	NF
PENTADECANE, 2,6,10-TRIMETHYL-	43		NF	NF	NF
Pentadecane, 2,6,10,14-tetramethyl-	94		NF	109 NJ	NF
Pentacosane	95		NF	NF	NF
Octanoic Acid	72		NF	NF	8.2 NJ
Octadecane, 1-bromo-	64		NF	NF	NF
Octadecane	87		NF	NF	NF
Octacosane (23.243)	72		NF	NF	NF
Octacosane	96		40.8 NJ	51.2 NJ	NF
Nonadecane	96		NF	NF	NF
Nonacosane	96		NF	NF	NF
n-Decanoic acid	64		NF	NF	4.06 NJ
Naphthalene, 1,6-dimethyl-4-(1-methyleth	72		NF	204 NJ	NF
Hexatriacontane	90		167.4 NJ	NF	NF
Hexanoic acid, 2-methyl-	43		NF	NF	NF
Hexadecane, 2-methyl-	93		NF	103.4 NJ	NF
Hexadecane, 2,6,11,15-tetramethyl-	90		NF	NF	NF
Hexadecane, 2,6,10,14-tetramethyl-	90		16.26 NJ	87.8 NJ	NF
Hexadecane	93		38.2 NJ	NF	NF
Hexacosane	93		NF	NF	59.06 NJ
Heptanoic acid, methyl ester	25		NF	NF	NF
Heptane, 2,2,3,3,5,6,6-heptamethyl-	28		NF	NF	NF
Heptadecane, 9-octyl-	93		NF	NF	NF
Heptadecane	83		NF	406 NJ	NF
Heptacosane, 1-chloro-	50		NF	NF	NF
Heptacosane	91		39 NJ	NF	NF
Heneicosane	95		NF	146 NJ	NF
HAHNFETT	87		NF	NF	NF
Furan, tetrahydro-3,4-dimethyl-, cis-	18		NF	NF	NF
Ether, heptyl hexyl	34		NF	NF	NF
Ethanol, 2,2´-oxybis-	64		NF	NF	12.38 NJ
Ethanol, 2,2´-(oxybis(2,1-ethanediyloxy)	78		NF	NF	NF
Ethanol, 2,2´-(1,2-ethanediylbis(oxy))bi	38		18.8 NJ	NF	NF

Table 4.4-5
Summary of Tentatively Identified Compound Results for Wipe Samples, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	Match Quality	Sample ID: Date:	G473-RM10-SP08 07/17/02	G473-RM10-SP09 07/17/02	G473-RM10-SP10 07/17/02
Eicosane, 10-methyl-	93		NF	NF	NF
Eicosane	89		330 NJ	NF	30.1 NJ
E-8-Methyl-9-tetradecen-1-ol acetate	52		NF	NF	NF
d-Ribonic acid, _gamma_-lactone, cyclic	59		NF	28.2 NJ	NF
Dotriacontane	91		NF	NF	NF
Docosane	93		NF	210 NJ	NF
Decane, 1,1´-oxybis-	18		NF	NF	NF
Decane	52		NF	NF	NF
Cyclopentane, 1,2,3-trimethyl-, (1_alpha	43		13.46 NJ	NF	NF
CYCLOPENTANCARBONIC ACID, 3-METHYL-, MET	25		NF	NF	NF
Cyclohexanemethanol, 2-methyl-	43		NF	NF	NF
Cyclohexane, undecyl-	53		NF	NF	NF
Cyclohexane, decyl-	76		NF	NF	NF
Cyclohexane, 1-ethyl-4-methyl-, cis-	38		NF	NF	NF
CAPRONIC ACID, OCTYL ESTER	18		NF	NF	NF
Bicyclo(3_1_1)heptane, 2,6,6-trimethyl-,	60		NF	NF	39.4 NJ
Bicyclo(3_1_0)hexan-2-one, 4-methyl-1-(1	68		NF	NF	NF
Benzothiazole	91		NF	NF	NF
Benzenethiol, 2-amino-	64		NF	NF	NF
8-Nonenoic acid	17		NF	NF	8.2 NJ
7-Octynoic acid, methyl ester	17		NF	NF	NF
6-METHYL-6-(5´METHYL-2´-FURYL)HEPTA-2,3-	43		NF	NF	NF
4-Cyanocyclohexene	99		NF	NF	43.4 NJ
4-Chloro-3-n-hexyltetrahydropyrane	60		NF	NF	NF
4-Benzylamino-1,3-diphenyl-5,6,7,8-tetra	74		NF	NF	NF
4,8,12-Trimethyltridecan-4-olide	90		NF	NF	NF
4,5-DIDEUTERO ISOTHIAZOLE	27		NF	NF	NF
4(5)-METHYL-5(4)-NITROIMIDAZOLE	38		NF	NF	NF
3-Pentanol, 2-methyl-	53		NF	NF	NF
3-Methyl-2-butyl acetate	42		NF	NF	NF
3-Hydroxy-3-methyl-2-butanone	50		NF	NF	NF
3-HEXEN-2-ONE, 3-CYCLOHEXYL-4-ETHYL-	43		NF	NF	NF
2-Pentenoic acid, 4-methylphenyl ester	22		NF	NF	NF
2-Pentanone, 4-hydroxy-4-methyl-	23		2380 NJ	2180 NJ	1764 NJ
2-Octanone	47		NF	NF	NF
2-Hexene, 1-(1-ethoxyethoxy)-, (Z)-	35		NF	NF	NF
2-Hexanone, 4-hydroxy-5-methyl-	50		NF	NF	26.8 NJ
2-Heptanone	23		212 NJ	NF	152.6 NJ
2H-1,3-Benzoxazine, 6-chloro-3-cyclohexy	35		NF	NF	NF
2-Furanmethanol	14		NF	NF	NF
2-Butanone, 3-hydroxy-3-methyl-	33		NF	NF	NF
2-Butanol, 3-methyl-, acetate	50		NF	NF	NF
2-Acetylthiazole	32		NF	NF	NF
2,6,10-Dodecatrien-1-ol, 3,7,11-trimethy	68		NF	NF	NF
2,4-Hexadiene	35		NF	NF	NF
2,4,6-Tris-(1-phenylethyl)-phenol	38		100.2 NJ	47 NJ	15 NJ
2,2´-Bi-1,3-dioxolane	35		NF	NF	NF
1-Tetradecanol	38		NF	NF	NF
1H-Isoindole-1,3(2H)-dione, 3a,6,7,7a-te	11		NF	NF	NF
1-Bromo-3-(2-bromoethyl)heptane	52		NF	NF	NF
17-Pentatriacontene	43		NF	NF	12000 NJ
10-Methylnonadecane	91		NF	NF	NF

Table 4.4-5
Summary of Tentatively Identified Compound Results for Wipe Samples, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	Match Quality	Sample ID: Date:	G473-RM10-SP08 07/17/02	G473-RM10-SP09 07/17/02	G473-RM10-SP10 07/17/02
1,4-Hexadiene, 2-methyl-	38		NF	NF	NF
1,4-Benzenediol, 2,5-bis(1,1-dimethylpro	83		NF	870 NJ	NF
1,3-Hexadiene, 3-ethyl-2-methyl-, (Z)-	25		NF	NF	NF
1,3-DIOXANE, 6-ACETOXY-2,4-DIMETHYL-	22		NF	NF	NF
1,2-Ethanediamine, N-methyl-	35		NF	NF	NF
1,2-Benzenedicarboxylic acid, bis(2-ethy	25		NF	NF	NF
1,2,3,4-Tetrahydronaphthalene-d12	70		NF	NF	NF
(Z)-Methyl-5-((E)-3-(1-ethoxyethoxy)oct-	43		NF	NF	NF

Note: Results are reported as total for similar tenatively identified compounds.

Key:

AOI = Area of Interest.
ESI = Expanded Site Investigatio
µg/wipe = Micrograms per wipe.
NF = Not found.
NJ = Identification not confirm
SP = Wipe sample.

Table 4.4-5
Summary of Tentatively Identified Compound Results for Wipe Samples, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	Match Quality	Sample ID: Date:	G473-RM10-SP09 01/00/00	G473-RM10-SP10 01/00/00
Semivolatile Organics by Method 8270C (µg/wipe)				
Unknown	0		NF	NF
Tritetracontane	91		NF	NF
Triethylene glycol	78		NF	NF
Tricosane	93		335.2 NJ	NF
Triallylsilane	52		NF	NF
TRAPEZIFOLIXANTHONE DIMETHYL ETHER	35		NF	254 NJ
Tetratriacontane	90		NF	NF
Tetratetracontane	87		98.6 NJ	NF
Tetradecane, 1-bromo-	70		NF	NF
Tetracosane	93		89.4 NJ	106.2 NJ
Squalene	86		NF	NF
Propane, 1-(1-methylethoxy)-	38		138.2 NJ	NF
Phthalic anhydride (13.985)	96		NF	13 NJ
Phenol, 4,4´-butylidenebis(2-(1,1-dimeth	91		44.2 NJ	12.68 NJ
Phenol, 4-(1-phenylethyl)-	83		NF	NF
Phenol, 2,4-bis(1-phenylethyl)-	70		77.8 NJ	NF
Pentatriacontane	91		NF	40.8 NJ
Pentadecane, 8-hexyl-	91		NF	NF
PENTADECANE, 2,6,10-TRIMETHYL-	43		NF	NF
Pentadecane, 2,6,10,14-tetramethyl-	94		109 NJ	NF
Pentacosane	95		NF	NF
Octanoic Acid	72		NF	8.2 NJ
Octadecane, 1-bromo-	64		NF	NF
Octadecane	87		NF	NF
Octacosane (23.243)	72		NF	NF
Octacosane	96		51.2 NJ	NF
Nonadecane	96		NF	NF
Nonacosane	96		NF	NF
n-Decanoic acid	64		NF	4.06 NJ
Naphthalene, 1,6-dimethyl-4-(1-methyleth	72		204 NJ	NF
Hexatriacontane	90		NF	NF
Hexanoic acid, 2-methyl-	43		NF	NF
Hexadecane, 2-methyl-	93		103.4 NJ	NF
Hexadecane, 2,6,11,15-tetramethyl-	90		NF	NF
Hexadecane, 2,6,10,14-tetramethyl-	90		87.8 NJ	NF
Hexadecane	93		NF	NF
Hexacosane	93		NF	59.06 NJ
Heptanoic acid, methyl ester	25		NF	NF
Heptane, 2,2,3,3,5,6,6-heptamethyl-	28		NF	NF
Heptadecane, 9-octyl-	93		NF	NF
Heptadecane	83		406 NJ	NF
Heptacosane, 1-chloro-	50		NF	NF
Heptacosane	91		NF	NF
Heneicosane	95		146 NJ	NF
HAHNFETT	87		NF	NF
Furan, tetrahydro-3,4-dimethyl-, cis-	18		NF	NF
Ether, heptyl hexyl	34		NF	NF
Ethanol, 2,2´-oxybis-	64		NF	12.38 NJ
Ethanol, 2,2´-(oxybis(2,1-ethanediyloxy)	78		NF	NF
Ethanol, 2,2´-(1,2-ethanediylbis(oxy))bi	38		NF	NF

Table 4.4-5
Summary of Tentatively Identified Compound Results for Wipe Samples, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Analyte	Match Quality	Sample ID: Date:	G473-RM10-SP09 01/00/00	G473-RM10-SP10 01/00/00
Eicosane, 10-methyl-	93		NF	NF
Eicosane	89		NF	30.1 NJ
E-8-Methyl-9-tetradecen-1-ol acetate	52		NF	NF
d-Ribonic acid, _gamma_-lactone, cyclic	59		28.2 NJ	NF
Dotriacontane	91		NF	NF
Docosane	93		210 NJ	NF
Decane, 1,1´-oxybis-	18		NF	NF
Decane	52		NF	NF
Cyclopentane, 1,2,3-trimethyl-, (1_alpha	43		NF	NF
CYCLOPENTANCARBONIC ACID, 3-METHYL-, MET	25		NF	NF
Cyclohexanemethanol, 2-methyl-	43		NF	NF
Cyclohexane, undecyl-	53		NF	NF
Cyclohexane, decyl-	76		NF	NF
Cyclohexane, 1-ethyl-4-methyl-, cis-	38		NF	NF
CAPRONIC ACID, OCTYL ESTER	18		NF	NF
Bicyclo(3_1_1)heptane, 2,6,6-trimethyl-,	60		NF	39.4 NJ
Bicyclo(3_1_0)hexan-2-one, 4-methyl-1-(1	68		NF	NF
Benzothiazole	91		NF	NF
Benzenethiol, 2-amino-	64		NF	NF
8-Nonenoic acid	17		NF	8.2 NJ
7-Octynoic acid, methyl ester	17		NF	NF
6-METHYL-6-(5´METHYL-2´-FURYL)HEPTA-2,3-	43		NF	NF
4-Cyanocyclohexene	99		NF	43.4 NJ
4-Chloro-3-n-hexyltetrahydropyrane	60		NF	NF
4-Benzylamino-1,3-diphenyl-5,6,7,8-tetra	74		NF	NF
4,8,12-Trimethyltridecan-4-olide	90		NF	NF
4,5-DIDEUTERO ISOTHIAZOLE	27		NF	NF
4(5)-METHYL-5(4)-NITROIMIDAZOLE	38		NF	NF
3-Pentanol, 2-methyl-	53		NF	NF
3-Methyl-2-butyl acetate	42		NF	NF
3-Hydroxy-3-methyl-2-butanone	50		NF	NF
3-HEXEN-2-ONE, 3-CYCLOHEXYL-4-ETHYL-	43		NF	NF
2-Pentenoic acid, 4-methylphenyl ester	22		NF	NF
2-Pentanone, 4-hydroxy-4-methyl-	23		2180 NJ	1764 NJ
2-Octanone	47		NF	NF
2-Hexene, 1-(1-ethoxyethoxy)-, (Z)-	35		NF	NF
2-Hexanone, 4-hydroxy-5-methyl-	50		NF	26.8 NJ
2-Heptanone	23		NF	152.6 NJ
2H-1,3-Benzoxazine, 6-chloro-3-cyclohexy	35		NF	NF
2-Furanmethanol	14		NF	NF
2-Butanone, 3-hydroxy-3-methyl-	33		NF	NF
2-Butanol, 3-methyl-, acetate	50		NF	NF
2-Acetylthiazole	32		NF	NF
2,6,10-Dodecatrien-1-ol, 3,7,11-trimethy	68		NF	NF
2,4-Hexadiene	35		NF	NF
2,4,6-Tris-(1-phenylethyl)-phenol	38		47 NJ	15 NJ
2,2´-Bi-1,3-dioxolane	35		NF	NF
1-Tetradecanol	38		NF	NF
1H-Isoindole-1,3(2H)-dione, 3a,6,7,7a-te	11		NF	NF
1-Bromo-3-(2-bromoethyl)heptane	52		NF	NF
17-Pentatriacontene	43		NF	12000 NJ
10-Methylnonadecane	91		NF	NF

Table 4.4-5
Summary of Tentatively Identified Compound Results for Wipe Samples, AOI 473 2002 ESI, Former Griffiss Air Force Base, Rome, New York

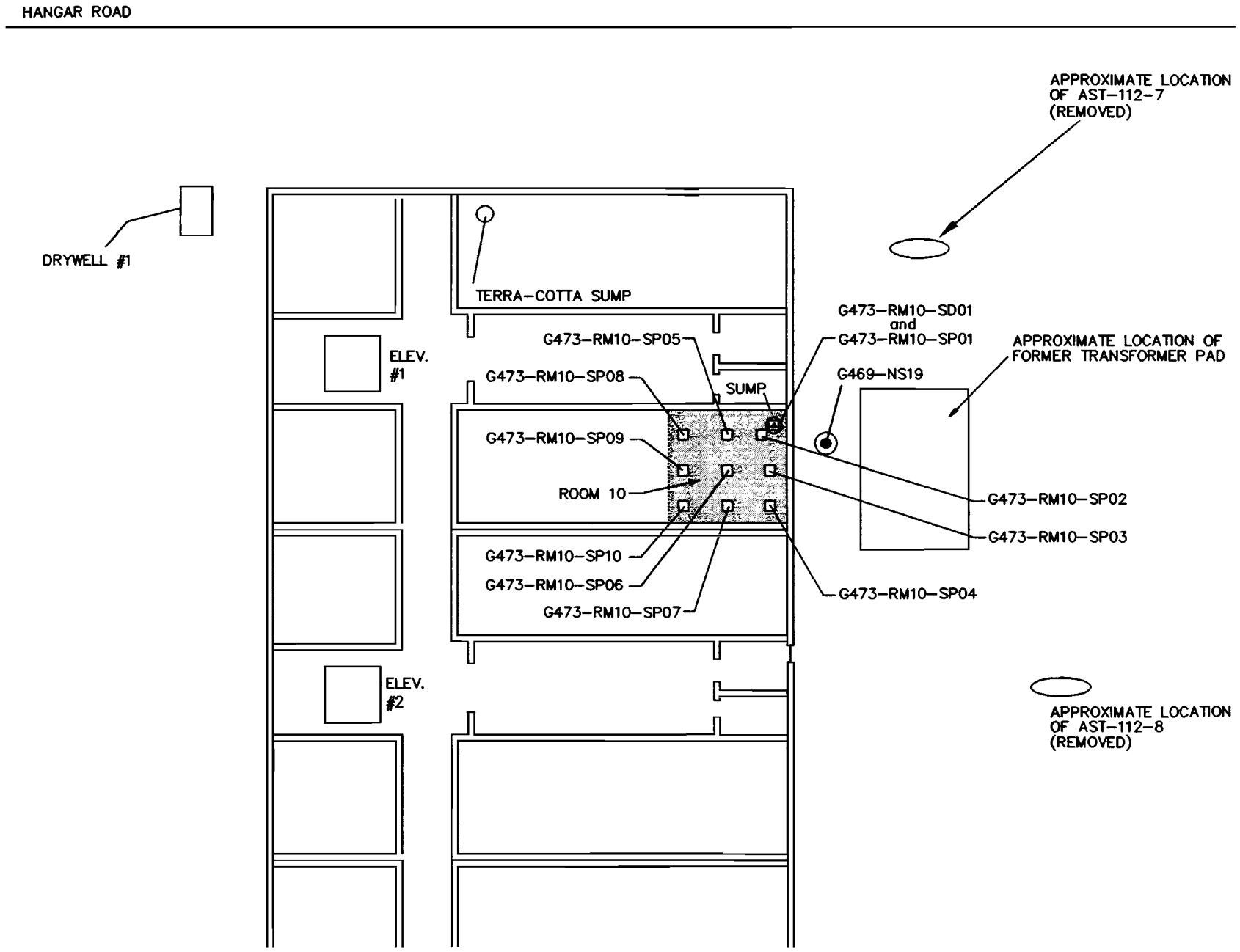
Analyte	Match Quality	Sample ID: Date:	G473-RM10-SP09 01/00/00	G473-RM10-SP10 01/00/00
1,4-Hexadiene, 2-methyl-	38		NF	NF
1,4-Benzenediol, 2,5-bis(1,1-dimethylpro	83		870 NJ	NF
1,3-Hexadiene, 3-ethyl-2-methyl-, (Z)-	25		NF	NF
1,3-DIOXANE, 6-ACETOXY-2,4-DIMETHYL-	22		NF	NF
1,2-Ethanediamine, N-methyl-	35		NF	NF
1,2-Benzenedicarboxylic acid, bis(2-ethy	25		NF	NF
1,2,3,4-Tetrahydronaphthalene-d12	70		NF	NF
(Z)-Methyl-5-((E)-3-(1-ethoxyethoxy)oct-	43		NF	NF

Note: Results are reported as total for similar tenatively identified compounds.

Key:

AOI = Area of Interest.
ESI = Expanded Site Investigatio
µg/wipe = Micrograms per wipe.
NF = Not found.
NJ = Identification not confirm
SP = Wipe sample.

F:\GRIFFISS\BOB MEYERS\JAN 2002 Wp\CK1S010A_2002-B.dwg



LEGEND

- PROPOSED 2002 ESI SWIPE SAMPLE LOCATION
- SUMP PIT
- PROPOSED 2002 ESI SWIPE AND SEDIMENT SAMPLE LOCATION
- YEAR 2000 ESI NEAR-SURFACE SOIL SAMPLE AND SOIL BORING LOCATION WITH INTERMEDIATE AND DEEP SAMPLES COLLECTED
- ABOVEGROUND STORAGE TANK (AST)
- DRYWELL

AOI	AREA OF INTEREST
AST	ABOVE GROUND STORAGE TANK
ELEV.	ELEVATOR
NYSDEC	NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

N

SCALE IN FEET

0 25 50 75

IBM plotted 2/18/03 KBK

ecology and environment

Figure 4.4-1 2002 ESI SAMPLE LOCATIONS
AOI 473-BUILDING 112, ROOM 10

5 References

Air Force Center for Environmental Excellence, 1998, Closure of Hazardous Waste/Hazardous Material Storage Areas at Griffiss Air Force Base, Rome, New York, April 1998.

Bergmann Associates, July 3, 1996, Griffiss Business and Technology Park Industrial Site Development Project Engineer's Report, Rochester, New York.

Ecology and Environment, Inc., June 2002a, Final Field Sampling Plan, Health and Safety Plan, and Quality Assurance Project Plan for the 2002 Expanded Site Investigation, Former Griffiss Air Force Base, Rome, New York.

_____, November 2002b, Quality Control Summary Report for the Year 2000 Expanded Site Investigation at the Former Griffiss Air Force Base, Rome, New York.

_____,2002c, *Final Report for Former Griffiss Air Force Base, Year 2000 Expanded Site Investigation, Former Griffiss Air Force Base, Rome, New York*, Lancaster, New York, January 2002.

_____,2002d, *Final Three Mile Creek Feasibility Study Addendum, Former Griffiss Air Force Base, Rome, New York*, Lancaster, New York, July 2002.

_____, February 2000, Field Sampling Plan, Health and Safety Plan, and Quality Assurance Project Plan Addendum for the Expanded Site Investigation of AOI/OTH/PCI/EOD Sites at the Former Griffiss Air Force Base, Rome, New York.

_____, September 1999, Quality Control Plan, Griffiss Air Force Base, Rome, New York.

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

_____, October 1997a, Field Sampling Plan, Health and Safety Plan, and Quality Assurance Plan for the Expanded Site Investigation at the Former Griffiss Air Force Base, Rome, New York

_____, January 1997b, Confirmatory Sampling Report for 10 Areas of Interest (AOIs), Group III AOIs, Griffiss Air Force Base, Rome, New York.

_____, 1997c, *Final Design Analysis Reports (DAR) for the Remediation of Contaminants at Areas of Concern (AOC), Former Griffiss Air Force Base, Rome, New York*, January 1997.

_____, November 1996, Confirmatory Sampling Report for 15 Areas of Interest (AOIs), Group I AOIs, Griffiss Air Force Base, Rome, New York.

_____, August 1995, Work Plan, Quality Assurance Plan, and Health and Safety Plan for the Preliminary Assessment/ Site Investigation of 15 Areas of Interest at Griffiss Air Force Base, Rome New York.

Engineering-Science, Inc., 1981, Installation Restoration Program Phase 1 - Record Search, Hazardous Materials Disposal Sites, Griffiss Air Force Base, New York. Prepared for United States Air Force, AFESC/DEV, Tyndall Air Force Base, Florida.

Griffiss Local Development Corporation (GLDC), 1995, A Master Reuse Strategy for Griffiss Air Force Base, Rome, New York, Phase Two - Building the Foundation for Scenario Development, Rome, New York.

Hydro-Environmental Technologies, Inc., 1986, Soil Borings, Sample Analysis, and Monitoring Well Installation at Various Locations, Griffiss Air Force Base, New York (Letter Report), Clarksville, New York.

Law Engineering and Environmental Services, Inc. (Law Environmental), December 1996, Draft Final Report, Remedial Investigation at Griffiss Air Force Base, New York, Kennesaw, Georgia.

_____, 1995, Draft Primary Report, Remedial Investigation Background Information, Griffiss Air Force Base, New York, August 1995, prepared for the U.S. Army Corps of Engineers, Kansas City District, Kennesaw, Georgia.

_____, 1994a, Final Report, Identification of Areas of Interest, Griffiss Air Force Base, New York, Kennesaw, Georgia.

_____, 1994b, Final Site Investigation Report for IAG Regulator Chosen Sites, Griffiss Air Force Base, New York. Prepared for the United States Army Corps of Engineers Kansas City District, Kennesaw, Georgia.

New York Code of Rules and Regulations (NYCRR), 1999, 6 NYCRR Part 371, Identification and Listing of Hazardous Wastes, Title 6 of the Official Compilation of Codes, Rules, and Regulations, Division of Solid & Hazardous Materials NYSDEC, Albany, New York.

New York State Department of Environmental Conservation (NYSDEC), 1994, Technical and Administrative Guidance Memorandum (TAGM) 4046: Determination of Soil Cleanup Objectives and Soil Cleanup Levels, prepared by M.J. O'Toole, Jr., Division of Hazardous Waste Remediation, NYSDEC, Albany, New York.

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

_____, 1998, *Closure of Building 112 Drywells: Results and Recommendations Report, Former Griffiss Air Force Base, Rome, New York*, Hopkinton, Massachusetts, January 1998.

Panamerican Consultants, Inc. (PCI), 1997, Phase II Archaeological Investigation of 20 Sites at Griffiss Air Force Base, Rome, Oneida County, New York, Final Report, Tuscalosa, Alabama.

Shacklette, H.T., and J.G. Boerngen, 1984, Element Concentrations on Soils and Other Surficial Materials of the Conterminous United States, United States Geological Survey Professional Paper 1270, Washington, D.C.

State University of New York (SUNY), 1991, Geology of New York, A short Account, Educational Leaflet 20, produced in conjunction with the State Education Department and the New York State Museum and Science Service, Albany, New York.

Tetra Tech, Inc., 1995, EBS/AOI Summary Table, Griffiss Air Force Base, New York, San Bernardino, California.

_____, 1994, *Basewide Environmental Baseline Survey*, Griffiss Air Force Base, New York,

UNC Geotech, 1989, Site Analysis, Griffiss AFB, Oneida County, New York, Vol. 1 and 2, USEPA Region II, OERR, Las Vegas, Nevada.

United States Air Force (USAF), 1999, Final Supplemental Environmental Impact Statement, Disposal and Reuse of Griffiss Air Force Base, New York, September 1999.

_____, 1995, Final Environmental Impact Statement, Disposal and Reuse of Griffiss Air Force Base, New York, November 1995.

United States Department of Health and Human Services (USDOH&HS), 1993, Agency for Toxic Substances and Disease Registry, Toxicological Profile for Polycyclic Aromatic Hydrocarbons.

United States Environmental Protection Agency (USEPA), 2002a, Requirements for PCB Spill Cleanup, 40 Code of Federal Regulations (CFR) Part 761.125(c)(4), July 2002, Washington, DC.

_____, 2002b, Risk-Based Concentration Table, April 2002, prepared by Jennifer Hubbard, Superfund Technical Support Section, USEPA Region III, Philadelphia, Pennsylvania.

_____, 1994, Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities Memorandum, OWSER Directive No. 9355.4-12, July 1994 Washington, DC.

United States Geological Survey, 1955, 7.5-Minute (Topographic) Map, Rome, New York, Quadrangle.

A Analytical Results

Table A-1
Complete Analytical Data Summary for Soil Samples, OTH 305 Year 2002 ESI,
Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: Date:	OTH305-SS01 05/09/02	OTH305-SS02 05/09/02	OTH305-SS03 05/09/02
Semivolatile Organics by Method 8270C (µg/Kg)					
SW8270C	1,2,4-Trichlorobenzene	µg/Kg	370 U	362 U	360 U
SW8270C	1,2-Dichlorobenzene	µg/Kg	370 U	362 U	360 U
SW8270C	1,3-Dichlorobenzene	µg/Kg	370 U	362 U	360 U
SW8270C	1,4-Dichlorobenzene	µg/Kg	370 U	362 U	360 U
SW8270C	2,4,5-Trichlorophenol	µg/Kg	931 U	911 U	905 U
SW8270C	2,4,6-Trichlorophenol	µg/Kg	370 U	362 U	360 U
SW8270C	2,4-Dichlorophenol	µg/Kg	370 U	362 U	360 U
SW8270C	2,4-Dimethylphenol	µg/Kg	370 U	362 U	360 U
SW8270C	2,4-Dinitrophenol	µg/Kg	370 U	362 U	360 U
SW8270C	2,4-Dinitrotoluene	µg/Kg	370 U	362 U	360 U
SW8270C	2,6-Dinitrotoluene	µg/Kg	370 U	362 U	360 U
SW8270C	2-Chloronaphthalene	µg/Kg	370 U	362 U	360 U
SW8270C	2-Chlorophenol	µg/Kg	370 U	362 U	360 U
SW8270C	2-Methylnaphthalene	µg/Kg	370 U	362 U	360 U
SW8270C	2-Methylphenol	µg/Kg	370 U	362 U	360 U
SW8270C	2-Nitroaniline	µg/Kg	931 U	911 U	905 U
SW8270C	2-Nitrophenol	µg/Kg	370 U	362 U	360 U
SW8270C	3,3´-Dichlorobenzidine	µg/Kg	740 U	725 U	719 U
SW8270C	3-Nitroaniline	µg/Kg	931 U	911 U	905 U
SW8270C	4,6-Dinitro-2-methylphenol	µg/Kg	931 U	911 U	905 U
SW8270C	4-Bromophenyl phenyl ether	µg/Kg	370 U	362 U	360 U
SW8270C	4-Chloro-3-methylphenol	µg/Kg	370 U	362 U	360 U
SW8270C	4-Chloroaniline	µg/Kg	370 U	362 U	360 U
SW8270C	4-Chlorophenyl phenyl ether	µg/Kg	370 U	362 U	360 U
SW8270C	4-Methylphenol	µg/Kg	370 U	362 U	360 U
SW8270C	4-Nitroaniline	µg/Kg	931 U	911 U	905 U
SW8270C	4-Nitrophenol	µg/Kg	931 U	911 U	905 U
SW8270C	Acenaphthene	µg/Kg	370 U	362 U	360 U
SW8270C	Acenaphthylene	µg/Kg	370 U	362 U	360 U
SW8270C	Anthracene	µg/Kg	69.0 J	362 U	360 U
SW8270C	Benz(a)anthracene	µg/Kg	146 J	362 U	360 U
SW8270C	Benzo(a)pyrene	µg/Kg	104 J	362 U	360 U
SW8270C	Benzo(b)fluoranthene	µg/Kg	86.2 J	362 U	360 U
SW8270C	Benzo(g,h,i)perylene	µg/Kg	51.1 J	362 U	360 U
SW8270C	Benzo(k)fluoranthene	µg/Kg	122 J	362 U	360 U
SW8270C	Benzoic acid	µg/Kg	931 U	911 U	905 U
SW8270C	Benzyl alcohol	µg/Kg	370 U	362 U	360 U
SW8270C	Bis(2-chloroethoxy)methane	µg/Kg	370 U	362 U	360 U
SW8270C	Bis(2-chloroethyl)ether	µg/Kg	370 U	362 U	360 U
SW8270C	Bis(2-chloroisopropyl)ether	µg/Kg	370 U	362 U	360 U
SW8270C	Bis(2-ethylhexyl)phthalate	µg/Kg	77.9 J	362 U	78.9 J
SW8270C	Butyl benzyl phthalate	µg/Kg	370 U	362 U	360 U
SW8270C	Carbazole	µg/Kg	370 U	362 U	360 U
SW8270C	Chrysene	µg/Kg	148 J	362 U	360 U
SW8270C	Dibenz(a,h)anthracene	µg/Kg	370 U	362 U	360 U
SW8270C	Dibenzofuran	µg/Kg	370 U	362 U	360 U
SW8270C	Diethyl phthalate	µg/Kg	370 U	362 U	360 U
SW8270C	Dimethyl phthalate	µg/Kg	370 U	362 U	360 U

Table A-1
Complete Analytical Data Summary for Soil Samples, OTH 305 Year 2002 ESI,
Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: / Date:	OTH305-SS01 05/09/02	OTH305-SS02 05/09/02	OTH305-SS03 05/09/02
SW8270C	Di-n-butyl phthalate	µg/Kg	370 U	362 U	360 U
SW8270C	Di-n-octyl phthalate	µg/Kg	370 U	362 U	360 U
SW8270C	Fluoranthene	µg/Kg	379	362 U	360 U
SW8270C	Fluorene	µg/Kg	370 U	362 U	360 U
SW8270C	Hexachlorobenzene	µg/Kg	370 U	362 U	360 U
SW8270C	Hexachlorobutadiene	µg/Kg	370 U	362 U	360 U
SW8270C	Hexachlorocyclopentadiene	µg/Kg	931 U	911 U	905 U
SW8270C	Hexachloroethane	µg/Kg	370 U	362 U	360 U
SW8270C	Indeno(1,2,3-cd)pyrene	µg/Kg	50.5 J	362 U	360 U
SW8270C	Isophorone	µg/Kg	370 U	362 U	360 U
SW8270C	Naphthalene	µg/Kg	370 U	362 U	360 U
SW8270C	Nitrobenzene	µg/Kg	370 U	362 U	360 U
SW8270C	N-Nitrosodimethylamine	µg/Kg	370 U	362 U	360 U
SW8270C	N-Nitrosodi-n-propylamine	µg/Kg	370 U	362 U	360 U
SW8270C	N-Nitrosodiphenylamine	µg/Kg	370 U	362 U	360 U
SW8270C	Pentachlorophenol	µg/Kg	931 U	911 U	905 U
SW8270C	Phenanthrene	µg/Kg	302 J	362 U	360 U
SW8270C	Phenol	µg/Kg	370 U	362 U	360 U
SW8270C	Pyrene	µg/Kg	290 J	362 U	360 U
Metals/Mercury by Method 6010B/7471A (mg/Kg)					
SW6010B	Aluminum	mg/Kg	16500	16700	17100
SW6010B	Antimony	mg/Kg	2.11 J	5.56 J	5.55 J
SW6010B	Arsenic	mg/Kg	4.78	6.72	6.73
SW6010B	Barium	mg/Kg	129	49.8	92.2
SW6010B	Beryllium	mg/Kg	0.809 U	0.370 J	0.400 J
SW6010B	Cadmium	mg/Kg	0.457 J	0.460 J	0.518 J
SW6010B	Calcium	mg/Kg	67900	3370	5500
SW6010B	Chromium	mg/Kg	15.5	15.3	18.1
SW6010B	Cobalt	mg/Kg	6.58	8.60	8.93
SW6010B	Copper	mg/Kg	18.8	40.8	37.4
SW6010B	Iron	mg/Kg	18200	31300	30400
SW6010B	Lead	mg/Kg	25.8	10.5	18.1
SW6010B	Magnesium	mg/Kg	6040	5280	5440
SW6010B	Manganese	mg/Kg	532	1550	1230
SW7471A	Mercury	mg/Kg	0.0163 J	0.0375 J	0.0560 U
SW6010B	Nickel	mg/Kg	18.9	24.8	24.6
SW6010B	Potassium	mg/Kg	1110	1080	1140
SW6010B	Selenium	mg/Kg	2.14	2.12 U	2.07 U
SW6010B	Silver	mg/Kg	0.809 U	1.06 U	1.04 U
SW6010B	Sodium	mg/Kg	647	189 J	193 J
SW6010B	Thallium	mg/Kg	1.62 U	2.12 U	2.07 U
SW6010B	Vanadium	mg/Kg	19.7	22.7	21.7
SW6010B	Zinc	mg/Kg	51.6	72.3	89.0
PCBs by Method 8082 (µg/Kg)					
SW8082	Aroclor 1016	µg/Kg	20.6 U	20.7 U	21.9 U
SW8082	Aroclor 1221	µg/Kg	41.3 U	41.3 U	43.7 U
SW8082	Aroclor 1232	µg/Kg	20.6 U	20.7 U	21.9 U
SW8082	Aroclor 1242	µg/Kg	20.6 U	20.7 U	21.9 U
SW8082	Aroclor 1248	µg/Kg	20.6 U	20.7 U	21.9 U

Table A-1
Complete Analytical Data Summary for Soil Samples, OTH 305 Year 2002 ESI,
Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: / Date:	OTH305-SS01 05/09/02	OTH305-SS02 05/09/02	OTH305-SS03 05/09/02
SW8082	Aroclor 1254	µg/Kg	33.9	20.7 U	21.3 J
SW8082	Aroclor 1260	µg/Kg	20.6 U	20.7 U	21.9 U
Pesticides by Method 8081A (µg/Kg)					
SW8081A	4,4´-DDD	µg/Kg	1.61 J	3.10 U	3.28 U
SW8081A	4,4´-DDE	µg/Kg	1.11 J	3.10 U	0.503 J
SW8081A	4,4´-DDT	µg/Kg	1.86 J	4.13 U	4.37 U
SW8081A	Aldrin	µg/Kg	4.13 U	4.13 U	4.37 U
SW8081A	alpha-BHC	µg/Kg	3.10 U	3.10 U	3.28 U
SW8081A	alpha-Chlordane	µg/Kg	1.03 U	1.03 U	1.09 U
SW8081A	beta-BHC	µg/Kg	5.60	0.543 J	4.37 U
SW8081A	delta-BHC	µg/Kg	0.748 J	2.07 U	2.19 U
SW8081A	Dieldrin	µg/Kg	5.16 U	5.16 U	5.46 U
SW8081A	Endosulfan I	µg/Kg	5.16 U	5.16 U	5.46 U
SW8081A	Endosulfan II	µg/Kg	0.432 J	3.10 U	3.28 U
SW8081A	Endosulfan sulfate	µg/Kg	6.19 U	6.20 U	6.56 U
SW8081A	Endrin	µg/Kg	4.13 U	4.13 U	4.37 U
SW8081A	Endrin aldehyde	µg/Kg	10.3 U	10.3 U	10.9 U
SW8081A	Endrin ketone	µg/Kg	3.10 U	3.10 U	3.28 U
SW8081A	gamma-BHC	µg/Kg	2.06 U	2.07 U	2.19 U
SW8081A	gamma-Chlordane	µg/Kg	2.06 U	2.07 U	2.19 U
SW8081A	Heptachlor	µg/Kg	6.00	3.10 U	3.28 U
SW8081A	Heptachlor epoxide	µg/Kg	5.16 U	5.16 U	5.46 U
SW8081A	Methoxychlor	µg/Kg	7.12 J	41.3 U	43.7 U
SW8081A	Toxaphene	µg/Kg	103 U	103 U	109 U
Volatile Organics by Method 8260B (µg/Kg)					
SW8260B	1,1,1-Trichloroethane	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	1,1,2,2-Tetrachloroethane	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	1,1,2-Trichloroethane	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	1,1-Dichloroethane	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	1,1-Dichloroethene	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	1,2-Dichlorobenzene	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	1,2-Dichloroethane	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	1,2-Dichloroethene, Total	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	1,2-Dichloropropane	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	1,3-Dichlorobenzene	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	1,4-Dichlorobenzene	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	2-Butanone	µg/Kg	11.1 U	10.8 U	11.0 U
SW8260B	2-Chloroethyl vinyl ether	µg/Kg	11.1 U	10.8 U	11.0 U
SW8260B	2-Hexanone	µg/Kg	11.1 U	10.8 U	11.0 U
SW8260B	4-Methyl-2-pentanone	µg/Kg	11.1 U	10.8 U	11.0 U
SW8260B	Acetone	µg/Kg	20.1 J	10.8 U	4.18 J
SW8260B	Benzene	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	Bromodichloromethane	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	Bromoform	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	Bromomethane	µg/Kg	11.1 U	10.8 U	11.0 U
SW8260B	Carbon disulfide	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	Carbon tetrachloride	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	Chlorobenzene	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	Chloroethane	µg/Kg	11.1 U	10.8 U	11.0 U

Table A-1
Complete Analytical Data Summary for Soil Samples, OTH 305 Year 2002 ESI,
Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: Date:	OTH305-SS01 05/09/02	OTH305-SS02 05/09/02	OTH305-SS03 05/09/02
SW8260B	Chloroform	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	Chloromethane	µg/Kg	11.1 U	10.8 U	11.0 U
SW8260B	cis-1,2-Dichloroethene	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	cis-1,3-Dichloropropene	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	Dibromochloromethane	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	Ethylbenzene	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	m,p-Xylene	µg/Kg	0.845 J	5.41 U	5.52 U
SW8260B	Methylene chloride	µg/Kg	2.10 J	0.446 J	5.52 U
SW8260B	o-Xylene	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	Styrene	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	Tetrachloroethene	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	Toluene	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	trans-1,2-Dichloroethene	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	trans-1,3-Dichloropropene	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	Trichloroethene	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	Trichlorofluoromethane	µg/Kg	5.55 U	5.41 U	5.52 U
SW8260B	Vinyl acetate	µg/Kg	11.1 U	10.8 U	11.0 U
SW8260B	Vinyl chloride	µg/Kg	11.1 U	10.8 U	11.0 U
SW8260B	Xylenes, Total	µg/Kg	0.838 J	5.41 U	5.52 U
Percent Moisture (wt%)					
ASTM_D2216	Percent Moisture	wt%	11.7	9.27	10.7

Note: Units of %REC indicate that the compound is a surrogate spike.

Key:

ESI = Expanded Site Investigation.
J = Estimated value. The reported value is below the quantitation limit or estimated due to variance from quality control limits.
µg/Kg = Micrograms per kilogram.
mg/Kg = Milligrams per kilogram.
OTH = Other Miscellaneous Environmental Factor Sites.
PCBs = Polychlorinated Biphenyls.
SS = Soil sample.
U = Analyte was not detected or not present above background levels. The reported value is the quantitation limit or value elevated due to

Table A-2
Complete Analytical Data Summary for Grab Water Samples, OTH 305 Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: / Date:	OTH305-WG02 05/09/02	OTH305-WG03 05/09/02
Ignitability (Flashpoint), Liquids by Method 1010 (°F)				
SW1010	Ignitability	°F	138	> 140
pH by Method 9040B (S.U.)				
SW9040B	pH	S.U.	7.3	10
Reactive Cyanide by Method 9012A-7.3.3 (mg/Kg)				
SW7.3.3.2	Reactive Cyanide	mg/Kg	0.0500 UR	0.0500 UR
Reactive Sulfide by Method 9034-7.3.4 (mg/Kg)				
SW7.3.4.2	Reactive Sulfide	mg/Kg	170 UJ	170 UJ
TCLP Metals/Mercury by Method 6010B/7470A (mg/L)				
SW1311_6010B	Arsenic	mg/L	0.300 U	0.0196 J
SW1311_6010B	Barium	mg/L	0.346	0.0732
SW1311_6010B	Cadmium	mg/L	0.0150 U	0.0150 U
SW1311_6010B	Chromium	mg/L	0.0300 U	0.0242 J
SW1311_6010B	Lead	mg/L	0.00423 J	0.0727 J
SW1311_7470A	Mercury	mg/L	0.0200 U	0.0200 U
SW1311_6010B	Selenium	mg/L	0.300 U	0.300 U
SW1311_6010B	Silver	mg/L	0.0300 U	0.0300 U
PCBs by Method 8082 (µg/L)				
SW8082	Aroclor 1016	µg/L	5.00 U	5.00 U
SW8082	Aroclor 1221	µg/L	10.0 U	10.0 U
SW8082	Aroclor 1232	µg/L	5.00 U	5.00 U
SW8082	Aroclor 1242	µg/L	5.00 U	5.00 U
SW8082	Aroclor 1248	µg/L	5.00 U	5.00 U
SW8082	Aroclor 1254	µg/L	37.3	29.2
SW8082	Aroclor 1260	µg/L	5.00 U	5.00 U
TCLP Pesticides by Method 8081A (mg/L)				
SW8081A	Chlordane	mg/L	0.0200 U	0.0200 U
SW8081A	Endrin	mg/L	0.005 U	0.005 U
SW8081A	gamma-BHC	mg/L	0.0025 U	0.0025 U
SW8081A	Heptachlor	mg/L	0.0025 U	0.0025 U
SW8081A	Heptachlor epoxide	mg/L	0.005 U	0.005 U
SW8081A	Methoxychlor	mg/L	0.0200 U	0.0200 U
SW8081A	Toxaphene	mg/L	0.100 U	0.100 U
TCLP Herbicides by Method 8151A (mg/L)				
SW8151A	2,4,5-TP (Silvex)	mg/L	0.0250 U	0.0250 U
SW8151A	2,4-D	mg/L	0.250 U	0.250 U
TCLP Semivolatile Organics by Method 8270C (mg/L)				
SW8270C	1,4-Dichlorobenzene	mg/L	0.100 U	0.100 U
SW8270C	2,4,5-Trichlorophenol	mg/L	0.500 U	0.500 U
SW8270C	2,4,6-Trichlorophenol	mg/L	0.100 U	0.100 U
SW8270C	2,4-Dinitrotoluene	mg/L	0.100 U	0.100 U
SW8270C	2-Methylphenol	mg/L	0.100 U	0.100 U
SW8270C	4-Methylphenol/3-Methylphenol	mg/L	0.300 U	0.300 U
SW8270C	Hexachlorobenzene	mg/L	0.100 U	0.100 U
SW8270C	Hexachlorobutadiene	mg/L	0.100 U	0.100 U
SW8270C	Hexachloroethane	mg/L	0.100 U	0.100 U
SW8270C	Nitrobenzene	mg/L	0.100 U	0.100 U
SW8270C	Pentachlorophenol	mg/L	0.500 U	0.500 U
SW8270C	Pyridine	mg/L	0.100 U	0.100 U

Table A-2
Complete Analytical Data Summary for Grab Water Samples, OTH 305 Year 2002 ESI,
Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: Date:	OTH305-WG02 05/09/02	OTH305-WG03 05/09/02
TCLP VOCs by Method 8260B (mg/L)				
SW8260B	1,1-Dichloroethene	mg/L	0.0500 U	0.0500 U
SW8260B	1,2-Dichloroethane	mg/L	0.0500 U	0.0500 U
SW8260B	2-Butanone	mg/L	0.100 U	0.100 U
SW8260B	Benzene	mg/L	0.0500 U	0.0500 U
SW8260B	Carbon tetrachloride	mg/L	0.0500 U	0.0500 U
SW8260B	Chlorobenzene	mg/L	0.0500 U	0.0500 U
SW8260B	Chloroform	mg/L	0.0500 U	0.0500 U
SW8260B	Tetrachloroethene	mg/L	0.0500 U	0.0500 U
SW8260B	Trichloroethene	mg/L	0.0500 U	0.0500 U
SW8260B	Vinyl chloride	mg/L	0.100 U	0.100 U

Note: Units of %REC indicate that the compound is a surrogate spike.

Key:

ESI = Expanded Site Investigation.
J = Estimated value. The reported value is below the quantitation limit or estimated due to variance from quality control limits.
µg/L = Micrograms per liter.
mg/L = Milligrams per liter.
OTH = Other Miscellaneous Environmental Factor Sites.
PCBs = Polychlorinated Biphenyls.
S.U. = Standard units.
TCLP = Toxicity Characteristic Leaching Procedure.
U = Analyte was not detected or not present above background levels. The reported value is the quantitation limit or value elevated due
UR = The PQL for this analyte is not usable. The actual PQL should be higher, but that level cannot be determined.
VOCs = Volatile Organic Compounds.
WG = Grab water sample.
°F = Degree Fahrenheit.

Table A-3
Complete Analytical Data Summary for the Trip Blank Sample, OTH 305 Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: / Date:	OTH305-TB1 / 05/09/02
Volatile Organics by GCMS Method 8260B (µg/L)			
SW8260B	1,1,1-Trichloroethane	µg/L	5.00 U
SW8260B	1,1,2,2-Tetrachloroethane	µg/L	5.00 U
SW8260B	1,1,2-Trichloroethane	µg/L	5.00 U
SW8260B	1,1-Dichloroethane	µg/L	5.00 U
SW8260B	1,1-Dichloroethene	µg/L	5.00 U
SW8260B	1,2-Dichlorobenzene	µg/L	5.00 U
SW8260B	1,2-Dichloroethane	µg/L	5.00 U
SW8260B	1,2-Dichloroethene, Total	µg/L	5.00 U
SW8260B	1,2-Dichloropropane	µg/L	5.00 U
SW8260B	1,3-Dichlorobenzene	µg/L	5.00 U
SW8260B	1,4-Dichlorobenzene	µg/L	5.00 U
SW8260B	2-Butanone	µg/L	10.0 U
SW8260B	2-Chloroethyl vinyl ether	µg/L	10.0 U
SW8260B	2-Hexanone	µg/L	10.0 U
SW8260B	4-Methyl-2-pentanone	µg/L	10.0 U
SW8260B	Acetone	µg/L	10.0 U
SW8260B	Benzene	µg/L	5.00 U
SW8260B	Bromodichloromethane	µg/L	5.00 U
SW8260B	Bromoform	µg/L	5.00 U
SW8260B	Bromomethane	µg/L	10.0 U
SW8260B	Carbon disulfide	µg/L	5.00 U
SW8260B	Carbon tetrachloride	µg/L	5.00 U
SW8260B	Chlorobenzene	µg/L	5.00 U
SW8260B	Chloroethane	µg/L	10.0 U
SW8260B	Chloroform	µg/L	5.00 U
SW8260B	Chloromethane	µg/L	10.0 U
SW8260B	cis-1,2-Dichloroethene	µg/L	5.00 U
SW8260B	cis-1,3-Dichloropropene	µg/L	5.00 U
SW8260B	Dibromochloromethane	µg/L	5.00 U
SW8260B	Ethylbenzene	µg/L	5.00 U
SW8260B	m,p-Xylene	µg/L	5.00 U
SW8260B	Methylene chloride	µg/L	5.00 U
SW8260B	o-Xylene	µg/L	5.00 U
SW8260B	Styrene	µg/L	5.00 U
SW8260B	Tetrachloroethene	µg/L	5.00 U
SW8260B	Toluene	µg/L	5.00 U
SW8260B	trans-1,2-Dichloroethene	µg/L	5.00 U
SW8260B	trans-1,3-Dichloropropene	µg/L	5.00 U
SW8260B	Trichloroethene	µg/L	5.00 U
SW8260B	Trichlorofluoromethane	µg/L	5.00 U
SW8260B	Vinyl acetate	µg/L	10.0 U
SW8260B	Vinyl chloride	µg/L	10.0 U
SW8260B	Xylenes, Total	µg/L	5.00 U

Note: Units of %REC indicate that the compound is a surrogate spike.

Key:

ESI = Expanded Site Investigation.
GCMS = Gas Chromatography/Mass Spectrometry.
µg/L = Micrograms per liter.
OTH = Other Miscellaneous Environmental Factor Sites.
TB = Trip blank sample.
U = Analyte was not detected or not present above background levels. The reported value is the quantitation limit or value elevated due to background.

Table A-4
Complete Analytical Data Summary for Near Surface Soil Samples, PCI 20 Year 2002 ESI, Year 2002 PCI 20 Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: Date:	PCI20-NS06 07/15/02	PCI20-NS06/D 07/15/02	PCI20-NS07 07/15/02	PCI20-NS08 07/15/02
Metals by ICP Method 6010B (mg/Kg)						
SW6010B	Lead	mg/Kg	183	202	262	521
ASTM_D2216	Percent Moisture	wt%	18.3	20.0	15.9	9.89

Note:
% REC = Units of %REC indicate that the compound is a surrogate spike.

Key:

ESI = Expanded Site fnvestigation.
J = Estimated value. The reported value is below the quantitation limit or estimated due to variance from quality control limits.
JB = Estimated value that may be bias high due to laboratory or field background contamination.
mg/Kg = Milligrams per kilogram.
NA = Not analyzed or reported.
U = Analyte was not detected or not present above background levels. The reported value is the quantitation limit or value elevated due to background.
UR = The PQL for this analyte is not usable. The actual PQL should be higher, but that level cannot be determined.

Table A-5
Complete Analytical Data Summary for Grab Water Samples,
Building 211 Pipe Vault Floor Year 2002 ESI,
Former Griffiss Air Force Base, Rome, New York

Analyte	Sample ID: / Date:	Bldg211-WG01 / 02/06/02
Metals/Mercury by Method 6010B/7470A (µg/L)		
Aluminum		61.6
Antimony		12.6
Arsenic		7.6 U
Barium		28.4
Beryllium		0.30 U
Cadmium		0.20 U
Calcium		39300
Chromium		1.3
Cobalt		8.1
Copper		63.3
Iron		1320
Lead		1.7 U
Magnesium		3700
Manganese		106
Mercury		0.72
Nickel		27.8
Potassium		4520
Selenium		4.2 U
Silver		2.9 U
Sodium		21300
Thallium		8.8 U
Vanadium		0.72
Zinc		254

Key:

ESI = Expanded Site Investigation.
J = Estimated value.
µg/L = Micrograms per liter.
WG = Grab water sample.

Key at the end of Table.

Table A-6
Complete Analytical Data Summary for the Sludge Sample, AOI 473 Year 2002 ESI Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: / Date:	G473-RM10-SD01 / 07/17/02
Semivolatile Organics by Method 8270C (µg/Kg)			
SW8270C	1,2,4-Trichlorobenzene	µg/Kg	516 U
SW8270C	1,2-Dichlorobenzene	µg/Kg	516 U
SW8270C	1,3-Dichlorobenzene	µg/Kg	516 U
SW8270C	1,4-Dichlorobenzene	µg/Kg	516 U
SW8270C	2,4,5-Trichlorophenol	µg/Kg	1300 U
SW8270C	2,4,6-Trichlorophenol	µg/Kg	516 U
SW8270C	2,4-Dichlorophenol	µg/Kg	516 U
SW8270C	2,4-Dimethylphenol	µg/Kg	516 U
SW8270C	2,4-Dinitrophenol	µg/Kg	516 U
SW8270C	2,4-Dinitrotoluene	µg/Kg	516 U
SW8270C	2,6-Dinitrotoluene	µg/Kg	516 U
SW8270C	2-Chloronaphthalene	µg/Kg	516 U
SW8270C	2-Chlorophenol	µg/Kg	516 U
SW8270C	2-Methylnaphthalene	µg/Kg	516 U
SW8270C	2-Methylphenol	µg/Kg	516 U
SW8270C	2-Nitroaniline	µg/Kg	1300 U
SW8270C	2-Nitrophenol	µg/Kg	516 U
SW8270C	3,3'-Dichlorobenzidine	µg/Kg	1030 U
SW8270C	3-Nitroaniline	µg/Kg	1300 U
SW8270C	4,6-Dinitro-2-methylphenol	µg/Kg	1300 U
SW8270C	4-Bromophenyl phenyl ether	µg/Kg	516 U
SW8270C	4-Chloro-3-methylphenol	µg/Kg	516 U
SW8270C	4-Chloroaniline	µg/Kg	516 U
SW8270C	4-Chlorophenyl phenyl ether	µg/Kg	516 U
SW8270C	4-Methylphenol	µg/Kg	516 U
SW8270C	4-Nitroaniline	µg/Kg	1300 U
SW8270C	4-Nitrophenol	µg/Kg	1300 U
SW8270C	Acenaphthene	µg/Kg	181 J
SW8270C	Acenaphthylene	µg/Kg	516 U
SW8270C	Anthracene	µg/Kg	660 J
SW8270C	Benz(a)anthracene	µg/Kg	1140 J
SW8270C	Benzo(a)pyrene	µg/Kg	810 J
SW8270C	Benzo(b)fluoranthene	µg/Kg	897 J
SW8270C	Benzo(g,h,i)perylene	µg/Kg	392 J
SW8270C	Benzo(k)fluoranthene	µg/Kg	1160 J
SW8270C	Benzoic acid	µg/Kg	1300 U
SW8270C	Benzyl alcohol	µg/Kg	516 U
SW8270C	Bis(2-chloroethoxy)methane	µg/Kg	516 U
SW8270C	Bis(2-chloroethyl)ether	µg/Kg	516 U
SW8270C	Bis(2-chloroisopropyl)ether	µg/Kg	516 U
SW8270C	Bis(2-ethylhexyl)phthalate	µg/Kg	1100 U
SW8270C	Butyl benzyl phthalate	µg/Kg	516 U
SW8270C	Carbazole	µg/Kg	516 U
SW8270C	Chrysene	µg/Kg	1130 J
SW8270C	Dibenz(a,h)anthracene	µg/Kg	516 U
SW8270C	Dibenzofuran	µg/Kg	68.0 J
SW8270C	Diethyl phthalate	µg/Kg	516 U
SW8270C	Dimethyl phthalate	µg/Kg	516 U

Table A-6
Complete Analytical Data Summary for the Sludge Sample, AOI 473 Year 2002 ESI Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: Date:	G473-RM10-SD01 07/17/02
SW8270C	Di-n-butyl phthalate	µg/Kg	516 U
SW8270C	Di-n-octyl phthalate	µg/Kg	516 U
SW8270C	Fluoranthene	µg/Kg	1690 J
SW8270C	Fluorene	µg/Kg	190 J
SW8270C	Hexachlorobenzene	µg/Kg	516 U
SW8270C	Hexachlorobutadiene	µg/Kg	516 U
SW8270C	Hexachlorocyclopentadiene	µg/Kg	1300 U
SW8270C	Hexachloroethane	µg/Kg	516 U
SW8270C	Indeno(1,2,3-cd)pyrene	µg/Kg	227 J
SW8270C	Isophorone	µg/Kg	516 U
SW8270C	Naphthalene	µg/Kg	101 J
SW8270C	Nitrobenzene	µg/Kg	516 U
SW8270C	N-Nitrosodimethylamine	µg/Kg	516 U
SW8270C	N-Nitrosodi-n-propylamine	µg/Kg	516 U
SW8270C	N-Nitrosodiphenylamine	µg/Kg	516 U
SW8270C	Pentachlorophenol	µg/Kg	1300 U
SW8270C	Phenanthrene	µg/Kg	2210 J
SW8270C	Phenol	µg/Kg	516 U
SW8270C	Pyrene	µg/Kg	1440 J
Metals/Mercury by Method 6010B/7471A (mg/Kg)			
SW6010B	Aluminum	mg/Kg	5530
SW6010B	Antimony	mg/Kg	28.2
SW6010B	Arsendic	mg/Kg	19.1 J
SW6010B	Barium	mg/Kg	190
SW6010B	Beryllium	mg/Kg	12.1 U
SW6010B	Cadmium	mg/Kg	15.9 J
SW6010B	Calcium	mg/Kg	148000
SW6010B	Chromium	mg/Kg	42.5 J
SW6010B	Cobalt	mg/Kg	8.36 J
SW6010B	Copper	mg/Kg	1370
SW6010B	Iron	mg/Kg	114000
SW6010B	Lead	mg/Kg	12200
SW6010B	Magnesium	mg/Kg	4070
SW6010B	Manganese	mg/Kg	801
SW7471A	Mercury	mg/Kg	3.60
SW6010B	Nickel	mg/Kg	58.4
SW6010B	Potassium	mg/Kg	3680
SW6010B	Selenium	mg/Kg	121 U
SW6010B	Silver	mg/Kg	18.6 J
SW6010B	Sodium	mg/Kg	716 J
SW6010B	Thallium	mg/Kg	27.9 J
SW6010B	Thallium	mg/Kg	27.9 J
SW6010B	Vanadium	mg/Kg	12.0 J
SW6010B	Zinc	mg/Kg	2340

Table A-6
Complete Analytical Data Summary for the Sludge Sample, AOI 473 Year 2002 ESI Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: Date:	G473-RM10-SD01 07/17/02
PCBs by Method 8082 (µg/Kg)			
SW8082	Aroclor 1016	µg/Kg	33.2 U
SW8082	Aroclor 1221	µg/Kg	66.4 U
SW8082	Aroclor 1232	µg/Kg	33.2 U
SW8082	Aroclor 1242	µg/Kg	33.2 U
SW8082	Aroclor 1248	µg/Kg	33.2 U
SW8082	Aroclor 1254	µg/Kg	33.2 U
SW8082	Aroclor 1260	µg/Kg	473 J
TRPH by Method 418.1M (mg/Kg)			
EPA418.1	Petroleum Hydrocarbons	mg/Kg	8710
Percent Moisture (wt%)			
ASTM_D2216	Percent Moisture	wt%	44.1

Note: Units of %REC indicate that the compound is a surrogate spike.

Key:

AOI = Area of Interest.
ESI = Expanded Site Investigation.
J = Estimated value. The reported value is below the quantitation limit or estimated due to variance from quality control limits.
µg/Kg = Micrograms per kilogram.
mg/L = Milligrams per kilogram.
PCBs = Polychlorinated Biphenyls.
SD = Sludge sample.
TRPH = Total recoverable petroleum hydrocarbons.
U = Analyte was not detected or not present above background levels. The reported value is the quantitation limit or value elevated due to background.

Table A-7
Complete Analytical Data Summary for Wipe Samples, AOI 473 Year 2002 ESII,
Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: / Date:	G473-RM10-SP01 7/17/02	G473-RM10-SP01/D 7/17/02	G473-RM10-SP02 7/17/02	G473-RM10-SP03 7/17/02	G473-RM10-SP04 7/17/02	G473-RM10-SP05 7/17/02	G473-RM10-SP06 7/17/02	G473-RM10-SP07 7/17/02	G473-RM10-SP08 7/17/02	G473-RM10-SP09 7/17/02	G473-RM10-SP10 7/17/02
Semivolatile Organics by Method 8270C (µg/wipe)													
SW8270C	1,2,4-Trichlorobenzene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	1,2-Dichlorobenzene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	1,3-Dichlorobenzene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	1,4-Dichlorobenzene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	2,4,5-Trichlorophenol	µg/wipe	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
SW8270C	2,4,6-Trichlorophenol	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	2,4-Dichlorophenol	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	2,4-Dimethylphenol	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	2,4-Dinitrophenol	µg/wipe	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
SW8270C	2,4-Dinitrotoluene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	2,6-Dinitrotoluene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	2-Chloronaphthalene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	2-Chlorophenol	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	2-Methylnaphthalene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	2-Methylphenol	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	2-Nitroaniline	µg/wipe	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
SW8270C	2-Nitrophenol	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	3,3´-Dichlorobenzidine	µg/wipe	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
SW8270C	3-Nitroaniline	µg/wipe	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
SW8270C	4,6-Dinitro-2-methylphenol	µg/wipe	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
SW8270C	4-Bromophenyl phenyl ether	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	4-Chloro-3-methylphenol	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	4-Chloroaniline	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	4-Chlorophenyl phenyl ether	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	4-Methylphenol	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	4-Nitroaniline	µg/wipe	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
SW8270C	4-Nitrophenol	µg/wipe	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
SW8270C	Acenaphthene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Acenaphthylene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Anthracene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Benz(a)anthracene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Benzo(a)pyrene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U

Table A-7
Complete Analytical Data Summary for Wipe Samples, AOI 473 Year 2002 ESII,
Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: / Date:	G473-RM10-SP01 7/17/02	G473-RM10-SP01/D 7/17/02	G473-RM10-SP02 7/17/02	G473-RM10-SP03 7/17/02	G473-RM10-SP04 7/17/02	G473-RM10-SP05 7/17/02	G473-RM10-SP06 7/17/02	G473-RM10-SP07 7/17/02	G473-RM10-SP08 7/17/02	G473-RM10-SP09 7/17/02	G473-RM10-SP10 7/17/02
SW8270C	Benzo(b)fluoranthene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Benzo(g,h,i)perylene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Benzo(k)fluoranthene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Benzoic acid	µg/wipe	150 U	150 U	150 U	150 U	150 U	150 U	150 U	150 U	150 U	150 U	150 U
SW8270C	Benzyl alcohol	µg/wipe	5.45 J	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	4.37 J
SW8270C	Bis(2-chloroethoxy)methane	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Bis(2-chloroethyl)ether	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Bis(2-chloroisopropyl)ether	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Bis(2-ethylhexyl)phthalate	µg/wipe	14.3 J	17.8 J	10.4 J	6.64 J	168 J	10.0 U	10.0 U	189 J	2.88 J	10.0 U	5.32 J
SW8270C	Butyl benzyl phthalate	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Carbazole	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Chrysene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Dibenz(a,h)anthracene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Dibenzofuran	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Diethyl phthalate	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Dimethyl phthalate	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Di-n-butyl phthalate	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Di-n-octyl phthalate	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Fluoranthene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Fluorene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Hexachlorobenzene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Hexachlorobutadiene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Hexachlorocyclopentadiene	µg/wipe	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
SW8270C	Hexachloroethane	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Indeno(1,2,3-cd)pyrene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Isophorone	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Naphthalene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Nitrobenzene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	N-Nitrosodimethylamine	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	N-Nitrosodi-n-propylamine	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	N-Nitrosodiphenylamine	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Pentachlorophenol	µg/wipe	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U	50.0 U
SW8270C	Phenanthrene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U

Table A-7
Complete Analytical Data Summary for Wipe Samples, AOI 473 Year 2002 ESII,
Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: / Date:	G473-RM10-SP01 7/17/02	G473-RM10-SP01/D 7/17/02	G473-RM10-SP02 7/17/02	G473-RM10-SP03 7/17/02	G473-RM10-SP04 7/17/02	G473-RM10-SP05 7/17/02	G473-RM10-SP06 7/17/02	G473-RM10-SP07 7/17/02	G473-RM10-SP08 7/17/02	G473-RM10-SP09 7/17/02	G473-RM10-SP10 7/17/02
SW8270C	Phenol	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
SW8270C	Pyrene	µg/wipe	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Metals/Mercury by 6010B/7471A (µg/wipe)													
SW6010B	Aluminum	µg/wipe	9170 J	4190 J	3320	2850	9180	1650	1980	2600	2420	2500	5170
SW6010B	Antimony	µg/wipe	5.38 U	7.15 U	50.0 U	10.0 U	10.0 U	10.0 U	5.00 U	6.75 U	2.70 U	5.00 U	11.6 J
SW6010B	Arsenic	µg/wipe	5.54	5.00 U	50.0 U	10.0 U	8.99 J	10.0 U	5.00 U	2.48 J	0.671 J	5.00 U	25.0 U
SW6010B	Barium	µg/wipe	134 J	73.4 J	57.6 J	101	155	53.1	100	95.9	180	87.3	130
SW6010B	Beryllium	µg/wipe	0.654 J	2.50 U	25.0 U	5.00 U	5.00 U	5.00 U	2.50 U	2.50 U	1.00 U	2.50 U	12.5 U
SW6010B	Cadmium	µg/wipe	26.6 J	15.8 J	11.2 J	18.3	21.0	101	9.73	12.1	14.6	19.2	17.8
SW6010B	Calcium	µg/wipe	79200 J	38000 J	25300	29100	102000	15700	20400	21300	18300	13600	55800
SW6010B	Chromium	µg/wipe	93.9 J	28.4 J	75.6	26.7	57.1	17.1	14.1	19.5	15.7	22.9	37.3
SW6010B	Cobalt	µg/wipe	13.4	5.60 J	9.75 J	5.44 J	10.4 J	3.99 J	1.99 J	3.56 J	3.13 J	18.3	50.0 U
SW6010B	Copper	µg/wipe	283 J	123 J	335	100	86.1	94.9	1720	45.1	80.6	192	41500
SW6010B	Iron	µg/wipe	81100 J	34600 J	314000	87000	45900	128000	35800	7790	12900	9510	19500
SW6010B	Lead	µg/wipe	2780 J	1170 J	539	571	461	327	405	208	258	188	1910
SW6010B	Magnesium	µg/wipe	3980 J	1840 J	1420 J	1860	5150	1030	1340	1650	1250	1160	4490
SW6010B	Manganese	µg/wipe	5030 J	1640 J	1020	259	410	315	127	95.3	77.7	81.5	197
SW7471A	Mercury	µg/wipe	20.1	21.9	124	67.4	45.5	35.3	29.0	14.9	25.9	14.2	0.576
SW6010B	Nickel	µg/wipe	83.9 J	31.6 J	139	22.0	30.0	158	13.1	8.93 J	9.38	20.7	23.3 J
SW6010B	Potassium	µg/wipe	4980 J	2280 J	23100	29000	56700	7070	18200	37000	11100	3670	32500
SW6010B	Selenium	µg/wipe	5.00 U	5.00 U	50.0 U	10.0 U	10.0 U	10.0 U	5.00 U	5.00 U	2.00 U	5.00 U	25.0 U
SW6010B	Silver	µg/wipe	32.5 J	5.87 J	50.0 U	3.42 J	5.94 J	2.23 J	1.39 J	3.93 J	15.5	1.81 J	5.74 J
SW6010B	Sodium	µg/wipe	1160 U	679 U	7840	14400	28600	2650 U	7310 U	17200	4350 U	1220 U	11600
SW6010B	Sodium	µg/wipe	1160 U	679 U	7840	14400	28600	2650 U	7310 U	17200	4350 U	1220 U	11600
SW6010B	Thallium	µg/wipe	14.8 J	7.97 J	21.7 J	6.16 J	12.1	6.38 J	4.76 J	5.00 U	2.45 U	5.00 U	11.4 J
SW6010B	Vanadium	µg/wipe	26.0 J	12.7 J	65.0 J	26.4	31.3	13.8 J	9.69 J	8.79 J	6.27	4.20 J	15.5 J
SW6010B	Zinc	µg/wipe	1680 J	713 J	1010	639	1320	428	394	372	448	346	1560

Table A-7
Complete Analytical Data Summary for Wipe Samples, AOI 473 Year 2002 ESII,
Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: / Date:	G473-RM10-SP01 7/17/02	G473-RM10-SP01/D 7/17/02	G473-RM10-SP02 7/17/02	G473-RM10-SP03 7/17/02	G473-RM10-SP04 7/17/02	G473-RM10-SP05 7/17/02	G473-RM10-SP06 7/17/02	G473-RM10-SP07 7/17/02	G473-RM10-SP08 7/17/02	G473-RM10-SP09 7/17/02	G473-RM10-SP10 7/17/02
PCBs by Method 8082 (µg/wipe)													
SW8082	Aroclor 1016	µg/wipe	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	4.50 U	1.50 U	1.50 U	1.50 U
SW8082	Aroclor 1221	µg/wipe	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	9.00 U	3.00 U	3.00 U	3.00 U
SW8082	Aroclor 1232	µg/wipe	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	4.50 U	1.50 U	1.50 U	1.50 U
SW8082	Aroclor 1242	µg/wipe	1.50 U	1.50 U	2.09	2.01	1.50 U	1.50 U	0.402 J	4.50 U	1.50 U	1.50 U	1.50 U
SW8082	Aroclor 1248	µg/wipe	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	4.50 U	1.50 U	1.50 U	1.50 U
SW8082	Aroclor 1254	µg/wipe	1.73	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	1.50 U	4.50 U	1.50 U	1.50 U	1.50 U
SW8082	Aroclor 1260	µg/wipe	1.50 U	1.50 U	1.58	1.62	1.50 U	1.50 U	1.50 U	4.50 U	1.50 U	1.50 U	1.50 U
TRPH by Method 418.1M (mg/wipe)													
EPA418.1	Petroleum Hydrocarbons	mg/wipe	1650 J	879 J	3020	5580	4850	3970	7260	7190	1960	4820	3020

Note: Units of %REC indicate that the compound is a surrogate spike.

Key:

AOI = Area of Interest.
ESI = Expanded Site Investigation.
J = Estimated value. The reported value is below the quantitation limit or estimated due to variance from quality control limits.
µg/wipe = Micrograms per wipe.
mg/wipe = Milligrams per wipe.
NA = Not analyzed or reported.
PCBs = Polychlorinated Biphenyls.
SP = Wipe sample.
TRPH = Total recoverable petroleum hydrocarbons.
U = Analyte was not detected or not present above background levels. The reported value is the quantitation limit or value elevated due to background.

Table A-8
Complete Analytical Data Summary for the Field Blank Wipe Samples, AOI 473 Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: / Date:	FIELDQC-FB473-RM10-SP1 / 07/17/02
Semivolatile Organics by Method 8270C (µg/wipe)			
SW8270C	1,2,4-Trichlorobenzene	µg/wipe	10.0 U
SW8270C	1,2-Dichlorobenzene	µg/wipe	10.0 U
SW8270C	1,3-Dichlorobenzene	µg/wipe	10.0 U
SW8270C	1,4-Dichlorobenzene	µg/wipe	10.0 U
SW8270C	2,4,5-Trichlorophenol	µg/wipe	50.0 U
SW8270C	2,4,6-Trichlorophenol	µg/wipe	10.0 U
SW8270C	2,4-Dichlorophenol	µg/wipe	10.0 U
SW8270C	2,4-Dimethylphenol	µg/wipe	10.0 U
SW8270C	2,4-Dinitrophenol	µg/wipe	50.0 U
SW8270C	2,4-Dinitrotoluene	µg/wipe	10.0 U
SW8270C	2,6-Dinitrotoluene	µg/wipe	10.0 U
SW8270C	2-Chloronaphthalene	µg/wipe	10.0 U
SW8270C	2-Chlorophenol	µg/wipe	10.0 U
SW8270C	2-Methylnaphthalene	µg/wipe	10.0 U
SW8270C	2-Methylphenol	µg/wipe	10.0 U
SW8270C	2-Nitroaniline	µg/wipe	50.0 U
SW8270C	2-Nitrophenol	µg/wipe	10.0 U
SW8270C	3,3′-Dichlorobenzidine	µg/wipe	20.0 U
SW8270C	3-Nitroaniline	µg/wipe	50.0 U
SW8270C	4,6-Dinitro-2-methylphenol	µg/wipe	50.0 U
SW8270C	4-Bromophenyl phenyl ether	µg/wipe	10.0 U
SW8270C	4-Chloro-3-methylphenol	µg/wipe	10.0 U
SW8270C	4-Chloroaniline	µg/wipe	10.0 U
SW8270C	4-Chlorophenyl phenyl ether	µg/wipe	10.0 U
SW8270C	4-Methylphenol	µg/wipe	10.0 U
SW8270C	4-Nitroaniline	µg/wipe	50.0 U
SW8270C	4-Nitrophenol	µg/wipe	50.0 U
SW8270C	Acenaphthene	µg/wipe	10.0 U
SW8270C	Acenaphthylene	µg/wipe	10.0 U
SW8270C	Anthracene	µg/wipe	10.0 U
SW8270C	Benz(a)anthracene	µg/wipe	10.0 U
SW8270C	Benzo(a)pyrene	µg/wipe	10.0 U
SW8270C	Benzo(b)fluoranthene	µg/wipe	10.0 U
SW8270C	Benzo(g,h,i)perylene	µg/wipe	10.0 U
SW8270C	Benzo(k)fluoranthene	µg/wipe	10.0 U
SW8270C	Benzoic acid	µg/wipe	150 U
SW8270C	Benzyl alcohol	µg/wipe	10.0 U
SW8270C	Bis(2-chloroethoxy)methane	µg/wipe	10.0 U
SW8270C	Bis(2-chloroethyl)ether	µg/wipe	10.0 U
SW8270C	Bis(2-chloroisopropyl)ether	µg/wipe	10.0 U
SW8270C	Bis(2-ethylhexyl)phthalate	µg/wipe	10.0 U
SW8270C	Butyl benzyl phthalate	µg/wipe	10.0 U
SW8270C	Carbazole	µg/wipe	10.0 U
SW8270C	Chrysene	µg/wipe	10.0 U
SW8270C	Dibenz(a,h)anthracene	µg/wipe	10.0 U
SW8270C	Dibenzofuran	µg/wipe	10.0 U
SW8270C	Diethyl phthalate	µg/wipe	10.0 U
SW8270C	Dimethyl phthalate	µg/wipe	10.0 U
SW8270C	Di-n-butyl phthalate	µg/wipe	10.0 U
SW8270C	Di-n-octyl phthalate	µg/wipe	10.0 U

Table A-8
Complete Analytical Data Summary for the Field Blank Wipe Samples, AOI 473 Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Method	Analyte	Sample ID: / Date:	FIELDQC-FB473-RM10-SP1 / 07/17/02
SW8270C	Fluoranthene	µg/wipe	10.0 U
SW8270C	Fluorene	µg/wipe	10.0 U
SW8270C	Hexachlorobenzene	µg/wipe	10.0 U
SW8270C	Hexachlorobutadiene	µg/wipe	10.0 U
SW8270C	Hexachlorocyclopentadiene	µg/wipe	50.0 U
SW8270C	Hexachloroethane	µg/wipe	10.0 U
SW8270C	Indeno(1,2,3-cd)pyrene	µg/wipe	10.0 U
SW8270C	Isophorone	µg/wipe	10.0 U
SW8270C	Naphthalene	µg/wipe	10.0 U
SW8270C	Nitrobenzene	µg/wipe	10.0 U
SW8270C	N-Nitrosodimethylamine	µg/wipe	10.0 U
SW8270C	N-Nitrosodi-n-propylamine	µg/wipe	10.0 U
SW8270C	N-Nitrosodiphenylamine	µg/wipe	10.0 U
SW8270C	Pentachlorophenol	µg/wipe	50.0 U
SW8270C	Phenanthrene	µg/wipe	10.0 U
SW8270C	Phenol	µg/wipe	10.0 U
SW8270C	Pyrene	µg/wipe	10.0 U
Metals/Mercury Analysis by Method 6010B/7471A (µg/wipe)			
SW6010B	Aluminum	µg/wipe	12.4
SW6010B	Antimony	µg/wipe	1.81
SW6010B	Arsenic	µg/wipe	1.00 U
SW6010B	Barium	µg/wipe	1.25 J
SW6010B	Beryllium	µg/wipe	0.500 U
SW6010B	Cadmium	µg/wipe	0.500 U
SW6010B	Calcium	µg/wipe	462
SW6010B	Chromium	µg/wipe	1.00 U
SW6010B	Cobalt	µg/wipe	2.00 U
SW6010B	Copper	µg/wipe	0.974 J
SW6010B	Iron	µg/wipe	20.4
SW6010B	Lead	µg/wipe	2.29
SW6010B	Magnesium	µg/wipe	164
SW6010B	Manganese	µg/wipe	1.88
SW7471A	Mercury	µg/wipe	0.0200 U
SW6010B	Nickel	µg/wipe	2.00 U
SW6010B	Potassium	µg/wipe	49.0 J
SW6010B	Selenium	µg/wipe	1.00 U
SW6010B	Silver	µg/wipe	1.00 U
SW6010B	Sodium	µg/wipe	1550
SW6010B	Sodium	µg/wipe	1550
SW6010B	Thallium	µg/wipe	0.765 J
SW6010B	Vanadium	µg/wipe	2.00 U
SW6010B	Zinc	µg/wipe	4.26

Note: Units of %REC indicate that the compound is a surrogate spike.

Key:

AOI = Area of Interest.
ESI = Expanded Site Investigation.
FB = Field blank sample.
J = Estimated value. The reported value is below the quantitation limit or estimated due to variance from quality control limits.
µg/wipe = Micrograms per wipe.
SP = Wipe sample.
U = Analyte was not detected or not present above background levels. The reported value is the quantitation limit or value elevated due to background.

B Calculation of Risk-Based Screening Level for Surface Wipe Samples

Calculation of Risk-Based Screening Level for Surface Wipe Samples

Screening criteria for wipe samples were developed in a manner similar to a method that was used by EPA to develop the TSCA screening criteria for PCBs, based on potential cancer risk from dermal exposure, which was presented in a 1986 memorandum. To develop a residential screening level for "low-contact" surfaces (walls, floors, stairs), EPA assumed that a resident over his lifetime would come into direct contact with 110 ft^2 (or 130,000 cm^2) of surface uniformly contaminated with PCBs.

At that time, the PCB screening value of 10 µg/100 cm^2 was apparently calculated as follows:

$$RBSL = \frac{TCR \times 1000\ \mu g/mg \times BW \times AT}{CSF \times AF \times SA}$$

Where:

RBSL = Risk-based screening level	
TCR = target cancer risk = 1E-6	(EPA "acceptable" risk benchmark)
BW = body weight = 50 kg	(assumed in 1986)
AT = Averaging time = 25,550 days	(equivalent to 70 year lifetime)
CSF = Cancer slope factor = 4 $(mg/kg\text{-}day)^{-1}$	(toxicity value for PCBs in effect in 1986)
AF = Absorption fraction = 0.03	(assumed for PCBs in 1986)
SA = Surface area contacted = 103,000 cm^2	(assumed in 1986)

$$RBSL = \frac{1E\text{-}6 \times 1000\ \mu g/mg \times 50\ kg \times 25{,}550\ days}{4\ /(mg/kg\text{-}day) \times 0.03 \times 103{,}000\ cm^2} = 0.1\ \mu g/cm^2 \text{ or } 10\ \mu g/100\ cm^2$$

Since the 1986 assessment, EPA has revised the SF for PCB and the recommendation for dermal absorption. The current SF for PCBs is 2 /(mg/kg-day) and the recommended dermal absorption fraction (for soil exposure) is 0.14. The standard default BW has also been revised to 70 kg for adults.

Using these current values, the RBSL calculated for PCBs would be:

$$RBSL = \frac{1E\text{-}6 \times 1000\ \mu g/mg \times 70\ kg \times 25{,}550\ days}{2\ /(mg/kg\text{-}day) \times 0.14 \times 103{,}000\ cm^2} = 0.06\ \mu g/cm^2 \text{ or } 6\ \mu g/100\ cm^2$$

Surface area screening criteria were developed for other carcinogenic chemicals using the same equation and exposure input values but substituting current chemical-specific SF values and recommended dermal absorption factors (obtained from EPA Superfund sources).

Surface area screening criteria were similarly derived for non-carcinogens using a target hazard quotient (THQ) of 1.0 and the following equation:

$$RBSL = \frac{RfD \times 1000\ \mu g/mg \times BW \times AT}{AF \times SA \times 1/THQ}$$

Where:

RBSL = Risk-based screening level	
RfD = Reference dose	(current chemical specific toxicity value)
BW = body weight = 70 kg	(current standard default body weight)
AT = Averaging time = 25,550 days	(equivalent to 70 year lifetime)
AF = Absorption fraction (unitless)	(recommended value in current guidance)
SA = Surface area contacted = 103,000 cm^2	(same as assumed in 1986)
THQ = Target hazard quotient = 1.0	(EPA "acceptable" risk benchmark)

The chemical-specific input values and the resulting RBSLs for wipe samples are listed in Table 1. For a few chemicals lacking toxicity values, surrogate RfD values were adopted from other chemicals with similar structures. These are indicated with an asterisk (*).

There are no EPA-approved toxicity values for lead, however, EPA has established an action level for lead in drinking water that is health-based (15 µg/L). This action level was used with standard default exposure assumptions to calculate an acceptable amount of lead intake over a lifetime, and then the surface lead level that would give an equivalent intake. The surface wipe screening level for lead was calculated as follows:

$$RBSL = AL \times IR \times ED/(AF \times SA)$$

Where:

RBSL = Risk-based screening level	
AL = Action level for drinking water = 15 µg/L	(Federal primary drinking water standard)
IR = Ingestion rate = 2 L/day	(standard default water ingestion rate)
ED = Exposure duration = 25,550 days	(equivalent to 70 year lifetime)
AF = Absorption fraction = 0.001	(recommended value in current guidance)
SA = Surface area contacted = 103,000 cm^2	(same as assumed in 1986)

$$RBSL = 15\ \mu g/L \times 2L/day \times 25550\ day / (0.001 \times 103{,}000\ cm^2)$$

$$= 700\ \mu g/cm^2 \quad \text{or} \quad 70{,}000\ \mu g/100\ cm^2$$

Because of the many uncertainties associated with the calculations, the final RBSLs were rounded to 1 significant figure.

Table B-1
Calculations of RBSLs for Screening the Results of the Wipe Samples, AOI 473 Year 2002 ESI, Former Griffiss Air Force Base, Rome, New York

Parameter	Dermal AF	GI AF	SFo	RfDo	SFd	RfDd	RBSLc (mg/100cm2)	RBSLnc (mg/100cm2)	final RBSL (mg/100cm2)
PCBs by Method 8082 (µg/wipe)									
Aroclor 1242	0.14	1	2	--	2	--	6	--	**6**
Aroclor 1254	0.14	1	2	0.00002	2	0.00002	6	35	**6**
Aroclor 1260	0.14	1	2	--	2	--	6	--	**6**
Semivolatiles (µg/wipe)									
Benzyl alcohol	0.1	1	--	0.3	--	0.3	--	520,922	**500,000**
Bis(2-ethylhexyl)phthalate	0.1	0.5	0.014	0.02	0.028	0.04	620	138,913	**600**
Metals/Mercury by Method 6010B/7471A (µg/wipe)									
Aluminum	0.001	0.05	--	2.9	--	58	--	2,014,233,010	**2,000,000,000**
Antimony	0.001	0.15	--	0.0004	--	0.00267	--	30,869	**30,000**
Arsenic	0.03	1	1.5	0.0003	1.5	0.0003	39	521	**40**
Barium	0.001	0.07	--	0.07	--	1	--	24,805,825	**20,000,000**
Beryllium	0.001	0.007	--	0.002	--	0.28571	--	70,873,786	**70,000,000**
Cadmium	0.001	0.05	--	0.0005	--	0.01	--	347,282	**300,000**
Calcium	--	--	--	--	--	--	--	--	**--**
Chromium	0.001	0.013	--	1.5	--	115.385	--	15,411,903,257	**20,000,000,000**
Cobalt	0.001	1	--	0.06	--	0.06	--	104,184	**100,000**
Copper	0.001	1	--	0.0371	--	0.0371	--	64,421	**60,000**
Iron	0.001	0.1	--	0.3	--	3	--	52,092,235	**50,000,000**
Lead	0.001	1	--	--	--	--	--	--	**70,000**
Magnesium	--	--	--	--	--	--	--	--	**--**
Manganese	0.001	0.04	--	0.02	--	0.5	--	21,705,097	**20,000,000**
Mercury	0.001	0.07	--	0.003	--	0.04286	--	1,063,107	**1,000,000**
Nickel	0.001	0.04	--	0.02	--	0.5	--	21,705,097	**20,000,000**
Potassium	--	--	--	--	--	--	--	--	**--**
Silver	0.001	0.04	--	0.005	--	0.125	--	5,426,274	**5,000,000**
Sodium	--	--	--	--	--	--	--	--	**--**
Thallium	0.001	1	--	0.00007	--	0.00007	--	122	**100**
Vanadium	0.001	0.026	--	0.007	--	0.26923	--	17,980,554	**20,000,000**
Zinc	0.001	1	--	0.3	--	0.3	--	520,922	**500,000**
TRPH by Method 418.1M (mg/wipe)									
Petroleum Hydrocarbons	--	--	--	--	--	--	--	--	**--**

Key:

AF = Absorption Factor.
AOI = Area of Interest.
ESI = Expanded Site Investigation.
c = Carcinogen.
cm^2 = Square centimeters.
GI = Gastrointestinal
µg = Micrograms.
mg = Milligrams.
nc = Noncarcinogen.
PCBs = Polychlorinated biphenyls.
RfDd = Reference dose, dermal.
RBSL = Risk-based screening levels.
RfDo = Reference dose, oral.
SFd = Slope Factor, dermal.
SFo = Slope Factor, oral.
TRPH = Total recoverable petroleum hydrocarbons.
-- = Not available.

Key at the end of Table.

C Letter from City of Rome Water Pollution Control Facility

William Baynes
Chief Operator

David Marino
Working Supervisor

Joseph A. Griffo
Mayor

CITY OF ROME
WATER POLLUTION CONTROL FACILITY
7180 East Dominick Street • Rome, New York 13440

June 19, 2002

Ecology and Environment, Inc.
Buffalo Corporate Center
368 Pleasant View Drive
Lancaster, New York 14086

RE: Discharge of Water from Building 211 @ Griffiss AFB

Dear Mr. Robert Meyers

After a review of the analysis of water which was collected from the pipe vault and request letter dated June 17, 2002, permission is hereby granted to discharge the water if the following conditions are met:

1. You or a qualified representative of your company inform the Control Facility the time and date you wish to discharge at least 48 hours prior to discharge.

2. Wastewater is discharged to a specified manhole on site, but only after manhole has been mutually agreed upon by City personnel and your company.

3. Fee of four ($0.04) cents a gallon is required to discharge this wastewater.

4. Permission may be withdrawn, if discharge causes pass through or interference or causes operation problems at the POTW.

If you have any questions please call 315-339-7775.

Sincerely
William Baynes

William Baynes
Chief Operator

File: special request

D Daily Activity Summaries

Daily Activity Summary

Date: 7-24-02 & 7-25-02 | **Report No.:** 08 & 09

Project Name: GAFB WAD 9 Field Program | **Weather:** 70°, Sunny / 75° Nice

	Personnel	Hrs.	Affiliation	Personnel	Hrs.	Affiliation
7-24-02	B. Meyers	11	E&E			
	S. Reynolds Smith	11	E&E			
	Will Mualliga	8	Zebra			
	Tim Siciliano	8	Zebra			
7-25-02	B. Meyers	11	E&E			
	S. Reynolds Smith	11	E&E			
	Will Mualliga	6	Zebra			
	Tim Siciliano	6	Zebra			

Summary of Activities

	Equipment	AOC/Task	Activities Performed
7-24-02	TVA1000 O2/Exp W.L. Indicator Camera	AOC 9	• Completed GP Survey. • Installed/Sampled 2 Soil borings.
7-25-02	Same as above	AOC 9	• Collected a full Round of W.L's • Secured area & demobed.
		Building 211	Installed 4 to 5" concrete slab on floor of Pipe Vault.

Daily Activity Summary

Date: 7-23-02	**Report No.:** 07
Project Name: GAFB WAD 9 Field Program	**Weather:** 70°, Sunny, less Humid

Personnel	Hrs.	Affiliation	Personnel	Hrs.	Affiliation
B. Meyers	11	E&E			
S. Reynolds Smith	11	E&E			
Dom Pino	10	Zebra			
Matt Ednie	10	Zebra			

Summary of Activities

Equipment	AOC/Task	Activities Performed
TVA 1000	AOC 9	Con't AOC 9 GP Survey &
O2/EXP.		Performed 2nd Dye Trace Test
W.L. Indicator		@ OTH305
Camera		

Daily Activity Summary

Date: 7-~~17~~-02 wed. **Report No.:** 03

Project Name: WAD9 Field Program **Weather:** 70°-85° Humid, Poss. T-storms

Personnel	Hrs.	Affiliation	Personnel	Hrs.	Affiliation
R. Meyers	12	E+E			
B. Lerri	12	E+E			
S. Reynolds	12	E+E			
C. Taber	12	E+E			
Phil Orsi	11	~~E+E~~ Zebra			
Dom. Pino	11	~~E+E~~ Zebra			

Summary of Activities

Equipment	AOC/Task	Activities Performed
TVA1000	AOC 9/	Installed & Sampled 12 GP
O2/Exp	GP Survey	points
W.L. Indicator		
	AOI 473	Completed Swipe/Sed. Sampling
	Sampling	

Daily Activity Summary

Date: Monday 7-15-02 | **Report No.:** 01

Project Name: GAFB WAD9 Field Program | **Weather:** 70°-86° Humid, Partly Cloudy

Personnel	Hrs.	Affiliation	Personnel	Hrs.	Affiliation
R. Meyers	12+	E+E			
B. Cervi	12+	E+E			
S. Reynolds	12+	E+E			
Phil Orsi	8) hours	Zebra			
Dominic Pino	8) on	Zebra			
Ethan Plank	8) site	Zebra			

Summary of Activities

Equipment	AOC/Task	Activities Performed
TVA 1000	AOC 9	Began Geoprobe Survey
O2/Exp	↓	Collected GP44D2. Also collected
W.L. Indicator	↓	2 Sed. Samples from AFFF lagoon.
↓	PCI20	Collected 3-NS soil Samples
		for lead (Site Compete)
		* Also Completed Initial Decon.
		and set up for Drilling Project.

E Investigation-Derived Waste Inventory

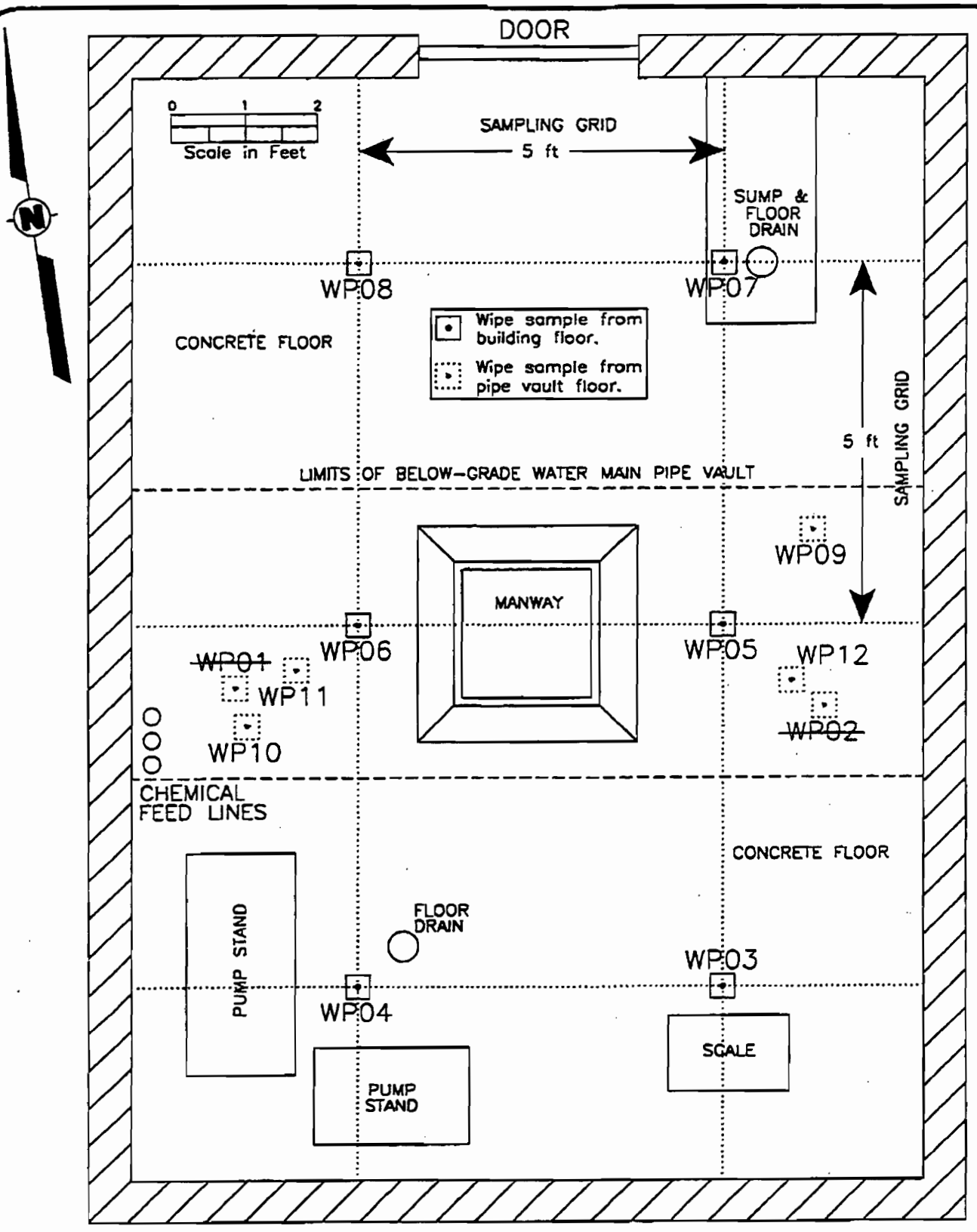
INVESTIGATION-DERIVED WASTE INVENTORY SHEET

Site: Former GAFB, OTH-305 No. of Drums: 3

Inventory Date: 5-9-02

Waste Source	Drum/Container ID Number	Date Generated	Contents (Solid, Liquids, etc.)	Approximate Volume	Drum Location/Comments
Building 305 Paint Booth floor Drain Pit. ↓	OTH305-Drum #1	5-7-02	Waste Water	Full	Building 305
	OTH305-Drum #2	5-7-02	sludge.	1/3 Full	"
	OTH305 Drum #3	5-7-02	Rinse Water	1/2 Full	"

F Removal Action for Drywells and Miscellaneous Sites Building 211 Wipe Sample Location Figure



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-A18

FIGURE 3-3

BLDG. 211 CONFIRMATION MERCURY WIPE SAMPLING LOCATIONS

FORMER GRIFFISS AIR FORCE BASE
ROME, NEW YORK

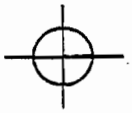
PREPARED FOR

AFCEE
BROOKS AIR FORCE BASE, TEXAS

CAD File: .549-A0

SYMBOLS


Drywell location


Groundwater sample from temporary well point


Geoprobe soil boring sample


Geoprobe soil boring and/or groundwater sample


Soil sample


Wipe sample


Hand auger sample


Water sample


Utility pole

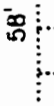

Asphalt


Concrete


Grass


Building wall

MEASURED DISTANCES



58' ... Distance along indicated baseline

13.3' ... Distance from indicated baseline

SAMPLE NUMBER PREFIXES

AI90	Area of Interest 90
B211	Building 211
D100	Drywell 100
D842	Drywell 842
D846	Drywell 846
PCB1	Perimeter Road PCB Pad
PCI7	Panamerican Consultants Site 7

SAMPLE NUMBERS

SSnn	Surface soil sample
WPnn	Wipe sample
GWnn	Groundwater sample
SDnn	Sediment sample
WAnn	Water sample
SLnn	Sludge sample
SBnn	Soil boring sample
DMn	Drum sample

OHM Remediation Services Corp.
OHM Project No. 917549

Drawn By:	Checked By:	Approved By:
S. McGinn	M. Quinlan	M. Quinlan
Date:	Scale:	Drawing No.
10/29/00	AS SHOWN	917549-A0

FIGURE 1-2
MAP SYMBOLS AND NOTATIONS
FORMER GRIFFISS AIR FORCE BASE
ROME, NEW YORK
PREPARED FOR
AFCEE
BROOKS AIR FORCE BASE, TEXAS

Plot Scale: 1 = 1 revision 0