FINAL

INTERIM REMEDIAL ACTION REPORT
FOR
SMALL ARMS RANGE/HARDFILL 49A
AT THE FORMER GRIFFISS AIR FORCE BASE, ROME, NEW YORK
PROJECT NO. JREZ-2000-7005

CONTRACT: F41624-01-D-8544
TASK ORDER: 0002
CDRL #A012, A013, A014, A016, A025, A027, B006

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SEPTEMBER 2003

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LIST OF ACRONYMS

AFRPA	Air Force Real Property Agency
AFCEE	Air Force Center for Environmental Excellence
AMSL	Above Mean Sea Level
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CoC	Chain of Custody
C&D	Construction and Demolition
CLP	Contract Laboratory Program
DQO	Data Quality Objectives
EE/CA	Engineering Evaluation/Cost Analysis
EPA	Environmental Protection Agency
GAFB	Griffiss Air Force Base
GC/MS	Gas Chromatography/Mass Spectroscopy
HASP	Health and Safety Plan
HEPA	High Efficiency Particulate Arresting
ICS	Interference Check Standard
IRP	Installation Restoration Program
LCS	Laboratory Control Sample
mg/L	milligrams per Liter
MS/MSD	Matrix Spike/ Matrix Spike Duplicate
NYSDEC	New York State Department of Environmental Conservation
PPE	Personal Protective Equipment
ppm	parts per million
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
QC	Quality Control
RAR	Remedial Action Report
RL	Reporting Limit
RPD	Relative Percent Difference
SAR	Small Arms Range
SAR/HF49A	Small Arms Range/Hardfill 49A
TAGM	Technical and Administrative Guidance Memorandum
TAL	Target Analyte List
TCLP	Toxicity Characteristic Leaching Procedure
USEPA	United States Environmental Protection Agency

SECTION 1
INTRODUCTION

This Remedial Action Report (RAR) details the work completed as proposed in the Small Arms Range/Hardfill 49A (SAR/HF49A) Environmental Cleanup Plan (Parsons, June 2002). The work was conducted for the Air Force Center for Environmental Excellence (AFCEE) under Project No. JREZ 2000-7005. The objective of the cleanup was to obtain regulatory site closure by remediation of the SAR/HF49A area to a soil cleanup goal of 400 mg/kg for total lead and to evaluate Environmental Protection Agency (EPA) Target Analyte List (TAL) metals in the soil.

1.1 SUMMARY

Approximately 10,325 cubic yards of soil and hardfill material was excavated, screened and segregated. Approximately 6,600 cubic yards (10,200 tons) of non-hazardous contaminated soil and debris was shipped off-site for disposal. Post-excavation confirmation samples were collected from soils remaining in the SAR/HF49A area and analyzed. Analysis included total Target Analyte List (TAL) metals, specifically lead, and leachable lead by Toxicity Characteristic Leaching Procedure (TCLP).

The site was backfilled and graded with clean soils to match surrounding grades and promote positive drainage. Vegetative growth was established.

1.2 CONCLUSIONS

- All soil in the SAR/HF49A area has been remediated to the soil cleanup goal of 400 mg/kg for total lead and 5 mg/L for lead by TCLP.
- TAL metals have been evaluated by comparison to New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) 4046. Based on this evaluation, all TAL metals are within acceptable guidance values.

1.3 PROJECT BACKGROUND

The SAR/HF49A area (Figure 1.1) was originally a Small Arms Range (SAR) only. The original SAR included a soil berm/backstop at 100 yards. The 100-yard backstop was demolished and a new 50-yard backstop was created. The footprint between the former 100-yard backstop and the existing 50-yard backstop was later used for disposal of hardfill in conjunction with Hardfill 49A operations.

SAR/HF49A was used informally for the placement of hardfill material and other non-hazardous materials over an undetermined period of time. The hardfill area received an assortment of construction and demolition (C&D) debris. This hardfill area was not a permitted disposal area.

Hardfill within the north basin (Figure 1.2) of the SAR/HF49A area was consolidated and a soil cover was installed, in Fall 1998, to mitigate or eliminate exposure risks associated with possible surface soil contamination at the site, and to provide an area consistent with future base reuse strategies.

Post closure activities at SAR/HF49A, included an Interim Remedial Action in 1998/1999, in which approximately 11,800 tons of lead-contaminated soil was removed from the berm/backstop and a subsequent test pit investigation in Spring 1999. The results of the test pit investigations indicated that lead contamination appeared throughout the consolidated hardfill materials, and the lead was derived from several sources including bullets, bullet fragments, lead paint and other lead-containing materials.

Based on the test pit investigation report recommendations (PEER, 1999), an Engineering Evaluation/Cost Analysis (EE/CA) was prepared by the FPM Group (FPM). The EE/CA (FPM, May 2002) recommended excavation of contaminated soil, mechanical separation of debris from contaminated soil and off-site disposal of contaminated soil.

1.4 SITE LOCATION AND HISTORY

SAR/HF49A (Figure 1.2) is located within the former Griffiss Air Force Base (GAFB). The former GAFB is located in Oneida County, New York, approximately two miles northeast of the city of Rome in central New York State. The base property covers approximately 3,540 acres and is situated in the relatively broad valley of the Mohawk River, at an average elevation of 504 feet above mean sea level (AMSL).

GAFB was established in 1942 as a Strategic Air Command bomber support installation. The 416th Bombardment Wing was the host unit at GAFB. The 416th Bombardment Wing's mission was maintenance and implementation of effective air refueling operations, while providing long-range bombardment capability on a global scale. GAFB was realigned as part of a nationwide base realignment and closure in October 1995, and much of its mission has since been transferred to other locations.

On 22 July 1987, the base was listed on the United States EPA National Priority List, which brought the installation under the federal facilities provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 120. In August 1990, the Air Force, the EPA, and the NYSDEC entered into a Federal Facility Agreement.

As part of the various national defense missions carried out at GAFB between 1942 and 1995, hazardous substances and wastes were used and disposed of at numerous locations on the base. In 1981, GAFB initiated a process for identifying and cleaning up sites under the Installation Restoration Program (IRP). Several sites were identified as IRP sites, including the SAR/HF49A site.

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1.6 CONTRACT DELIVERABLES

This report satisfies the following contract deliverable items:

Remedial Action Report	CDRL A012
Analytical Data Report Package	CDRL A013
Environmental Site/Project Summary	CDRL A014
Status Report (Field Reports)	CDRL A016
Hazardous Waste Disposal Report	CDRL A025
As-Built Drawings	CDRL A027
Digital Imaging	CDRL B006

1.7 REFERENCES

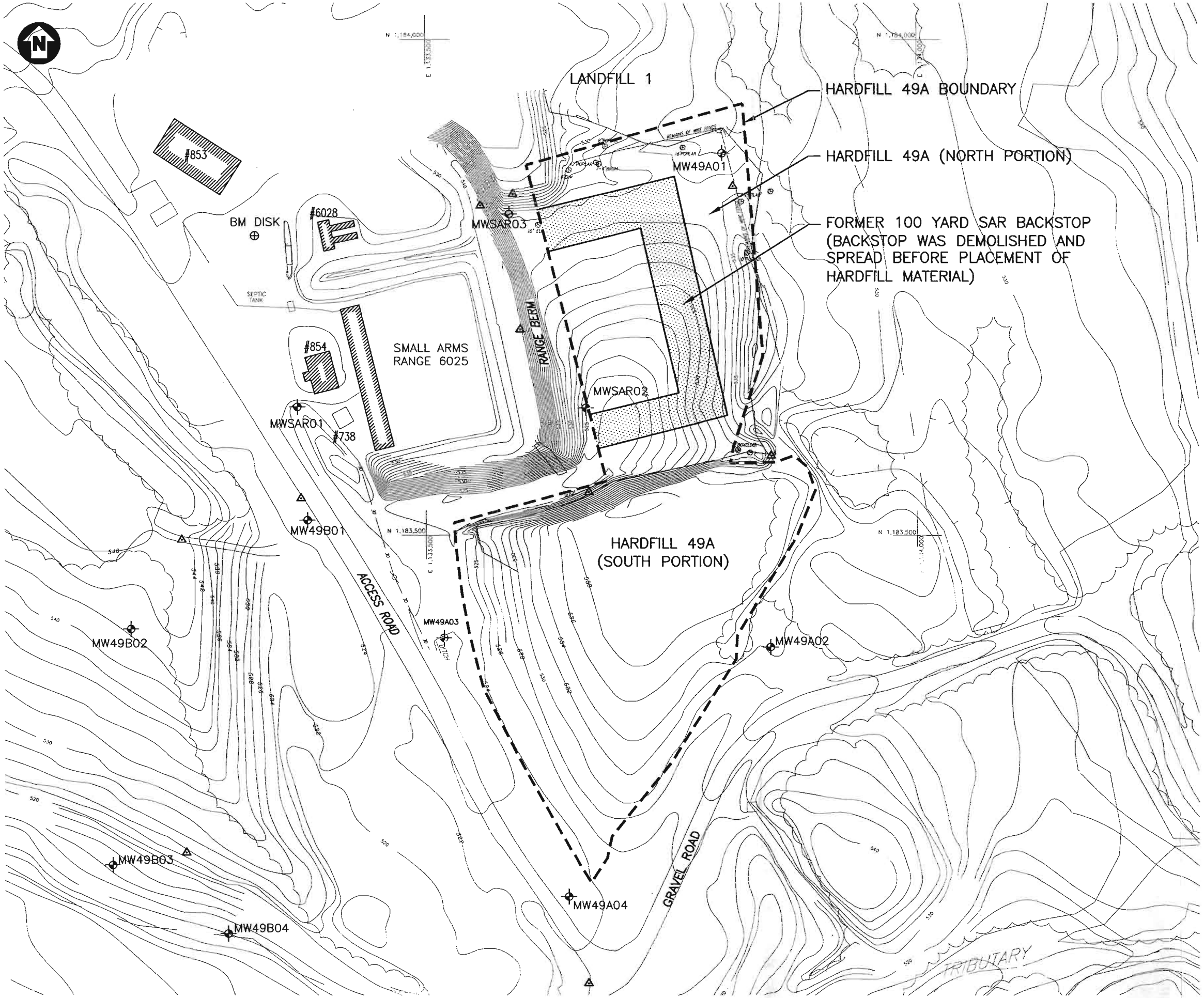
1. SAR/Hardfill 49A Environmental Cleanup Plan, Parsons, June 2002.

2. Engineering Evaluation/Cost Analysis Report, Small Arms Range/Hardfill 49A Area of Interest, FPM Group, Ltd., May 2002.

3. Test Pit Investigation at Hardfill 49A, PEER Consultants, P.C., June 1999.

4. Remedial Action Report for Hardfills 49A, 49B, 49C and 49D, PEER Consultants, P.C., April 2001.

5. Remedial Investigation Background Information, Volume 1, LAW, 1996.



LEGEND

- SURVEY BENCHMARK
- LF1MW-9 — EXISTING MONITORING WELL (LOCATION APPROXIMATE)
- MW49C01 — EXISTING MONITORING WELL (LOCATION SURVEYED)
- NEW SURVEY MONUMENT (APPROXIMATE LOCATIONS)
- 490 — EXISTING TOPOGRAPHIC CONTOURS
- CENTERLINE OF DITCH OR SWALE
- LIMIT OF TREES AND BRUSH
- HARDFILL 49A BOUNDARY

100 50 0 100 200

SCALE: 1"=100'

FIGURE 1.1

SAR/HARDFILL 49A ENVIRONMENTAL CLEANUP
FORMER GRIFFISS AIR FORCE BASE, ROME, NEW YORK

SAR/HARDFILL 49A SITE PLAN

PARSONS
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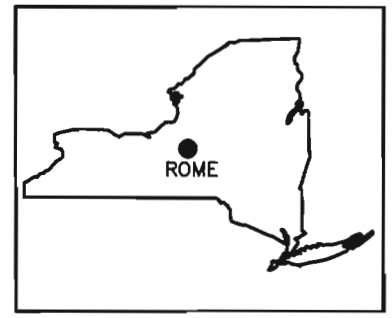
EXISTING SMALL ARMS RANGE

LANDFILL 1

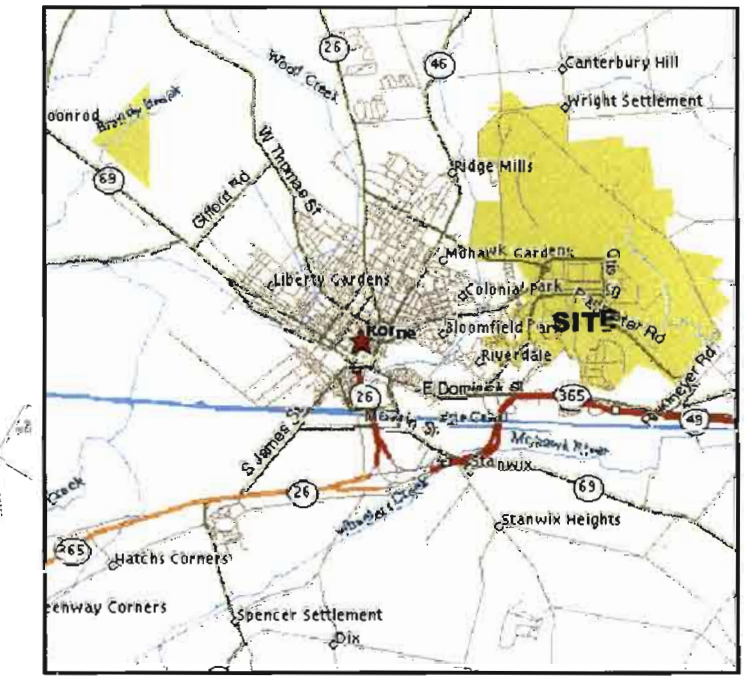
HARDFILL 49A (NORTH)

HARDFILL 49A (SOUTH)

PERIMETER ROAD



QUADRANGLE LOCATION
NEW YORK



REGIONAL MAP
SCALE: 1 INCH=2 MILES
SOURCE: Mapquest.com

1000 500 0 1000 2000

SCALE: 1"=1000'

FIGURE 1.2

SAR/HARDFILL 49A ENVIRONMENTAL CLEANUP
FORMER GRIFFISS AIR FORCE BASE, ROME, NEW YORK

SITE LOCATION MAP

PARSONS
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SECTION 2
SITE ACTIVITIES

2.1 MOBILIZATION

Site preparation activities began on March 11, 2002. Abscope Environmental, Inc. was subcontracted to perform initial site work. An area for the parking lot/staging area was cleared with a dozer, and proof rolled with a smooth drum compactor. Geotextile fabric was placed and approximately 6-inches of stone was compacted into place.

Approximately six inches of stone was compacted onto the existing access road from the staging area to the SAR/HF49A area. The access road was extended into the hardfill area to provide a truck loading area. A concrete decontamination pad with a sump was constructed at the limit of the excavation area. A fence-type swing gate was placed on the access road to restrict vehicular traffic into the site. Silt fencing was installed around the perimeter of the excavation area. These activities were completed on March 19, 2002.

An office trailer and decontamination trailer were mobilized to the site on March 26, 2002. Heavy equipment was mobilized to the site between March 26, 2002 and May 7, 2002. High visibility plastic construction fence was staked in place around the perimeter of the excavation area to demarcate the work zone. Mobilization activities were complete on May 7, 2002. Site preparation activities are shown on Figure 2.1.

2.2 EXCAVATION

Prior to beginning earthwork (Figure 2.2), temporary controls were put in place to minimize erosion and any potential impacts of sediment migrating off-site during remediation construction activities. Temporary erosion and sedimentation controls consisted of installing silt fencing around the perimeter of the excavation areas. In addition, hay bales were placed in the drainage ditches to prevent sediment from leaving the site in water runoff from the work zone.

Excavation began on April 15, 2002. Approximately 4-inches of the top clean layer (surface to 12-inch) of fill was removed and stockpiled for later testing and future re-use. This clean top layer was transported to an area on Hardfill 49B. The soil was placed on 10-mil poly and covered with 6-mil poly. A composite sample of this pile was taken and the lead content of this pile was determined to be 19.2 ppm and within acceptable cleanup levels for this project.

After removal of the top clean layer of soil, excavation began in an area where telephone poles and other wood timbers were believed to be buried. Telephone poles and wood timbers were excavated, with a grapple attachment on an excavator, and staged for cleaning. The telephone poles were manually cleaned of loose soil by brushing with a

stiff broom. The first six loads of cleaned telephone poles were transported off-site to Hakes landfill in Painted Post, NY on May 1, 2002.

As excavation continued in the Hardfill area, mechanical separation of large items was done with a grapple attachment on an excavator. All other material was stockpiled and size separated via a power screen.

A total of 10,325 cubic yards, surveyed volume, (Table 2.1) of material was excavated and processed/screened. In addition, approximately 618 cubic yards of imported stone was placed for screening/staging areas. The stone was excavated and disposed of off-site following completion of the screening operation.

Excavation continued in the vertical direction until native soils were visually observed. The bottom of the excavation is shown on Figure 2.3. Excavation continued in the horizontal direction until native soils were visually observed on the entire perimeter (see Figure 2.3). On the north side of the excavation, excavation was stopped when it was determined that the edge of Landfill 1 had been found (Figure 2.3). A poly barrier was placed on the Landfill 1 perimeter to provide a visual aid in determining the boundary of Landfill 1 for future work (see top photo on page 2-13).

2.3 SCREENING

2.3.1 Operations

A Titan 1800 power screen was mobilized to the site on May 7, 2002. Excavated soil/material was fed into the screen and sized to 2-inch minus. The 2-inch minus material was then screened to ¼-inch minus. The screening operation produced three material sizes; (1) Fine Material; less than ¼-inch (<¼"), (2) Medium Material; ¼-inch to 2-inch (¼"-2") and (3) Large Material; greater than 2-inch (>2").

Large materials (> 2") consisted of miscellaneous metal, stones, concrete, brick, wood materials and miscellaneous debris. Large materials were sorted manually after screening. Miscellaneous metal was brushed clean and placed into dumpsters for off-site recycling. Wood and debris was staged in stockpiles and disposed of off-site as non-hazardous debris. Stones, concrete and brick were re-screened to remove any loose soil and staged for re-use on-site as backfill material.

The medium material (¼" - 2") was visually observed to contain lead bullets, bullet casings and/or other evidence of metals contamination. This material was staged in stockpiles for waste profiling and off-site disposal. The stockpiles were sampled and analyzed for hazardous waste characteristics. Based on the waste characterization analytical results, all the medium material was determined to be non-hazardous.

The fine material (<¼") was visually observed to be free of contamination and was staged in 500 cubic yard stockpiles. Composite samples of the stockpiles were collected and analyzed for TAL metals and TCLP lead. The analysis indicated that the fine material was within cleanup guidelines and acceptable for re-use on-site as backfill.

Screening of the excavated soils was completed on August 21, 2002. The screen was decontaminated and removed from the SAR/HF49A site on August 22, 2002.

2.3.2 Quantities of Material Processed

Approximately 10,325 cubic yards (Table 2.1) of soil/debris was excavated from the SAR/HF49A area. Of this amount, 4,260 cubic yards (41%) was re-used at the site because of the screening process. The remaining 6,065 cubic yards (59%) was recycled or disposed of off-site as non-hazardous soil and/or debris.

In addition to the 6,065 cubic yards of soil/debris that was originally contained within the SAR/HF49A area, another 618 cubic yards of stone, used for temporary operations, was disposed of off-site as a non-hazardous waste.

The 6,683 cubic yards of material recycled or disposed of off-site consisted of:

Soil and Temporary Stone	5,760 cy	(9,747 tons)
Telephone Poles & Timbers	656 cy	(328 tons)
Miscellaneous C&D Debris	212 cy	(138 tons)
Scrap Metal	55 cy	(75 tons)
TOTAL	6,683 cy	(10,288 tons)

The 4,260 cubic yards of re-used material consisted of:

Fine Screened Soil	3,060 cy
Concrete, Brick, Stones	600 cy
Original Soil Cover	600 cy
TOTAL	4,260 cy

2.4 TRANSPORTATION AND DISPOSAL

2.4.1 Non-Hazardous Debris

Transportation and disposal of non-hazardous debris began on May 1, 2002. A total of 25 loads of telephone poles and timbers (328 tons) and 12 loads (138 tons) of C&D debris were sent to off-site permitted facilities. Table A.1 and Table A.2, in Appendix A within this report, provides a summary of the non-hazardous debris loads sent for off-site disposal. The manifests and weigh tickets can be viewed on the attached CD in the PDF file titled Appendix A.

2.4.2 Non-Hazardous Soil

Transportation and disposal of non-hazardous contaminated soil began on July 2, 2002. A total of 281 loads (9,747 tons) were sent to off-site permitted facilities. Table A.3, in Appendix A within this report, is a summary of the non-hazardous soil loads sent for off-site disposal. The waste manifests and weigh tickets can be viewed on the attached CD in the PDF file titled Appendix A.

2.4.3 Scrap Metal

Scrap metals were segregated from the soils, cleaned of loose soil, and placed into roll-off containers. The scrap metals were sent for off-site recycling. A total of 11 loads (75 tons) were recycled. Table A.4, in Appendix A within this report, is a summary of scrap metal loads sent for off-site recycling. Documentation for scrap metal loads can be viewed on the attached CD in the PDF file titled Appendix A.

2.4.4 Hazardous Waste

No hazardous waste was encountered during the excavation and screening process. Therefore, no hazardous waste was shipped off-site.

2.4.5 Construction Water Management

Water from decontamination activities was collected in a sump located beneath the concrete decontamination pad. This water was pumped into storage tanks. The water was applied to the soil being loaded for off-site disposal to control dust. No liquid disposal was required.

Groundwater was not encountered during the excavation. Rainwater dissipated into the ground naturally and did not require any management.

2.5 POST-EXCAVATION CONFIRMATION SAMPLING

Confirmation samples were taken after excavation to native soil. Native soil was determined by visual observation. Five random grab samples were collected in each 50-foot grid (Figure 2.4), in the surface to 6-inch range. A composite of the five random grabs was made and sent to STL Buffalo, in Buffalo, New York for TAL total metals and TCLP lead analysis. The results of the analyses are shown on Table 2.2. The complete results can be found in Appendix B.

Confirmation sampling was completed in the field on September 10, 2002. Analytical results were complete on September 19, 2002.

2.5.1 Discussion of Lead Results in Confirmation Samples

All excavation end point confirmation samples were tested for total lead concentration. All confirmation samples were less than the guidance value/cleanup objective of 400 ppm.

In addition, all confirmation samples were tested for hazardous lead characteristics by TCLP analysis. All samples were less than 5 mg/L by TCLP and therefore determined to be non-hazardous. Sample HF49A-CS –14A (Table 2.2) had a TCLP lead concentration of 3.8 mg/L. Because this value was not consistent with other TCLP results, this grid was re-excavated and resampled. After re-excavation, sample HF49A-CS-14B (Table 2.2) was collected and showed a TCLP lead concentration of 0.662 mg/L.

2.5.2 Discussion of TAL Metals Evaluation in Confirmation Samples

All metals tested in the excavation end point confirmation samples were less than the guidance values determined for evaluation. Based on these results, it can be concluded that TAL metals are within acceptable cleanup guidance values.

2.6 STOCKPILE SAMPLING

Following size separation, via power screening, the fine material (<¼") was staged in 500 cubic yard stockpiles and composite samples of each pile were analyzed for TAL total metals and TCLP lead. The results of the sampling are shown on Table 2.3.

The ¼" to 2" material was characterized for waste disposal parameters. The results of the waste characterization samples are shown on Table 2.4.

2.6.1 Discussion of Lead Results in Stockpiles

All soil pile confirmation samples were tested for total lead concentration. All soil pile confirmation samples were less than the guidance value/cleanup objective of 400 ppm.

In addition, all confirmation samples were tested for hazardous lead characteristics by Toxicity Characteristic Leaching Procedure (TCLP) analysis. All samples were less than 5 mg/L by TCLP and therefore determined to be non-hazardous.

2.6.2 Discussion of TAL Metals Evaluation in Stockpiles

All metals tested in the soil pile confirmation samples were less than the guidance values determined for evaluation. Based on these results, it can be concluded that TAL metals are within acceptable cleanup guidance values.

2.7 SURVEYING

2.7.1 Pre-Construction Survey

A two-man survey crew performed a pre-construction survey on March 12-13, 2002. The initial topographical conditions prior to excavation are shown on Figure 2.2 (Pre-Excavation Plan). The pre-construction survey drawing can be found in Appendix E.

2.7.2 Post-Excavation Survey

Following the excavation and confirmation sampling, a post-excavation survey was conducted. The survey was conducted on multiple days during the period of July through

September 2002. After grid locations were excavated to native soil and confirmation sample analysis was received, the grid was cordoned off with barrier tape and surveyed. The bottom elevations of the excavated areas are shown on the Post-Excavation Plan (Figure 2.3). The post-excavation survey drawing can be found in Appendix E.

2.7.3 Final Grades Survey

Following placement of all backfill and re-grading, a final survey was conducted. The final topographical condition is shown on Figure 2.5. The final grade survey drawing can be found in Appendix E.

2.8 HEALTH AND SAFETY

The remedial construction activities at the SAR/HF49A site were conducted in accordance with Parsons approved site specific Health and Safety Plan (HASP), (Parsons December 2001). The HASP established minimum standards, practices, and procedures related to personnel protection and safety during the remedial construction activities. The HASP assigned responsibilities for on-site remedial construction personnel; served as a standard during remedial activities; defined the potential hazards and associated risks that may exist at the site; described action levels for the use and upgrading and/or downgrading of personal protective equipment; and identified the proper use of work zones during the remediation activities. The provisions established in the HASP were mandatory for all on-site personnel performing remedial and post-remedial construction operations, monitoring, and maintenance, as well as any visitors.

All work was completed with no injuries, illnesses or lost time accidents.

2.8.1 Labor Orientation

A crew of operators and laborers, hired directly by Parsons, began work on April 8, 2002. All workers were given pre-work physicals, including blood lead levels and spirometry tests. On-site orientation included Health and Safety Plan training, Hazard Communication Plan training and Lead Awareness training. The scope of the project was reviewed and site-specific safety issues and procedures were discussed.

2.8.2 Lead Exposure Monitoring

Level C PPE, including ½-face respirators with HEPA filters, were used during all intrusive activities until a negative exposure assessment was completed.

Personnel air sampling and perimeter air monitoring was conducted for two activities (excavation and screening). All analytical results were found to be below action levels for lead and therefore, PPE was downgraded from level C to level D.

As per the written Lead Compliance Plan, a written review of the lead exposure monitoring, by Parsons H&S officer, which confirmed the PPE downgrade was placed into the project file on June 6, 2002.

2.8.3 Noise Monitoring

During July 2002, noise levels were recorded for various construction activities. No unusual or unexpected conditions were recorded. The results of this monitoring were reported in an Interoffice Memorandum. As per recommendation in the Interoffice Memorandum, the on-site Health and Safety Officer enforced the requirements for hearing protection. Details can be found in Appendix C.

2.8.4 Air Monitoring

2.8.4.1 Dust Monitoring

Dust monitoring was conducted with real-time aerosol monitors during field activities. Real-time aerosol monitoring was conducted using a Mini-RAM equipped with a photovoltaic detector. No dust level above the action level was recorded. See Table C.1 in Appendix C for results.

The Mini-RAM is capable of detecting light in the near infrared region back-scattered to a sensor by airborne particulate in a sensing volume. The Mini-RAM is factory-calibrated against an air sampling filter/gravimetric analysis reference method. There is no field calibration method for the monitor. However as recommended, the Mini-RAM monitor was re-zeroed daily. The aerosol monitor was used to monitor dust/particles in the breathing zone and around the perimeter of the work zone. Calibration data were recorded in field notebooks and on calibration log sheets maintained on-site.

2.8.4.2 Lead in Air Monitoring

In compliance with the OSHA Lead in Construction Standard (29 CFR 1926.62), a Lead Compliance Program was written and air samples were collected daily at a downwind location using an air sampling pump and filter cassette. Based on real-time dust readings collected during the week, one sample per week, representing the highest exposure potential, (the sample collected on the day with the highest real-time dust monitor reading) was selected for laboratory analysis. Samples were sent to Galson Laboratories in East Syracuse, NY for analysis. No samples exceeded the action level (30 micrograms per cubic meter of air calculated as an 8-hour time-weighted average) for lead. See Table C.2 in Appendix C for results.

2.8.5 Security

SAR/HF49A is located in the northeast portion of the former GAFB. The area is bounded on the southwest by an unnamed gravel road, on the west by a former SAR, to the north by Landfill 1, and to the east by a forested area. The site is located north of the former runway areas and was generally not accessible by the general public. An entrance gate was set up along the entrance road alongside of the existing SAR berm. A security control point at the office trailer was established with a logbook where all personnel signed in and out on a daily basis. The entrance gate was locked when site activities were not ongoing.

In addition, temporary fencing was used to demarcate the work zones in the excavation area.

At the end of each workday, the site was inspected to insure all gates were locked and the site was left in a safe/secure condition during periods of inactivity.

2.9 DISCUSSION OF GUIDANCE VALUE CONCENTRATIONS

2.9.1 Establishment of Guidance Values

Lead was the primary contaminant of concern. A guidance value of 400 ppm was established in the Environmental Cleanup Plan (Parsons, June 2002). This value is equal to the EPA residential cleanup standard for lead in soil.

In order to evaluate potential contamination from other metal sources, the EPA TAL metals were analyzed; in the screened soil to be re-used as backfill and in end point confirmation samples.

Guidance values were established in general accordance with the recommended soil cleanup objectives for heavy metals as established in NYSDEC TAGM 4046, Appendix A, Table 4. Table 4 identifies a value or soil background level as the recommended value. The higher of the background or TAGM value was used. In the absence of a background value, an EPA risk based value or Eastern USA background value was used.

Sources for the guidance values were:

- Griffiss AFB background soil screening levels; as determined in the base wide remedial investigation (LAW, 1996 Remedial Investigation Background Information, Volume 1)
- Federal Requirements; EPA risk based concentrations for industrial soil, Region III (EPA Region III Risk Based Concentration Table)
- State Requirements; Recommended soil cleanup objectives (NYSDEC TAGM 4046)
- Approved project cleanup objective; (Parsons, Environmental Cleanup Plan June 2002)
- Eastern USA background (NYSDEC TAGM 4046 Table 4)

2.9.2 TAL Metals Evaluation

All metals tested in the soil pile confirmation samples and the excavation end point samples were less than the guidance values determined for evaluation. Based on these results, it can be concluded that there is no metals contamination.

2.9.3 Discussion of Lead Results

All soil pile confirmation samples and post-excavation end point samples were tested for total lead concentration. All confirmation samples were less than the guidance value/cleanup objective of 400 ppm.

In addition, all confirmation samples were tested for hazardous lead characteristics by Toxicity Characteristic Leaching Procedures. All samples were less than 5 mg/L by TCLP and therefore determined to be non-hazardous.

2.10 SITE RESTORATION

2.10.1 Backfill

Fine material (soil that was screened to <¼") was re-used for backfill. In addition, concrete and stones larger than 2" and the stockpiled clean top layer of soil were also re-used. These materials were compacted in place using a dozer and smooth drum roller.

Additional backfill material needed to grade the site for proper drainage was obtained on-site from SAC Hill. Prior to utilizing this material, a composite sample of the material was obtained and analyzed for VOC, SVOC, TAL metals, PCB and pesticides (Table 2.5). All analytes were within acceptable parameters for use as clean backfill.

Four-inches of imported topsoil was placed over the area for final cover and as a base for revegetation.

The final contours of the site are shown on Figure 2.5. The site was shaped/graded to avoid ponding of water and generally to drain to the south towards the drainage ditches along the access road parallel to the SAR berm (Figure 2.5).

2.10.2 Demobilization

All equipment was decontaminated by removing loose soil and debris. A power washer was used to facilitate this process. Soil/debris was loaded into dump trailers for off-site disposal. Wash water was thinly spread (for dust control) on the soil/debris that was transported for off-site disposal.

The area on Hardfill 49B where temporary stockpiling of clean soil was placed was restored and reseeded. All temporary facilities were removed. No hazardous materials were left at the site. Vegetation was established and no further site maintenance is required.

2.11 PHOTOGRAPHIC DOCUMENTATION

Photographic documentation can be found at the end of this section and on the Daily Field Reports located in Appendix D.

Excavation, power screening, soil stockpiles and wood stockpiles.

Excavation, power screening, stockpiling. Fire truck used for dust control.

Loading trucks with soil for off-site disposal.

Grid marking for post-excavation confirmation sampling.

Clean soil obtained from screening, prior to use as backfill. Note poly to demarcate landfill 1.

Final grades after backfilling.

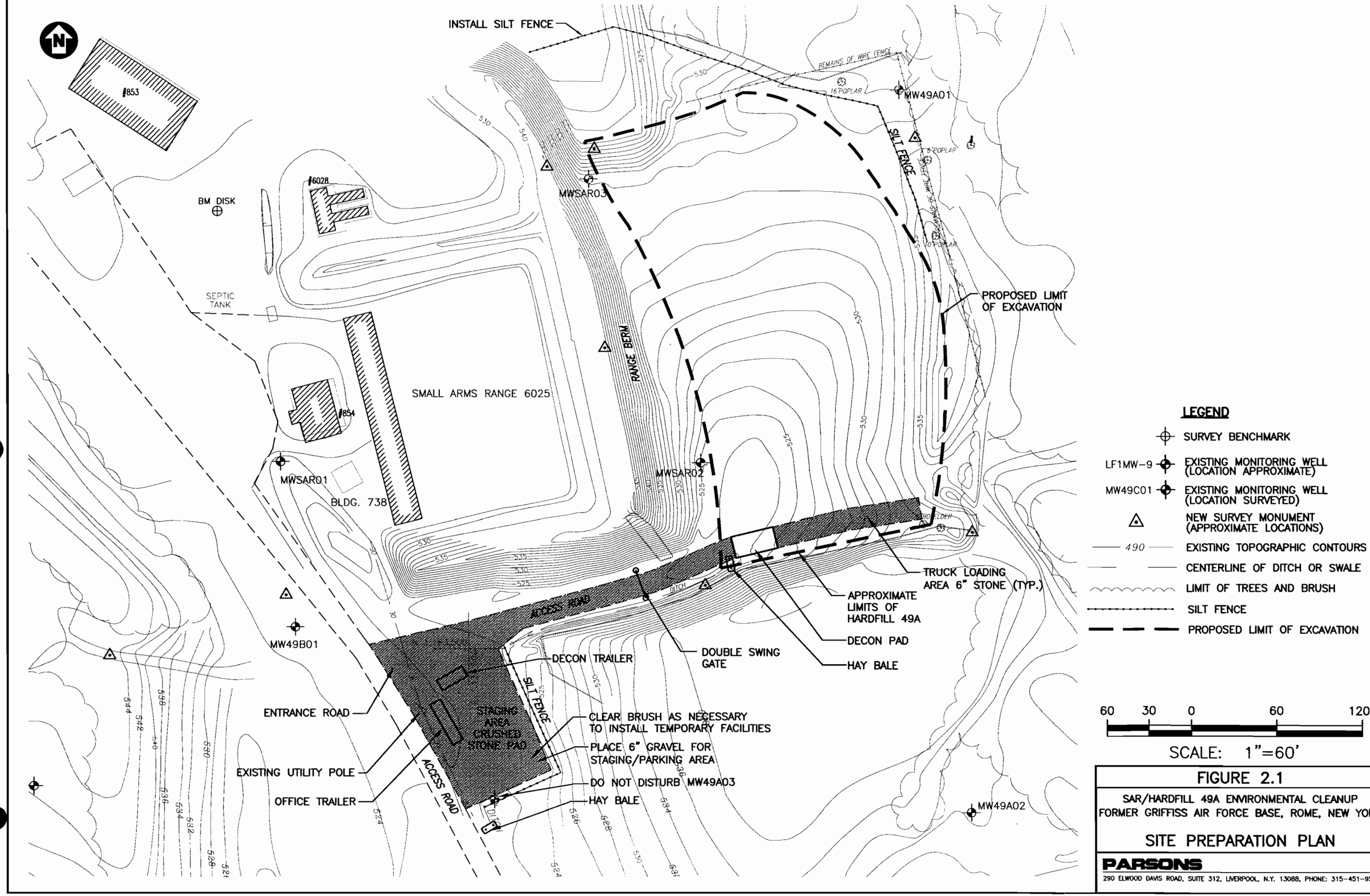

FIGURE 2.1

SAR/HARDFILL 49A ENVIRONMENTAL CLEANUP
FORMER GRIFFISS AIR FORCE BASE, ROME, NEW YORK

SITE PREPARATION PLAN

PARSONS
290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560

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NOTES:

1. EXCAVATE SOILS WITHIN THE DEFINED AREA UNTIL NATIVE SOIL IS VISUALLY OBSERVED.
2. SCREEN, SEPARATE AND STOCKPILE AS PER WORK PLAN.

SILT FENCE
REMAINS OF WIRE FENCE
16"POPLAR
MW49A01
SILT FENCE
6"POPLAR
REMAINS OF WIRE FENCE
10"POPLAR
MWSAR03
EXCAVATE SOILS/DEBRIS WITHIN LIMITS TO NATIVE SOIL (TYP.)
PROPOSED LIMITS OF HARDFILL 49A EXCAVATION AREA
SMALL ARMS RANGE 6025
RANGE BERM
DECON PAD
HAY BALE
DOUBLE SWING GATE
MWSAR02
BOX ELDER
TRUCK LOADING AREA 6" STONE (TYP.)
DITCH

525 530 535 540 545

LEGEND

- SURVEY BENCHMARK
- LF1MW-9 — EXISTING MONITORING WELL (LOCATION APPROXIMATE)
- MW49C01 — EXISTING MONITORING WELL (LOCATION SURVEYED)
- NEW SURVEY MONUMENT (APPROXIMATE LOCATIONS)
- 490 — EXISTING TOPOGRAPHIC CONTOURS
- CENTERLINE OF DITCH OR SWALE
- LIMIT OF TREES AND BRUSH
- SILT FENCE
- LIMITS OF EXCAVATION

40 20 0 40 80

SCALE: 1"=40'

FIGURE 2.2

SAR/HARDFILL 49A ENVIRONMENTAL CLEANUP
FORMER GRIFFISS AIR FORCE BASE, ROME, NEW YORK

PRE-EXCAVATION PLAN

PARSONS
290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560

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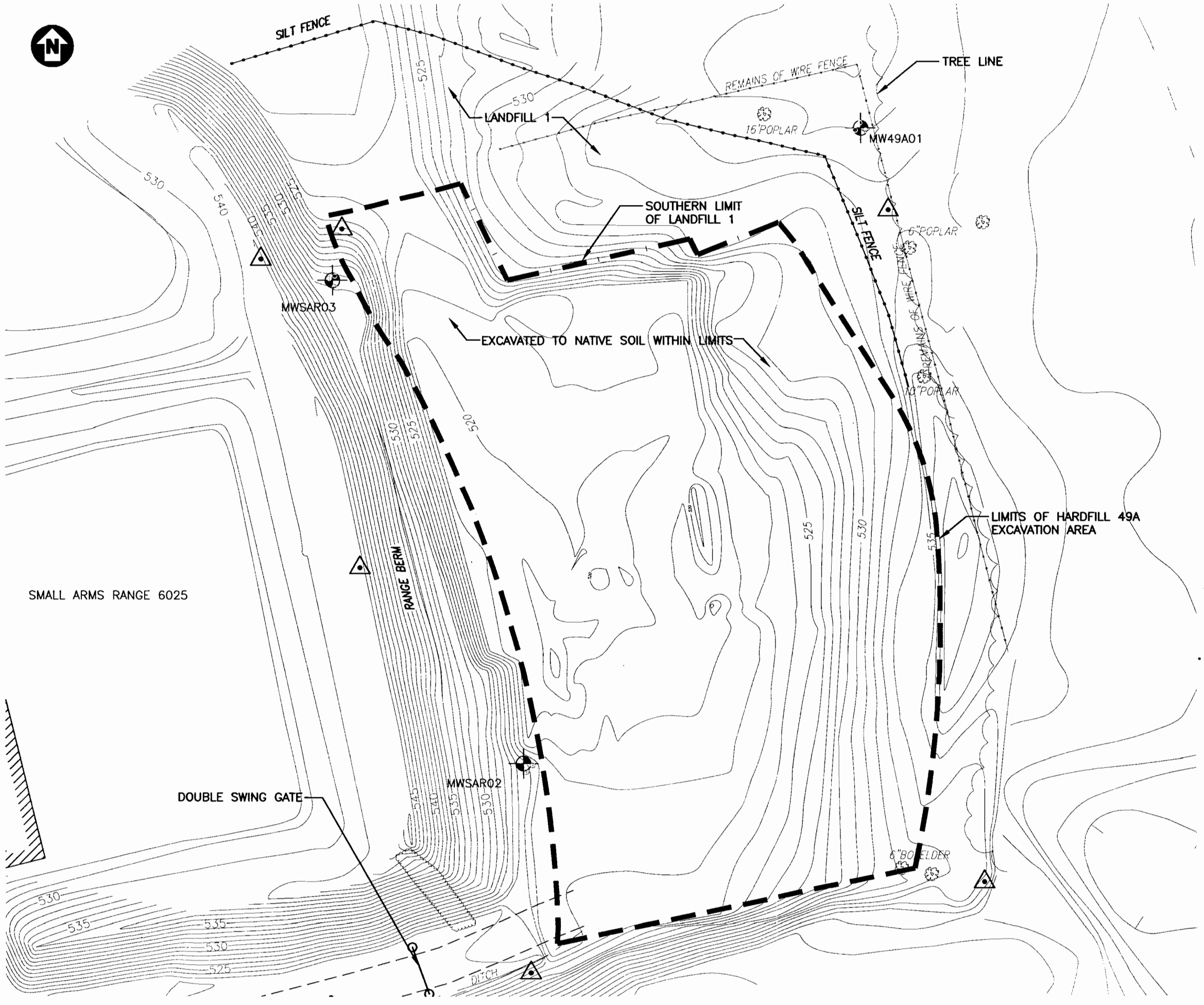

NOTES:

1. THE TOP LAYER OF CLEAN FILL WAS REMOVED AND REUSED AS BACKFILL.
2. SOILS WITHIN THE DEFINED AREA WERE EXCAVATED UNTIL NATIVE SOIL WAS VISUALLY OBSERVED.
3. SOILS WERE SCREENED, SEPARATED AND STOCKPILED AS PER WORK PLAN.
4. 4" OF SOIL WAS REMOVED UNDER THE SCREENING/ STOCKPILE AREAS FOLLOWING ALL OPERATIONS. THIS MATERIAL WAS DISPOSED OF OFF-SITE.
5. THE ACCESS ROAD STONE WITHIN THE EXCAVATION WAS SCRAPED UP, AND DISPOSED OF OFF-SITE.
6. THE DECON PAD WAS REMOVED AND DISPOSED OF OFF-SITE AFTER FINAL USE.
7. TOTAL EXCAVATED VOLUME: 10,325 CY (BY SURVEY).
8. EXCAVATION AREA: 52,630 SF (BY SURVEY).

LEGEND

- SURVEY BENCHMARK
- LF1MW-9 — EXISTING MONITORING WELL (LOCATION APPROXIMATE)
- MW49C01 — EXISTING MONITORING WELL (LOCATION SURVEYED)
- NEW SURVEY MONUMENT (APPROXIMATE LOCATIONS)
- 490 — EXISTING TOPOGRAPHIC CONTOURS
- CENTERLINE OF DITCH OR SWALE
- LIMIT OF TREES AND BRUSH
- SILT FENCE
- LIMITS OF EXCAVATION
- LIMIT OF LANDFILL 1

40 20 0 40 80

SCALE: 1"=40'

FIGURE 2.3

SAR/HARDFILL 49A ENVIRONMENTAL CLEANUP
FORMER GRIFFISS AIR FORCE BASE, ROME, NEW YORK

POST-EXCAVATION PLAN

PARSONS
290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560

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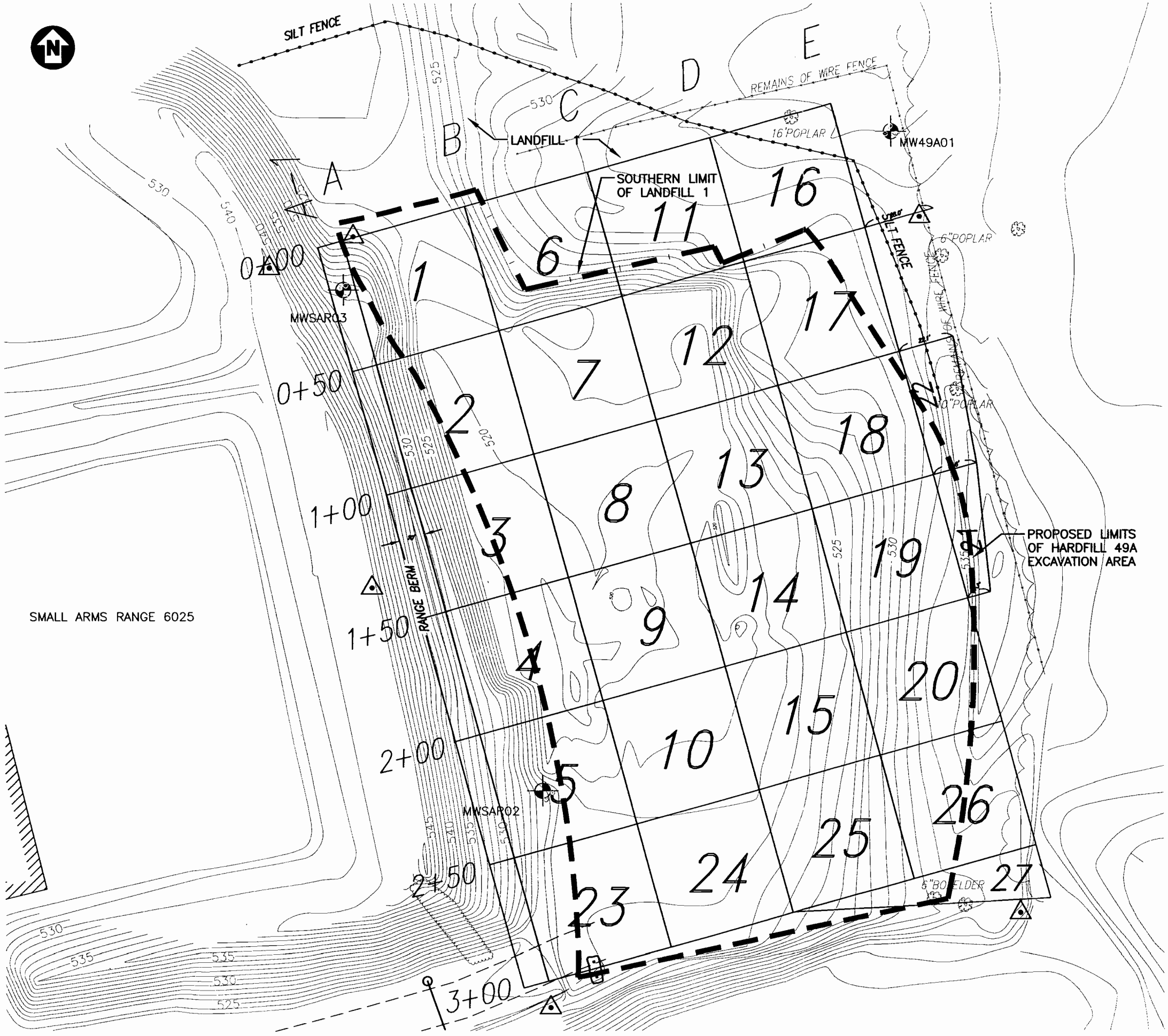

GRID #	TOTAL LEAD (ppm)	TCLP LEAD (mg/L)
1	5.6	0.0038 F
2	49.1	0.143
3	20.3	0.0929
4	34.0	1.290
5	19.9 B	0.0266
6	NS	NS
7	105	0.0655
8	49.8	0.0639
9	23.0 B	0.061
10	26.9	0.0525 F
11	NS	NS
12	21.0	0.0611
13	24.6 B	0.489
14	66.8	0.662
15	6.9	0.0116 F
16	NS	NS
17	36.2	0.0469 F
18	35.4	0.0741
19	118	0.355
20	41.5	0.0292 F
21/22	32.7	0.0314 F
23	88.3	0.0081 F
24	81.5	0.0134 F
25	103	0.0382 F
26	33.1	0.0215 F
27	65.3	0.0074 F
GUIDANCE VALUE	400.0	5.0

CONCENTRATION NOTES:

B = THE ANALYTE WAS FOUND IN AN ASSOCIATED BLANK, AS WELL AS IN THE SAMPLE.

F = THE ANALYTE WAS POSITIVELY IDENTIFIED BUT THE ASSOCIATED NUMERICAL VALUE IS BELOW THE REPORTING LIMIT.

NS = NOT SAMPLED.

GUIDANCE VALUES = APPROVED CLEANUP GOALS.

GENERAL NOTES:

1. GRIDS 6, 11 & 16 ARE WITHIN LANDFILL 1, THESE GRIDS WERE NOT EXCAVATED AND THEREFORE NOT SAMPLED.

40 20 0 40 80

SCALE: 1"=40'

FIGURE 2.4

SAR/HARDFILL 49A ENVIRONMENTAL CLEANUP
FORMER GRIFFISS AIR FORCE BASE, ROME, NEW YORK

CONFIRMATION SAMPLE LOCATIONS

PARSONS
290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560

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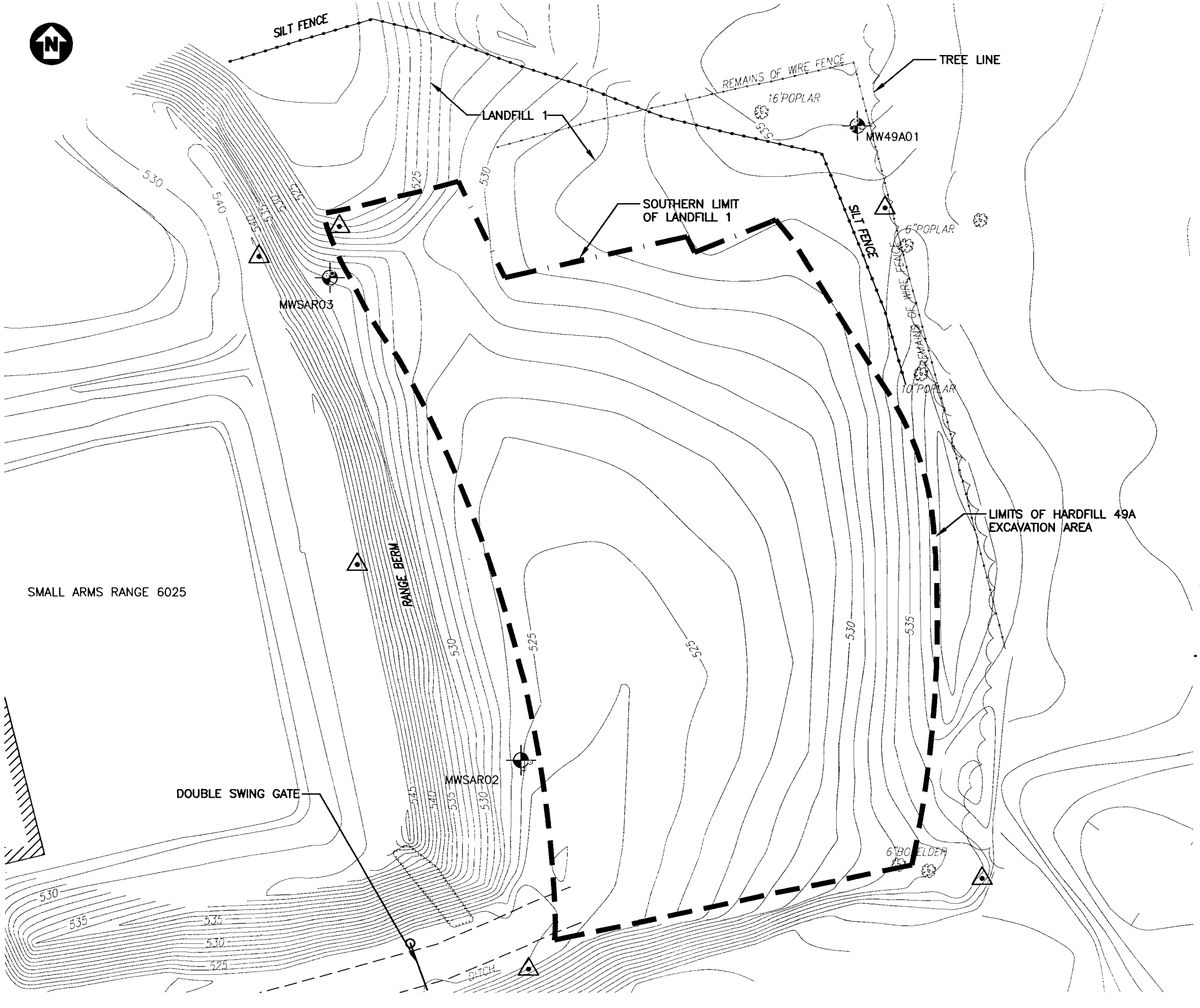

NOTES:

1. THE AREA WAS BACKFILLED WITH CLEAN SCREENED MATERIALS INCLUDING BROKEN CONCRETE (< 8"), STONES, BRICK AND SOIL (< ¼").
2. ORIGINAL CLEAN COVER SOIL WAS REUSED AS BACKFILL.
3. 4" OF TOPSOIL WAS PLACED AND THE DISTURBED AREAS WERE SEEDED/MULCHED.
4. BACKFILL VOLUME: 6,882 CY (BY SURVEY).
5. BACKFILL AREA: 52,630 SF (BY SURVEY).

LEGEND

- SURVEY BENCHMARK
- LF1MW-9 — EXISTING MONITORING WELL (LOCATION APPROXIMATE)
- MW49C01 — EXISTING MONITORING WELL (LOCATION SURVEYED)
- NEW SURVEY MONUMENT (APPROXIMATE LOCATIONS)
- 490 — EXISTING TOPOGRAPHIC CONTOURS
- CENTERLINE OF DITCH OR SWALE
- LIMIT OF TREES AND BRUSH
- SILT FENCE
- LIMITS OF EXCAVATION
- LIMIT OF LANDFILL 1

40 20 0 40 80

SCALE: 1"=40'

FIGURE 2.5

SAR/HARDFILL 49A ENVIRONMENTAL CLEANUP
FORMER GRIFFISS AIR FORCE BASE, ROME, NEW YORK

FINAL GRADE PLAN

PARSONS
290 ELWOOD DAVIS ROAD, SUITE 312, LIVERPOOL, N.Y. 13088, PHONE: 315-451-9560

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TABLE 2.1
IN-SITU VOLUME ESTIMATION

MATERIAL TYPE		IN-SITU VOLUMES		
PROCESSED (SEPARATED/SCREENED) MATERIAL		**VOLUME (cubic yards)**	**Percent by Total Volume**	**NOTES**
Fine Material <1/4"		3,060	28.0%	9 soil stockpiles @ 340cy/pile; 400cy ex-situ @ 15% fluff
Medium Material >1/4", < 2"	Soil	5,142	47.0%	8,635 tons @ 1.68 tons/cy
	Temporary Stone	618	5.6%	1,113 tons delivered @ 1.8 tons/cy
	Off-Site Disposal Volume - 5,760 cy			9,748 tons @ 1.69 tons/cy (avg. density); includes 1,113 tons of stone used for screening pads
Large Material >2"	Telephone Poles & Timbers	656	6.0%	328 tons @ 0.5 tons/cy; 25 loads
	Miscellaneous C&D	212	1.9%	138 tons @ 0.65 tons/cy, 12 dumpsters
	Scrap Metal	55	0.5%	11 dumpsters @ 5cy/dumpster
	Concrete, brick, stones	600	5.5%	Estimated 1,000 cy ex-situ @ 40% fluff
Total Processed Material		10,343		
UNPROCESSED (EXCAVATED ONLY) MATERIAL				
Original Cover		600	5.5%	~52,000sf @ 4" average depth
TOTAL IN-PLACE VOLUME		**10,943**	**100%**	
Calculated volume from pre-excavation & post-excavation surveys		10,325		
Added Stone Volume		618		
TOTAL VOLUME CHECK		**10,943**		

BACKFILL MATERIAL	VOLUME (cubic yards)	Percent by Total Volume	NOTES
Fine Material <1/4"	3,060	44.5%	From power screening
Concrete, brick, stones	600	8.7%	Excavated, cleaned, sized and reused
Original Cover	600	8.7%	Excavated from top clean layer and re-used
Imported Fill - SAC Hill	1,882	27.3%	2,100 cy loose truck measure @ 12% compaction
Imported Topsoil	740	10.8%	824 cy loose truck measure @ 10% compaction
TOTALS	**6,882**	**100%**	
Calculated volume from post-excavation & final grade surveys	6,882		

POST EXCAVATION CONFIRMATION RESULTS

TABLE 2.2

Field Sample ID:		HF49A-CS-1A	HF49A-CS-2A	HF49A-CS-3A	HF49A-CS-4A	HF49A-CS-5A	HF49A-CS-7A
Lab Sample ID:		A2898201	A2874301	A2874302	A2823501	A2802904	A2762801
IRPMS ID:		SBHF49ASB-36	SBHF49ASB-31	SBHF49ASB-32	SBHF49ASB-23	SBHF49ASB-22	SBHF49ASB-16
Grid Number:		1	2	3	4	5	7
Sample Date:		09/10/02	09/03/02	09/03/02	08/14/02	08/07/02	07/25/02
METAL	Guidance Values (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)
Aluminum	18,306 a	4,440	4,540	4,120	4,440	4,880	7,280
Antimony	818 b	0.70 M	0.73 F	0.69 R	0.76 M	ND	ND
Arsenic D-004	7.5 c	3.1	2.9	2.2	2.6	2.6 F	3.1
Barium D-005	300 c	16.4	16.8	15.4	19.1 M	20.0	25.1
Beryllium	4,088 b	0.26 F	0.20 F	0.22 F	0.27 F	0.26 F	0.33 F
Cadmium D-006	1 c	0.083 F	0.053 F	ND	ND	0.15 F	ND
Calcium	23,821 a	13,800 R	7,550 R	5,150 R	2,890 R	22,000 R	2,370 R
Chromium D-007	22.6 a	5.9	5.1	4.7	5.4	6.0	7.5
Cobalt	30 c	4.3	3.7	3.5	3.3	3.8	5.0
Copper	43 a	14.7	15.9	14.2	15.5	15.8	19.5
Iron	47,350 a	11,600	10,600	10,100	9,430	10,600	15,000
Lead D-008	400 d	5.6	49.1	20.3	34.0 M	19.9	105
Magnesium	7,175 a	2,470 M	1,870	1,810	1,870	2,260	2,440
Manganese	2,106 a	389	429	313	297	344	648
Mercury D-009	0.2 e	ND	ND	ND	0.024 F	ND	ND
Molybdenum	NS	ND	0.42 F	ND	0.26 F	ND	0.27 F
Nickel	46 a	9.0	8.0	7.4	7.5	8.6	11.9
Potassium	1,993 a	776 R	614 R	617 R	715 R	712 R	646 R
Selenium D-010	2 c	ND	ND	ND	ND	ND	0.90 F
Silver D-011	10,220 b	ND	ND	ND	ND	ND	ND
Sodium	259 a	47.5 R	49.0 R	47.4 R	52.0 R	32.1 R	47.0 R
Thallium	143 b	ND	ND	ND	ND	ND	ND
Vanadium	150 c	9.4	7.9	7.5	8.4	10.9	12.0
Zinc	120 a	28.3 M	28.6	28.4	30.4 M	33.4	39.7
TCLP Lead	5 mg/L	ND	0.143	0.0929	1.290 M	0.0266	0.0655
Decision		Clean	Clean	Clean	Clean	Clean	Clean

POST EXCAVATION CONFIRMATION RESULTS

TABLE 2.2

Field Sample ID:		HF49A-CS-8A	HF49A-CS-9A	HF49A-CS-10A	HF49A-CS-12A	HF49A-CS-13A	HF49A-CS-14A
Lab Sample ID:		A2762802	A2802903	A2823502	A2762803	A2802901	A2802902
IRPMS ID:		SBHF49ASB-17	SBHF49ASB-21	SBHF49ASB-25	SBHF49ASB-18	SBHF49ASB-19	SBHF49ASB-20
Grid Number:		8	9	10	12	13	14
Sample Date:		07/25/02	08/07/02	08/14/02	07/25/02	08/07/02	08/07/02
METAL	Guidance Values (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)
Aluminum	18,306 a	4,650	4,320	7,050	4,490	5,000	7,300
Antimony	818 b	ND	0.82 F	ND	ND	ND	1.8 F
Arsenic D-004	7.5 c	2.3	3.6 F	4.0	2.0	2.5 F	4.2 F
Barium D-005	300 c	16.0	16.0	26.4	15.6	16.7	29.8
Beryllium	4,088 b	0.24 F	0.24 F	0.30 F	0.23 F	0.29 F	0.42 F
Cadmium D-006	1 c	ND	0.089 F	0.098 F	ND	0.10 F	0.13 F
Calcium	23,821 a	3,620 R	3,840 R	3,870 R	1,480 R	1,470 R	3,470 R
Chromium D-007	22.6 a	5.1	5.6	7.5	5.3	5.8	9.6
Cobalt	30 c	4.0	4.6	4.8	3.7	4.0	6.7
Copper	43 a	22.2	17.4	19.1	14.3	20.0	34.6
Iron	47,350 a	11,300	12,200	13,100	10,600	11,900	15,800
Lead D-008	400 d	49.8	23.0	26.9	21.0	24.6	218
Magnesium	7,175 a	1,950	1,840	2,220	1,760	2,120	2,920
Manganese	2,106 a	384	348	549	272	320	304
Mercury D-009	0.2 e	ND	0.019 F	0.025 F	ND	ND	ND
Molybdenum	NS	0.30 F	0.26 F	ND	ND	ND	0.46 F
Nickel	46 a	8.8	8.8	10.2	8.2	9.4	15.8
Potassium	1,993 a	659 R	663 R	733	679 R	757 R	1,050 R
Selenium D-010	2 c	ND	0.79 F	0.83 F	ND	0.71 F	ND
Silver D-011	10,220 b	ND	ND	ND	ND	ND	ND
Sodium	259 a	52.0 R	46.0 R	50.4 R	56.9 R	38.5 R	51.5 R
Thallium	143 b	ND	ND	ND	ND	1.5 F	ND
Vanadium	150 c	8.2	9.7	11.8	8.6	8.9	13.2
Zinc	120 a	30.0	34.8	43.5	27.4	34.4	47.5
TCLP Lead	5 mg/L	0.0639	0.061	0.0525	0.0611	0.489	3.8
Decision		Clean	Clean	Clean	Clean	Clean	Re-sample

POST EXCAVATION CONFIRMATION RESULTS

TABLE 2.2

Field Sample ID:		HF49A-CS-14B	HF49A-CS-15A	HF49A-CS-17A	HF49A-CS-18A	HF49A-CS-19A	HF49A-CS-20A
Lab Sample ID:		A2842901	A2823503	A2851201	A2851202	A2851203	A2851204
IRPMS ID:		SBHF49ASB-20	SBHF49ASB-24	SBHF49ASB-26	SBHF49ASB-27	SBHF49ASB-28	SBHF49ASB-29
Grid Number:		14	15	17	18	19	20
Sample Date:		08/21/02	08/14/02	08/26/02	08/26/02	08/26/02	08/26/02
METAL	Guidance Values (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)
Aluminum	18,306 a	3,800	5,110	8,860	9,410	7,780	8,540
Antimony	818 b	0.74 R	ND	0.79 M	0.83 F	1.1 F	ND
Arsenic D-004	7.5 c	1.9	3.4	3.7	3.9	3.3	3.9
Barium D-005	300 c	12.6	17.3	34.7	37.8	25.6	33.8
Beryllium	4,088 b	0.15 F	0.26 F	0.44 F	0.46 F	0.39 F	0.39 F
Cadmium D-006	1 c	ND	ND	0.21 F	0.24 F	0.15 F	0.15 F
Calcium	23,821 a	1,850 R	2,190 R	5,120 R	7,420 R	5,470 R	3,520 R
Chromium D-007	22.6 a	4.7	6.1	9.4	10.3	8.7	17.4
Cobalt	30 c	3.3	4.3	6.3	7.0	5.7	6.2
Copper	43 a	21.3	22.2	30.4	27.1	39.1	29.1
Iron	47,350 a	9,140	12,400	17,600	18,800	16,400	16,900
Lead D-008	400 d	66.8	6.9	36.2	35.4	118	41.5
Magnesium	7,175 a	1,510	2,170 R	2,760 M	3,200	3,040	3,140
Manganese	2,106 a	195	432	683	949	513	702
Mercury D-009	0.2 e	ND	0.018 F	0.078 F	0.084 F	0.064 F	0.085 F
Molybdenum	NS	0.36 F	ND	0.51 F	0.35 F	ND	ND
Nickel	46 a	7.5	10.5	13.5	14.5	13.3	18.4
Potassium	1,993 a	627 R	775 R	825 R	895 R	894 R	798 R
Selenium D-010	2 c	ND	ND	1.2 F	0.91 F	1.1 F	1.3 F
Silver D-011	10,220 b	ND	ND	ND	ND	ND	ND
Sodium	259 a	50.7 R	48.4 R	53.8 R	65.8 R	52.4 R	52.9 R
Thallium	143 b	ND	ND	ND	ND	ND	ND
Vanadium	150 c	7.8	9.0	14.4	15.0	12.6	13.9
Zinc	120 a	34.1	36.6	57.6	72.5	51.0	59.4
TCLP Lead	5 mg/L	0.662	0.0116	0.0469	0.0741	0.355	0.0292
Decision		Clean	Clean	Clean	Clean	Clean	Clean

POST EXCAVATION CONFIRMATION RESULTS

TABLE 2.2

Field Sample ID:		HF49A-CS-21/22A	HF49A-CS-23A	HF49A-CS-24A	HF49A-CS-25A	HF49A-CS-26A	HF49A-CS-27A
Lab Sample ID:		A2851205	A2898203	A2898202	A2874303	A2874304	A2874305
IRPMS ID:		SBHF49ASB-30	SBHF49ASB-38	SBHF49ASB-37	SBHF49ASB-34	SBHF49ASB-33	SBHF49ASB-35
Grid Number:		21/22	23	24	25	26	27
Sample Date:		08/26/02	09/10/02	09/10/02	09/03/02	09/03/02	09/03/02
METAL	Guidance Values (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)
Aluminum	18,306 a	10,100	8,240	8,060	7,020	10,300	8,670
Antimony	818 b	1.1 F	0.94 F	0.83 F	0.72 R	0.74 R	0.75 R
Arsenic D-004	7.5 c	3.5	3.4	3.3	3.1	4.1	3.6 F
Barium D-005	300 c	32.8	42.1	30.8	36.2	35.4	44.8
Beryllium	4,088 b	0.53	0.38 F	0.40 F	0.28 F	0.40 F	0.37 F
Cadmium D-006	1 c	0.14 F	0.24 F	0.23 F	0.096 F	0.11 F	0.18 F
Calcium	23,821 a	2,100 R	41,400 R	81,400 R	4,790 R	1,550 R	14,000 R
Chromium D-007	22.6 a	10.3	9.3	8.7	7.2	9.7	9.4
Cobalt	30 c	6.6	5.9	5.4	4.8	6.9	6.2
Copper	43 a	23.8	22.1	23.5	24.9	30.0	28.6
Iron	47,350 a	19,100	15,800	14,200	13,700	19,300	16,600
Lead D-008	400 d	32.7	88.3	81.5	103	33.1	65.3
Magnesium	7,175 a	3,160	3,580	3,250	2,310	2,850	3,040
Manganese	2,106 a	674	865	657	548	969	635
Mercury D-009	0.2 e	0.078 F	0.040 F	0.048 F	0.043 F	0.037 F	0.043 F
Molybdenum	NS	0.29 F	0.49 F	0.41 F	0.51 F	0.44 F	0.57 F
Nickel	46 a	15.1	11.7	11.2	10.2	13.6	13.4
Potassium	1,993 a	834 R	852 R	789 R	712 R	730 R	863 R
Selenium D-010	2 c	1.3 F	0.67 F	0.62 F	ND	0.66 F	1.2 F
Silver D-011	10,220 b	ND	ND	ND	ND	ND	ND
Sodium	259 a	49.8 R	53.4 R	50.8 R	49.0 R	50.7 R	51.6 R
Thallium	143 b	ND	ND	ND	ND	ND	ND
Vanadium	150 c	15.2	14.0	14.7	11.8	15.3	14.0
Zinc	120 a	50.8	48.6	53.2	57.6	52.6	75.7
TCLP Lead	5 mg/L	0.0314	0.0081 F	0.0134	0.0382	0.0215	0.0074 F
Decision		Clean	Clean	Clean	Clean	Clean	Clean

Hazardous Metals noted in ***Bold Italics***						
Guidance Value Notes						
Guidance values have been established in general accordance with NYSDEC TAGM #4046. In absence of a TAGM value, a background value was used.						
In absence of a site background value, an EPA risk based value or Eastern USA background value was used.						
(a) Griffiss AFB background soil screening levels as determined during the base wide remedial investigation. Source: LAW, 1996 Remedial Investigation Volume 1.						
(b) Federal Requirements: EPA Risk based concentrations for industrial soil, Region III. Source: EPA Region III RBC Table.						
(c) State Requirements: Recommended state soil cleanup objectives. Source: NYSDEC TAGM #4046						
(d) Approved project cleanup objective. Source: SAR/Hardfill 49A Environmental Cleanup Plan, Parsons, June 2002						
(e) Eastern USA background. Source: NYSDEC TAGM#4046						
Concentration Notes						
N/A = Not Applicable						
ND = Non-Detect						
NS = No Standard						
B = The analyte was found in an associated blank, as well as in the sample.						
F = The analyte was positively identified but the associated numerical value is below the Reporting Limit.						
M = A matrix effect was present.						
R = The data are rejected due to deficiencies in the ability to analyze the sample and meet QC criteria.						

SOIL STOCKPILE CONFIRMATION RESULTS
(After Fine Screening)

Field Sample ID:		HF-49A-WS-004	HF-49A-WS-005	HF-49A-WS-012	HF-49A-WS-013	HF-49A-WS-014	HF-49A-WS-015	HF-49A-WS-016	HF-49A-WS-018	HF-49A-WS-019
Lab Sample ID:		A2610904	A2610905	A2662203	A2662204	A2710201	A2734401	A2763101	A2823901	A2843001
Material Size:		<1/4"	<1/4"	<1/4"	<1/4"	<1/4"	<1/4"	<1/4"	<1/4"	<1/4"
Pile Number:		4	5	7	8	12	14	15	16	17
Sample Date:		06/12/02	06/12/02	06/25/02	06/25/02	07/11/02	07/18/02	07/25/02	08/14/02	08/21/02
METAL	Guidance Values (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)	Concentration (ppm)
Aluminum	18,306 a	7,960	8,580	8,760	7,240	8,080	7,290	8,190	8,540 M	8,550
Antimony	818 b	0.98 F	1.1 F	1.4 M	1.2 F	0.77 R	0.89 F	1.2 M	10.4 M	0.78 R
Arsenic D-004	7.5 c	3.9	4.2	4.7	3.9	3.7	3.5 F	3.9	4.1	4.0
Barium D-005	300 c	41.3	42.5	55.7 M	42.8	42.0 M	36.8	38.7 M	181 M	52.1 M
Beryllium	4,088 b	0.44 F	0.46	0.53	0.47 F	0.35 F	0.41 F	0.40 F	0.48 F	0.38 F
Cadmium D-006	1 c	0.43 F	0.39 F	0.42 F	0.28 F	0.23 F	0.27 F	0.12 F	0.39 F	1.0 M
Calcium	23,821 a	16,400 R	10,100 R	13,600 M	7,200	9,290 R	16,000 R	16,800 R	22,900 R	12,200 R
Chromium D-007	22.6 a	11.0	11.5	11.1	10	10.2	10	10	11.3	10.8
Cobalt	30 c	6.1	6.4	6.3	5.3	6.6	5.8	6.1	6.2	6.1
Copper	43 a	35.2	34.0	37.2	39.8	34.0 M	36.3	38.7 M	40.5 M	37.3
Iron	47,350 a	16,100	18,300	16,900	14,000	15,900 J	14,100	17,200	16,800	16,900
Lead D-008	400 d	125.0	94.6	97.7	194	92.4	104	250	263	95.4
Magnesium	7,175 a	3,480	2,980	2,940 M	3,220	3,130 M	3,000	5,690 M	11,100 M	3,480 M
Manganese	2,106 a	642	599	698	496	652	534	855	990	576
Mercury D-009	0.2 e	0.20	0.14	0.18	0.22	0.082 R	0.15	0.077 F	0.17 J	0.17
Molybdenum	NS	0.50 F	0.42 F	0.93 F	0.95 F	0.82 F	0.47 F	0.52 F	0.58 F	0.75 F
Nickel	46 a	14.0	15.5	14.7 M	13.3	14.1	13.1	13.5	14.4	14.5 M
Potassium	1,993 a	843 R	909 R	1,010 R	998 R	798 R	828 R	952 R	994 R	948 R
Selenium D-010	2 c	0.83 F	1.3 F	ND	ND	0.89 F	0.66 F	ND	ND	0.62 M
Silver D-011	10,220 b	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	259 a	62.1 R	61.9	94.3 R	112 R	38.7 R	64.6 R	70.2 R	74.4 R	103 R
Thallium	143 b	ND	ND	1.0 M	ND	ND	ND	ND	ND	ND
Vanadium	150 c	15.1	15.7	17.9	20.1	14.5 J	14.4	16.5	15.8	14.8
Zinc	120 a	101 J	87.5 J	83.7	47.3	68.3 M	71.0	79.4	166	175
TCLP Lead	5 mg/L	0.572	0.0638	0.0625	0.780	0.0881	0.0261	0.0665	0.158	0.127
Material Disposition		Backfill	Backfill	Backfill	Backfill	Backfill	Backfill	Backfill	Backfill	Backfill

Hazardous Metals noted in ***Bold Italics***

Guidance Value Notes

Guidance values have been established in general accordance with NYSDEC TAGM #4046. In absence of a TAGM value, a background value was used.
In absence of a site background value, an EPA risk based value or Eastern USA background value was used.

(a) Griffiss AFB background soil screening levels as determined during the base wide remedial investigation. Source: LAW, 1996 Remedial Investigation Volume 1
(b) Federal Requirements: EPA Risk based concentrations for industrial soil, Region III. Source: EPA Region III RBC Table.
(c) State Requirements: Recommended state soil cleanup objectives. Source: NYSDEC TAGM #4046
(d) Approved project cleanup objective. Source: SAR/Hardfill 49A Environmental Cleanup Plan, Parsons, June 2002
(e) Eastern USA background. Source: NYSDEC TAGM#4046

Concentration Notes

N/A = Not Applicable
ND = Non-Detect
NS = No Standard
B = The analyte was found in an associated blank, as well as in the sample.
F = The analyte was positively identified but the associated numerical value is below the Reporting Limit.
M = A matrix effect was present.
R = The data are rejected due to deficiencies in the ability to analyze the sample and meet QC criteria.

Soil Stockpile
Waste Characterization Analytical Results

TABLE 2.4

Field Sample ID:		49A-WS-008	49A-WS-009	49A-WS-010	49A-WS-011
Lab Sample ID:		A2647503	A2647504	A2662201	A2662202
Material Size:		1/4"-2"	1/4"-2"	1/4"-2"	1/4"-2"
Stockpile Number:		3	6	9	10
RCRA Volatile Organic Compounds, SW8463 8260	Practical Quantification Limits for Soil	Concentration (ppb)	Concentration (ppb)	Concentration (ppb)	Concentration (ppb)
1,1-Dichloroethene	5.0	<7.3	<7.3	<7.3	<7.3
1,2-Dichloroethane	5.0	<6.4	<6.4	<6.4	<6.4
Benzene	5.0	<8.0	<8.0	<8.0	<8.0
Tetrachloroethylene (PCE)	5.0	<5.5	<5.5	<5.5	<5.5
Carbon Tetrachloride	5.0	<4.8	<4.8	<4.8	<4.8
Chlorobenzene	5.0	<7.5	<7.5	<7.5	<7.5
Chloroform	5.0	<7.3	<7.3	<7.3	<7.3
Trichloroethylene (TCE)	5.0	<6.6	<6.6	<6.6	<6.6
Vinyl Chloride	5.0	<5.5	<5.5	<5.5	<5.5
Methyl Ethyl Ketone (2-Butanone)	5.0	<20	<20	<20	<20
RCRA Semi-Volatile Organic Compounds, SW8463 8270	Practical Quantification Limits for Soil	Concentration (ppb)	Concentration (ppb)	Concentration (ppb)	Concentration (ppb)
1,4-Dichlorobenzene	10.0	<14	<14	<14	<14
2,4-Dinitrotoluene	10.0	<18	<18	<18	<18
Hexachlorobenzene	10.0	<17	<17	<17	<17
Hexachlorobutadiene	10.0	<16	<16	<16	<16
Hexachloroethane	10.0	<17	<17	<17	<17
Nitrobenzene	10.0	<16	<16	<16	<16
2,4,5-Trichlorophenol	50.0	<22	<22	<22	<22
2,4,6-Trichlorophenol	10.0	<23	<23	<23	<23
2-Methyphenol (o-Cresol)	10.0	<14	<14	<14	<14
4-Methyphenol (p-Cresol)	10.0	<14	<14	<14	<14
Pentachlorophenol	50.0	<67	<67	<67	<67
3-Methyphenol	10.0	<34	<34	<34	<34
Pyridine	10.0	<52	<52	<52	<52
PCB Compounds					
PCB-1016 (Arochlor 1016)	40.0	NA	NA	NA	NA
PCB-1221 (Arochlor 1221)	40.0	NA	NA	NA	NA
PCB-1232 (Arochlor 1232)	40.0	NA	NA	NA	NA
PCB-1242 (Arochlor 1242)	40.0	NA	NA	NA	NA
PCB-1248 (Arochlor 1248)	40.0	NA	NA	NA	NA
PCB-1254 (Arochlor 1254)	80.0	NA	NA	NA	NA
PCB-1260 (Arochlor 1260)	80.0	NA	NA	NA	NA
RCRA Metals					
Arsenic	20.0	<4.4	<4.4	5.2	5.2
Barium	5.0	435	573	607	632
Cadmium	1.0	2.1	2.7	3.1	2.5
Chromium	5.0	1.2	3.1	5.0	11.7
Lead	60.0	96.0	516	353	143
Mercury	2.0	<0.25	<0.25	<0.25	<0.25
Selenium	20.0	<4.8	<4.8	<4.8	<4.8
Silver	10.0	<1.1	<1.1	<1.1	<1.1
Corrosivity (pH)		7.13	7.32	7.17	7.21
Flammability (flashpoint)		>200 F	>200 F	>200 F	>200 F
Paint Filter Test		Passed	Passed	Passed	Passed
Reactivity H2S		NA	NA	NA	NA
Reactivity HCN		NA	NA	NA	NA
Decision/Material Disposition		Non-Haz; Off-Site Landfill	Non-Haz; Off-Site Landfill	Non-Haz; Off-Site Landfill	Non-Haz; Off-Site Landfill
Concentration Notes					
Values listed as less than (<) are considered non-detect at the MDL. The MDL is the					
value listed.					
MDL = Method Detection Limit					
NA = Not Analyzed					

Backfill Soil Sampling - SAC Hill
Analytical Results (ppb)

Field Sample ID:			BP-HF49A-01
Lab Sample ID:			A2823902RE
Excavation Area:			SAC Hill
Sample Date:			08/14/02
Volatile Organic Compounds, SW8463 8260	Guidance Values (ppb) TAGM 4046	Practical Quantification Limits for Soil	Concentration (ppb)
1,1,1,2-Tetrachloroethane		5.0	ND
1,1,1-Trichloroethane	800	5.0	ND
1,1,2,2-Tetrachloroethane	600	5.0	ND
1,1-Dichloroethane	200	5.0	ND
1,1-Dichloroethene	400	5.0	ND
1,1-Dichloropropene		5.0	ND
1,2,3-Trichlorobenzene		5.0	1.3 F
1,2,3-Trichloropropane	400	5.0	ND
1,2,4-Trichlorobenzene	3,400	5.0	ND
1,2,4-Trimethylbenzene	10,000 a	5.0	ND
1,2-Dichloroethane	100	5.0	ND
1,2-Dichlorobenzene	7,900	5.0	ND
1,2-Dibromo-3-chloropropane		5.0	ND
1,2-Dichloropropane		5.0	ND
1,2-Dibromoethane (ethylene 01)		5.0	ND
1,3,5-Trimethylbenzene (mesitylene)	3,300	5.0	ND
1,3-Dichlorobenzene	1,600	5.0	ND
1,3-Dichloropropane	300	5.0	ND
1,4-Dichlorobenzene	8,500	5.0	1.2 F
1-Chlorohexane		5.0	ND
2,2-Dichloropropane		5.0	ND
2-Chlorotoluene		5.0	ND
4-Chlorotoluene		5.0	ND
Acetone	200	10.0	ND
Benzene	60	5.0	ND
Bromobenzene		5.0	ND
Bromochloromethane		5.0	1.8 BF
Bromodichloromethane		5.0	ND
Bronoform		5.0	ND
Bromomethane		5.0	ND
Carbon Tetrachloride	600	5.0	ND
Chlorobenzene	1,700	5.0	ND
Chloroethane	1,900	5.0	ND
Chloroform	300	5.0	ND
Chloromethane		5.0	ND
cis-1,2-Dichloroethylene		5.0	ND
cis-1,3-Dichloropropene		5.0	ND
Dibromochloromethane	N/A	5.0	ND
Dibromomethane		5.0	ND
Dichlorordiflouromethane		5.0	ND
Ethylbenzene	5,500	5.0	ND
Hexachlorobutadiene		5.0	ND
Isopropybenzene (cumene)	2,300	5.0	ND
M,P-Xylene (sum of isomers)		10.0	ND
Methylene Chloride	100	5.0	6.8 B
tert-Butyl Methyl Ether		5.0	ND
Methyl Ethyl Ketone (2-Butanone)	300	10.0	ND
2-Hexanone		10.0	ND
n-Butylbenzene	10,000 a	5.0	ND
n-Propylbenzene	3,700	5.0	ND
Napthalene		5.0	ND
o-Xylene (1,2-Dimethylbenzene)	600	5.0	ND
P-Cymene (p-Isopropyltoluene)	10,000 a	5.0	ND
sec-Butylbenzene	10,000 a	5.0	ND
Styrene		5.0	ND
Trichloroethylene (TCE)		5.0	ND
t-Butylbenzene	10,000 a	5.0	ND
Tetrachloroethylene) (PCE)		5.0	ND
Toluene	1,500	5.0	ND
trans-1,2-Dichloroethene	300	5.0	ND
trans-1,3-Dichloropropene		5.0	ND
Trichlorofluoromethane		5.0	ND
Vinyl Chloride	200	5.0	ND
Total Estimated VOC's			<10,000 ppb
Guidance Value Notes			
Guidance Values are from NYSDEC TAGM #4046			
(a) Individual VOC's & sum of VOC's <10ppm or 10,000 ppb			
Concentration Notes			
Values listed as less than (<) are considered non-detect at the MDL. The MDL is the value listed.			
MDL = Method Detection Limit			
ND = Non-Detect			
N/A = Not Available			
B = The analyte was found in an associated blank, as well as in the sample.			
F = The analyte was positively identified but the associated numerical value is below the RL.			

Backfill Soil Sampling - SAC Hill
Analytical Results (ppb)

Field Sample ID:			BP-HF49A-01
Lab Sample ID:			A2823902RE
Sample Location:			SAC Hill
Sample Date:			08/14/02
Semi-Volatile Organic Compounds, SW8463 8270	Guidance Values (ppb) TAGM 4046	Practical Quantification Limits for Soil	Concentration (ppb)
1,2,4-Trichlorobenzene		10.0	ND
1,2-Dichlorobenzene		10.0	ND
1,3-Dichlorobenzene		10.0	ND
1,4-Dichlorobenze		10.0	ND
2,4-Dinitrotoluene		10.0	ND
2,6-Dinitrotoluene	1,000	10.0	ND
2-Chloronapthalene		10.0	ND
2-Methylnapthalene	36,400	10.0	ND
2-Nitroaniline	430 b	50.0	ND
3-Nitroaniline	500 b	50.0	ND
3,3-Dichlorobenzidine	N/A	20.0	ND
4-Bromophenyl Phenyl Ether		10.0	ND
4-Chloroaniline	220 b	20.0	ND
4- Chlorophenyl Phenyl Ether		10.0	ND
4-Nitroaniline		50.0	ND
Acenaphthene	50,000 a	10.0	ND
Anthracene	50,000 a	10.0	ND
Benzo(a)anthracene	224 b	10.0	ND
Benzo(a)pyrene	61 b	10.0	ND
Benzo(k)fluoranthene	1,100	10.0	ND
Benzo(b)fluoranthene	1,100	10.0	ND
Benzo(g,h,i)perylene	50,000 a	10.0	ND
Benzyl Alcohol		20.0	ND
bis(2-Chloroethoxy) Methane		10.0	ND
bis(2-Chloroethoxy) Ether		10.0	ND
bis(2-Chloroisopropyl) Ether		10.0	ND
bis(2-Ethylhexyl) Phthalate	50,000 a	10.0	ND
Benzyl Butyl Phthalate	50,000 a	10.0	ND
Chrysene	400	10.0	ND
Di-n-Butyl Phthalate	8,100	10.0	ND
Di-n-Octyl Phthalate	50,000 a	10.0	ND
Dibenzo(a,h)anthracene	14 b	10.0	ND
Dibenzofuran	6,200	10.0	ND
Diethyl Phthalate	7,100	10.0	ND
Fluoranthene	50,000 a	10.0	ND
Fluorene	50,000 a	10.0	ND
Hexachlorobenzene	410	10.0	ND
Hexachlorobutadiene		10.0	ND
Hexachloroethane		10.0	ND
Indeno(1,2,3-c,d)pyrene	3,200	10.0	ND
Isophorone	4,400	10.0	ND
N-Nitrosodiphenylamine		10.0	ND
N-Nitrosodi-n-Propylamine		10.0	ND
Napthalene	13,000	10.0	ND
Nitrobenzene	200 b	10.0	ND
Phenanthrene	50,000 a	10.0	ND
Pyrene	50,000 a	10.0	ND
2,4,5-Trichlorophenol	100	50.0	ND
2,4,6-Trichlorophenol		10.0	ND
2,4-Dichlorophenol	400	10.0	ND
2,4-Dimethylphenol		10.0	ND
2,4-Dinitrophenol	200 b	50.0	ND R
2-Chlorophenol	800	10.0	ND
2-Methylphenol (o-cresol)	100 b	50.0	ND
2-Nitrophenol	330 b	10.0	ND
4,6-Dinitro-2-Methylphenol		50.0	ND
4-Chloro-3-Methylphenol	240 b	20.0	ND
4-ethylphenol (p-cresol)		10.0	ND
4-Nitrophenol	100 b	50.0	ND
Benzoic Acid		100.0	ND
Pentachlorophenol	1,000 b	50.0	ND
Phenol	30 b	10.0	ND
Total Estimated Semi-VOC's			<50,000 ppb
Guidance Value Notes			
Guidance Values are from NYSDEC TAGM #4046			
(a) Individual Semi-VOC's <50ppm or 50,000 ppb			
(b) Stated value or MDL			
(c) Total Semi-VOC's should be <500ppm or 500,000 ppb			
Concentration Notes			
Values listed as less than (<) are considered non-detect at the MDL. The MDL is the value listed.			
N/A = Not Available			
N/D = Non-Detect			
B = The analyte was found in an associated blank, as well as in the sample.			
F = The analyte was positively identified but the associated numerical value is below the RL.			
R = The data are rejected due to deficiencies in the ability to analyze the sample and meet QC criteria.			

Backfill Soil Sampling - SAC Hill Analytical Results (TAL Metals, PCB, TCL Pesticides)

Field Sample ID:		BP-HF49A-01
Lab Sample ID:		A2823902
Excavation Area:		SAC Hill
Sample Date:		08/14/02
METAL - Methods 6010 &7471	Guidance Values (ppm)	Concentration (ppm)
Aluminum	18,306 a	4,420
Antimony	818 b	ND
Arsenic D-004	7.5 c	2.3
Barium D-005	300 c	17.0
Beryllium	4,088 b	0.16 F
Cadmium D-006	1 c	0.052 F
Calcium	23,821 a	2,500 R
Chromium D-007	22.6 a	4.5
Cobalt	30 c	3.2
Copper	43 a	10.3
Iron	47,350 a	8,400
Lead D-008	400 d	3.9 F
Magnesium	7,175 a	1,790
Manganese	2,106 a	319
Mercury D-009	0.2 e	0.018 R
Molybdenum	NS	ND
Nickel	46 a	6.30
Potassium	1,993 a	592 R
Selenium D-010	2 c	ND
Silver D-011	10,220 b	ND
Sodium	259 a	47.9 R
Thallium	143 b	ND
Vanadium	150 c	7.6
Zinc	120 a	38.7

Field Sample ID:		BP-HF49A-01
Lab Sample ID:		A2823902
Excavation Area:		SAC Hill
Sample Date:		08/14/02
TCL Pesticides - Method 8081	Guidance Values (ppm)	Concentration (ppm)
Alpha BHC	0.2	ND
Beta BHC	0.2	ND
Delta BHC	0.3	ND
Gamma BHC (Lindane)	0.1	ND
Alpha-Chlordane	2.0	ND
Gamma-Chlordane	14.0	ND
p,p-DDD	7.7	ND
p,p-DDE	4.4	ND
p,p-DDT	2.5	ND
Aldrin	0.5	ND
Dieldrin	0.1	0.0063
Alpha Endosulfan	0.9	ND
Beta Endsosulfan	0.9	ND
Endosulfan Sulfate	1.0	ND
Endrin	0.1	ND
Endrin Aldehyde	NS	ND
Heptachlor	0.1	ND
Heptachlor Epoxide	0.0	ND
Methoxychlor	900	ND
Toxaphene	NS	ND

Hazardous Metals noted in ***Bold Italics***

PCB'S - Method 8082	Guidance Values (ppm)	Concentration (ppm)
PCB -1016 (Arochlor 1016)	10	ND
PCB -1221 (Arochlor 1221)	10	ND
PCB -1232 (Arochlor 1232)	10	ND
PCB -1242 (Arochlor 1242)	10	ND
PCB -1248 (Arochlor 1248)	10	ND
PCB -1254 (Arochlor 1254)	10	ND
PCB -1260 (Arochlor 1260)	10	ND

Guidance Value Notes

Guidance values have been established in general accordance with NYSDEC TAGM #4046. In absence of a TAGM value, a background value was used. In absence of a site background value, an EPA risk based value or Eastern USA background value was used.

(a) Griffiss AFB background soil screening levels as determined during the base wide remedial investigation. Source: LAW, 1996 Remedial Investigation Volume 1
(b) Federal Requirements: EPA Risk based concentrations for industrial soil, Region III. Source: EPA Region III RBC Table.
(c) State Requirements: Recommended state soil cleanup objectives. Source: NYSDEC TAGM #4046
(d) Approved project cleanup objective. Source: SAR/Hardfill 49A Environmental Cleanup Plan, Parsons, June 2002
(e) Eastern USA background. Source: NYSDEC TAGM#4046

Concentration Notes

N/A = Not Applicable
ND = Non-Detect
NS = No Standard
B = The analyte was found in an associated blank, as well as in the sample.
F = The analyte was positively identified but the associated numerical value is below the Reporting Limit.
R = The data are rejected due to deficiencies in the ability to analyze the sample and meet QC criteria.

SECTION 3
DATA QUALITY ASSURANCE & QUALITY CONTROL EVALUATION

This section provides an evaluation of the Quality Assurance/Quality Control (QA/QC) procedures and results utilized during the performance of the SAR/HF49A cleanup event to ensure the precision, accuracy, representativeness, completeness, and comparability of the data generated. It highlights and summarizes conclusions drawn on the quality and usability of the analytical results.

A complete (100%) data review was performed on the samples collected during the soil screening events. The types of environmental samples included soil and associated QC samples. The sampling procedures were conducted according to Section 4 of the FSP (Parsons, 2002). The analytical test methods and QA/QC requirements used for the soil sample analysis were per those specified in the AFCEE Quality Assurance Project Plan (QAPP) Version 3.1, with AFCEE-approved laboratory variances. The analytical methods employed included: Trace Metals by ICPES (water and soil) by EPA method SW6010B, Mercury (water) by EPA method SW7470A, and Mercury (soil) by EPA method SW7471A.

The data were validated according to the protocols and QC requirements of the respective analytical methods and of the QAPP Version 3.1. For data usability purposes, all values including positive and non-detect results that were qualified "R" (Rejected) were further evaluated according to the QAPP. The data usability analysis was based on the reviewer's professional judgment and on an assessment of how this data would fare with respect to the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (USEPA, 1994). For example, AFCEE QAPP rejected positive results that were considered useable according to EPA's guidelines were flagged "J". Similarly, usable non-detect values were flagged "UJ."

The data validation review assessed the following QA/QC criteria:

- Reporting and method detection limits
- Holding times, sample preservation and storage
- GC/MS tuning criteria
- Initial calibration
- Second source calibration verification
- Continuing calibration

- Method, ambient, equipment, and trip blanks
- Surrogate spike results
- Field duplicate results
- Matrix spikes/matrix spike duplicates (MS/MSD)
- Internal standard areas and retention times
- Laboratory control sample (LCS)
- Post digestion spike addition
- Interference check standard (ICS)
- Serial dilution analysis recovery test
- Data system printouts
- GC chromatograms and mass spectra
- Qualitative and quantitative compound identification
- Chain-of-custody (CoC)
- Case narrative, AFCEE forms, and deliverables compliance

The items listed above were evaluated in terms of compliance with AFCEE QAPP and USEPA criteria and protocols, and highlights are discussed in the following sections. The analytical results were qualified accordingly and these qualified analytical results can be found in summary tables in Section 2 of this report. Full data validation and usability reports were generated for each analytical data package. The validated results can be found in Appendix B.

3.1 RECORD KEEPING

Project logbooks, consisting of bound books with hard covers and sequentially numbered pages, were maintained on a daily basis by each of the field team members in charge of a specific task. These logbooks contain detailed records of all activities related to specific field tasks and specific references to other field documents used on a daily basis. The front of each logbook shows the project name, logbook number, and the dates of use.

Possession of all samples was tracked from the time of sample collection through sample analysis by the use of AFCEE CoC forms. Copies of the completed AFCEE CoC forms are included with the validated results in Appendix B.

3.2 BLANK SAMPLE RESULTS

Assessment of field or laboratory conditions which may contribute to contamination of the environmental samples was performed by evaluating the chemical results of field blank and laboratory method blank samples. The field blanks utilized were equipment blanks. The method blanks included preparation blanks, calibration blanks, extraction blanks and matrix spike blanks. According to the QAPP, for blank sample results, which have contaminants present greater than the reporting limit (RL), associated sample positive results for the particular analyte are considered estimated and are flagged with a "B" qualifier.

3.2.1 Equipment Blank Samples

Equipment blank samples are samples of laboratory reagent grade water which have been poured into, over, or through the dedicated or decontaminated sampling equipment, collected in laboratory-supplied sample containers, and transported to the laboratory for analysis. Equipment blanks were collected as required per the work plan for each matrix (soil) sampled and were analyzed for the full suite of analytes that were submitted for that day. Equipment blanks are used to assess the effectiveness of equipment decontamination procedures.

An evaluation of the equipment blank sample results was performed during the data validation and the associated samples accordingly were qualified.

3.2.2 Method Blank Samples

The purpose of laboratory method blank analyses is to determine the existence and magnitude of contamination resulting from laboratory activities. The method blanks are carried through the complete sample preparation and analytical procedure. If problems with any blanks exist (i.e.: concentrations of constituents are detected above detection limits), all associated data are carefully evaluated to determine whether or not there is inherent variability in the data or if the problem is an isolated occurrence. Various types of method blanks were employed for this investigation, including preparation blanks, calibration blanks, extraction blanks, and matrix spike blanks.

The presence of analytes in a method blank at concentrations equal to or greater than the RL indicates a need for corrective action. Corrective action shall be performed by the laboratory to eliminate the source of contamination prior to proceeding with the analysis.

An evaluation of the method blank sample results was performed during the data validation process and the associated samples were qualified accordingly.

3.3 FIELD DUPLICATE SAMPLES

Field duplicate samples were collected during sampling events. These samples were used to assess the general precision of the sample results. The field duplicate samples were second samples collected at the same location as the primary samples immediately following the collection of the primary samples using identical recovery equipment and

techniques. The duplicate samples were managed in an identical manner as the primary samples during sample storage, transportation, and analysis. The duplicate samples were assigned blind identification numbers so that laboratory personnel could not identify them. The frequency of collection for these QC sample was as specified in the Work Plan.

Using professional judgment, it is difficult to consider any set of field duplicate samples to be truly representative of a site or sampling event. Therefore, for relative percent difference (RPD) control limit exceedances, only the parent-duplicate sample set was qualified and not all the samples collected on the same sampling date as recommended by the QAPP. Hence, based on exceedances, positive results were considered estimated and are flagged "J" and non-detects are flagged "UJ."

The evaluation of the field duplicate sample results was performed during the data validation process and appropriate flags were applied. In general for reporting purposes, to err on the side of conservatism, the higher of the concentrations from the parent-duplicate sample sets were reported in the summary tables and used to assess soil conditions.

3.4 MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

Data for matrix spike/matrix spike duplicates (MS/MSD) are generated to determine long-term precision and accuracy of the analytical method on various matrices. Generally, these data alone cannot be used to evaluate the precision and accuracy of individual samples. A matrix spike and matrix spike duplicate analysis is an aliquot of sample spiked with known concentrations of all the analytes in the method. According to the AFCEE QAPP, the MS/MSD result is used to assess whether the sample matrix may bias the results.

The AFCEE recommended frequency of analysis is one MS/MSD per 20 samples. Exceedances of either percent recovery (%Rec) of spike concentrations or RPD between the MS and MSD results, according to the QAPP require a "M" (matrix effect) qualifier for the specific analyte in all samples collected from the same site matrix as the parent. However, due to the varied nature of environmental samples, such as locations, depths, physical characteristics (dissolved and suspended solids, turbidity, pH, organic content, etc.), it is difficult to assign one set of MS/MSD sample analysis as truly representative of an entire site matrix. Therefore, based on the definition of this type of QA/QC sample, using professional judgment it is deemed inappropriate to qualify more than the actual parent sample due to a %Rec or RPD exceedance. This approach is in accordance with the EPA National Functional guidelines, which states that the MS/MSD results are not used alone to qualify the entire data package, however, can be used in conjunction with other QC criteria to determine the need for some qualification of the data. Thus, the data validation will take the approach that for instances when specific analytes exceed QC limits in the MS/MSD analysis, results are qualified "M" in the parent sample only.

3.5 LABORATORY CONTROL SAMPLE RESULTS

Laboratory control samples (LCSs) are control samples spiked with all analytes of interest at known concentrations. These analyses are used to assess the overall laboratory performance pertaining to the analytical method. The QAPP includes method-specific QC acceptance criteria for the percent recovery of the spike compounds. The LCS results are used to evaluate each AFCEE analytical batch and to determine if the method is in control. The LCS results cannot be used as the continuing calibration verification. Whenever an analyte in an LCS is outside the acceptance limit, corrective action shall be performed by the laboratory. If the corrective action is ineffective in resolving the exceedance, then that analyte in all the associated samples (samples within the AFCEE analytical batch) are qualified. When the % Rec is greater than the upper control limit, positive results are considered estimated flagged "J"; and when the % Rec is less than the lower control limit, positive values are flagged "J" and non-detects are flagged "UJ."

An evaluation of the LCS results was performed during the data validation and the associated samples were qualified accordingly.

3.6 DATA USABILITY RESULTS

Data review for usability is a process that evaluates the validated data in context with the original data quality objectives (DQOs). The formal process of usability determination involves a complex series of procedures including editing, screening, auditing, verifying, and reviewing the validated data.

Based on an evaluation of all the information in the analytical data groups, the data is highly usable with the data validation qualifiers as noted. Using the data validation guidance as presented above (incorporating the AFCEE QAPP, USEPA, and professional judgment), the results are highly with some rejected values. In terms of the QAPP's completeness criteria (number of valid results/total number of possible results), the results were 100% complete. Therefore, in summary, the incidental qualification of the soil results (typically estimated values J, UJ) has no significant impact on the overall project data quality.

The data are valid and usable with qualifications as indicated in the data review as discussed above. The qualified results (annotated laboratory data sheets) can be found in Appendix B. The data qualifiers are summarized as follows:

J The analyte was positively identified; the quantitation is an estimation;

U The analyte was analyzed for but not detected. The associated value is at or below the MDL;

UJ The analyte was analyzed for but not detected, however, the MDL is approximate and may or may not represent the actual limit of quantitation;

F The analyte was positively identified but the associated numerical value is below the RL;

R The data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria;

B The analyte was found in the associated blank as well as in the sample;

M A matrix effect was present;

S Applied to all field screening data; and

T Tentatively identified compound, using gas chromatography/mass spectroscopy (GC/MS).

Data flagging was performed according to the conventions described in the AFCEE QAPP (Version 3.1), USEPA National Functional Guidelines, and the reviewer's professional judgment. According to the QAPP, when multiple qualifiers are prescribed, the data review process assigned a final qualifier reflecting the most severe qualifier. The QAPP allowable final data qualifiers for definitive data and the hierarchy of data qualifiers, listed in order of the most severe through the least severe, are R, M, F, J, B, and U.

APPENDIX A
DISPOSAL DOCUMENTATION

Table A.1 Telephone Poles and Timbers Disposal Log
Non-hazardous Manifests and Weigh Tickets

Table A.2 C&D Debris Disposal Log
Non-hazardous Manifests and Weigh Tickets

Table A.3 Non-Hazardous Soil Disposal Log

Non-hazardous Manifests and Weigh Tickets

Table A.4 Scrap Metal Recycling Log

Bill of Lading and Weigh Tickets

(Due to the large volume of paper, waste manifests and weigh tickets are bound in a separate volume. This volume is on file at the AFRPA office Building 301 at 153 Brooks Road, Rome, NY and at Parsons office in Liverpool, NY in file number 740881. Included in this report is a PDF file labeled Appendix A, on CD, with all manifests and weigh tickets.)

TABLE A.1
TELEPHONE POLES and TIMBERS DISPOSAL

25	TOTAL LOADS			327.59	TOTAL TONS DISPOSED	
LOAD #	**REMOVAL DATE**	**MANIFEST #**	**WEIGH TICKET #**	**QUANTITY (tons)**	**HAULER**	**DISPOSAL FACILITY**
1	May 1, 2002	280259	11981	8.91	Robert Geisel	Hakes C&D Landfill
2	May 1, 2002	280260	11985	9.95	Robert Geisel	Hakes C&D Landfill
3	May 1, 2002	280261	11982	8.21	Robert Geisel	Hakes C&D Landfill
4	May 1, 2002	280262	11999	8.37	Robert Geisel	Hakes C&D Landfill
5	May 1, 2002	280263	11998	8.23	Robert Geisel	Hakes C&D Landfill
6	May 1, 2002	280264	11997	6.94	Robert Geisel	Hakes C&D Landfill
7	May 14, 2002	280265	12128	8.43	Mangiardi Brothers	Hakes C&D Landfill
8	May 14, 2002	280266	12129	5.67	Mangiardi Brothers	Hakes C&D Landfill
9	May 14, 2002	280267	12130	7.17	Mangiardi Brothers	Hakes C&D Landfill
10	May 14, 2002	280268	12133	8.51	Mangiardi Brothers	Hakes C&D Landfill
11	May 14, 2002	280269	12134	10.36	Mangiardi Brothers	Hakes C&D Landfill
12	May 14, 2002	280270	12141	11.59	Mangiardi Brothers	Hakes C&D Landfill
13	June 18, 2002	280271	12600	16.25	Mangiardi Brothers	Hakes C&D Landfill
14	June 18, 2002	280272	12601	15.91	Mangiardi Brothers	Hakes C&D Landfill
15	July 15, 2002	280273	13040	14.86	Mangiardi Brothers	Hakes C&D Landfill
16	July 15, 2002	280274	13060	8.32	Mangiardi Brothers	Hakes C&D Landfill
17	July 15, 2002	280275	13047	15.76	Mangiardi Brothers	Hakes C&D Landfill
18	July 15, 2002	280276	13048	19.44	Mangiardi Brothers	Hakes C&D Landfill
19	July 15, 2002	280277	13049	16.46	Mangiardi Brothers	Hakes C&D Landfill
20	July 22, 2002	280278	13168	16.88	Mangiardi Brothers	Hakes C&D Landfill
21	July 25, 2002	280279	13240	21.89	Mangiardi Brothers	Hakes C&D Landfill
22	July 31, 2002	280280	13330	17.36	Mangiardi Brothers	Hakes C&D Landfill
23	July 31, 2002	280281	13329	12.82	Mangiardi Brothers	Hakes C&D Landfill
24	August 8. 2002	280282	13508	23.25	Mangiardi Brothers	Hakes C&D Landfill
25	August 8. 2002	280283	13507	26.05	Mangiardi Brothers	Hakes C&D Landfill
	TOTAL TONS DISPOSED			**327.59**		

TABLE A.2
MISCELLANEOUS C and D DISPOSAL

12	TOTAL LOADS			137.89	TOTAL TONS DISPOSED		
LOAD #	**REMOVAL DATE**	**MANIFEST #**	**WEIGH TICKET #**	**QUANTITY (tons)**	**HAULER**	**DISPOSAL FACILITY**	**CONTENTS**
1	June 18, 2002	CD1	433407	8.68	WASTE MANAGEMENT	ONEIDA-HERKIMER	Poly, carpet, plastic debris
2	July 22, 2002	CD2	458352	7.26	WASTE MANAGEMENT	ONEIDA-HERKIMER	Poly, carpet, C&D
3	August 6, 2002	CD3	456358	7.54	WASTE MANAGEMENT	ONEIDA-HERKIMER	Poly, wood, carpet, plastic debris
4	August 12, 2002	CD4	459104	10.94	WASTE MANAGEMENT	ONEIDA-HERKIMER	Poly, wood, carpet, plastic debris
5	August 13, 2002	CD5	459257	18.48	WASTE MANAGEMENT	ONEIDA-HERKIMER	Poly, wood, plastic debris,tile
6	August 15, 2002	CD6	459407	10.78	WASTE MANAGEMENT	ONEIDA-HERKIMER	Poly, wood, plastic debris,
7	August 15, 2002	CD7	459423	15.49	WASTE MANAGEMENT	ONEIDA-HERKIMER	Poly, wood, plastic
8	August 20, 2002	CD8	456472	13.43	WASTE MANAGEMENT	ONEIDA-HERKIMER	Poly, wood, plastic
9	August 21, 2002	CD9	456586	12.91	WASTE MANAGEMENT	ONEIDA-HERKIMER	poly, wood, plastic
10	August 21, 2002	CD10	456701	15.94	WASTE MANAGEMENT	ONEIDA-HERKIMER	Poly, wood, plastic
11	August 22, 2002	CD11	456801	13.51	WASTE MANAGEMENT	ONEIDA-HERKIMER	Poly, wood, plastic
12	September 16, 2002	CD12	476371	2.93	WASTE MANAGEMENT	ONEIDA-HERKIMER	Poly, wood, plastic
	TOTAL TONS DISPOSED			**137.89**			

TABLE A.3
NON-HAZARDOUS SOIL DISPOSAL

281	TOTAL LOADS			9,747.77	TOTAL TONS DISPOSED	
LOAD #	REMOVAL DATE	MANIFEST #	WEIGH TICKET #	QUANTITY (tons)	HAULER	DISPOSAL FACILITY
1	July 2, 2002	286170	274821	33.98	Mangiardi 43	High Acres
2	July 2, 2002	286171	274842	31.54	Mangiardi 31	High Acres
3	July 2, 2002	286172	274837	29.78	Mangiardi 97	High Acres
4	July 2, 2002	286173	274839	28.00	Mangiardi 35	High Acres
5	July 2, 2002	286174	274844	32.95	Mandiardi 27	High Acres
6	July 2, 2002	286175	274862	32.71	Mangiardi 1	High Acres
7	July 2, 2002	286176	274938	35.35	Mangiardi 39	High Acres
8	July 2, 2002	286177	274939	30.62	Mangiardi 36	High Acres
9	July 2, 2002	286178	274969	32.58	Mangiardi 43	High Acres
10	July 2, 2002	286179	274992	33.98	Mangiardi 1	High Acres
11	July 2, 2002	286180	275035	35.93	Mangiardi 97	High Acres
12	July 2, 2002	286181	275024	30.52	Mangiardi 35	High Acres
13	July 2, 2002	286182	275010	33.26	Mangiardi 36	High Acres
14	July 2, 2002	286183	275008	32.23	Mangiardi 39	High Acres
15	July 2, 2002	286184	274995	33.90	Mangiardi 43	High Acres
16	July 2, 2002	286185	275029	30.24	Mangiardi 27	High Acres
17	July 2, 2002	286186	275027	28.32	Mangiardi 31	High Acres
18	July 3, 2002	286187	275142	31.62	Mangiardi 1	High Acres
19	July 3, 2002	286188	275144	32.59	Mangiardi 43	High Acres
20	July 3, 2002	286189	275157	32.53	Mangiardi 39	High Acres
21	July 3, 2002	286190	275166	32.69	Mangiardi 36	High Acres
22	July 3, 2002	286191	275241	31.07	Mangiardi 37	High Acres
23	July 3, 2002	286192	275237	32.41	Mangiardi 42	High Acres
24	July 8, 2002	284810	275627	31.50	Mangiardi 35	Ontario County
25	July 8, 2002	284811	275626	32.79	Mangiardi 37	Ontario County
26	July 8, 2002	284812	275630	31.36	Mangiardi 31	Ontario County
27	July 8, 2002	284813	275632	30.12	Mangiardi 34	Ontario County
28	July 8, 2002	284814	275644	33.69	Mangiardi 42	Ontario County
29	July 8, 2002	284815	47675	34.20	Mangiardi CH 42	Ontario County
30	July 8, 2002	286302	47660	33.76	Mangiardi 43	Ontario County
31	July 8, 2002	286303	47739	35.10	Mangiardi 37	Ontario County
32	July 8, 2002	286304	47740	33.98	Mangiardi 35	Ontario County
33	July 8, 2002	286305	47741	35.86	Mangiardi 31	Ontario County
34	July 8, 2002	286306	47742	34.13	Mangiardi 34	Ontario County
35	July 8, 2002	286307	47738	34.84	Mangiardi 42	Ontario County
36	July 8, 2002	286308	47736	35.76	Mangiardi 43	Ontario County
37	July 9, 2002	286309	47776	35.00	Mangiardi 43	Ontario County
38	July 9, 2002	286310	47777	35.36	Mangiardi 31	Ontario County
39	July 9, 2002	286311	47784	34.91	Mangiardi 35	Ontario County
40	July 9, 2002	286312	47785	36.55	Mangiardi 34	Ontario County
41	July 9, 2002	286313	47792	38.65	Mangiardi 37	Ontario County
42	July 9, 2002	286314	47794	33.56	Mangiardi 42	Ontario County
43	July 9, 2002	286315	47795	34.68	Mangiardi 27	Ontario County
44	July 9, 2002	286316	47848	32.79	Mangiardi 43	Ontario County
45	July 9, 2002	286317	47849	36.76	Mangiardi 31	Ontario County
46	July 9, 2002	286318	47885	34.59	Mangiardi 35	Ontario County
47	July 9, 2002	286319	47877	34.46	Mangiardi 37	Ontario County
48	July 9, 2002	286320	47881	31.38	Mangiardi 42	Ontario County
49	July 9, 2002	286321	47887	31.18	Mangiardi 27	Ontario County
50	July 9, 2002	286322	47882	36.46	Mangiardi 36	Ontario County
51	July 9, 2002	286323	47892	36.09	Mangiardi 38	Ontario County
52	July 9, 2002	286324	47891	35.62	Mangiardi 31	Ontario County
53	July 9, 2002	286325	47890	32.85	Mangiardi 43	Ontario County
54	July 10, 2002	286326	47931	34.17	Mangiardi 42	Ontario County
55	July 10, 2002	286327	47932	33.79	Mangiardi 30	Ontario County
56	July 10, 2002	286328	47941	37.60	Mangiardi 35	Ontario County
57	July 10, 2002	286329	47940	36.06	Mangiardi 37	Ontario County
58	July 10, 2002	286330	47945	36.60	Mangiardi 97	Ontario County

TABLE A.3
NON-HAZARDOUS SOIL DISPOSAL

LOAD #	REMOVAL DATE	MANIFEST #	WEIGH TICKET #	QUANTITY (tons)	HAULER	DISPOSAL FACILITY
59	July 10, 2002	286331	47948	33.01	Mangiardi 36	Ontario County
60	July 10, 2002	284816	47953	33.55	Mangiardi 21	Ontario County
61	July 10, 2002	284817	47951	33.67	Mangiardi 27	Ontario County
62	July 10, 2002	284818	48042	31.26	Mangiardi 43	Ontario County
63	July 10, 2002	284819	47977	40.24	Mangiardi 31	Ontario County
64	July 10, 2002	284820	47991	35.40	Mangiardi 38	Ontario County
65	July 10, 2002	286359	48021	29.30	Mangiardi 42	Ontario County
66	July 10, 2002	286358	48022	33.13	Mangiardi 30	Ontario County
67	July 10, 2002	286357	48040	34.58	Mangiardi 27	Ontario County
68	July 10, 2002	286356	48048	35.11	Mangiardi 21	Ontario County
69	July 10, 2002	286355	48047	35.63	Mangiardi 35	Ontario County
70	July 10, 2002	286354	48046	37.77	Mangiardi 36	Ontario County
71	July 10, 2002	286353	48054	35.43	Mangiardi 97	Ontario County
72	July 10, 2002	286352	48055	35.58	Mangiardi 37	Ontario County
73	July 10, 2002	286351	48062	32.83	Mangiardi 31	Ontario County
74	July 10, 2002	286350	48080	34.53	Mangiardi 42	Ontario County
75	July 10, 2002	286349	48073	36.35	Mangiardi 30	Ontario County
76	July 10, 2002	286348	48075	38.12	Mangiardi 38	Ontario County
77	July 10, 2002	286347	48084	34.16	Mangiardi 27	Ontario County
78	July 11, 2002	286346	48249	35.19	Mangiardi 36	Ontario County
79	July 11, 2002	286345	48113	33.84	Mangiardi 97	Ontario County
80	July 11, 2002	286344	48115	37.41	Mangiardi 31	Ontario County
81	July 11, 2002	286343	48120	33.42	Mangiardi 35	Ontario County
82	July 11, 2002	286342	48117	35.90	Mangiardi 43	Ontario County
83	July 11, 2002	286341	48123	33.29	Mangiardi 21	Ontario County
84	July 11, 2002	286340	48160	35.50	Mangiardi 38	Ontario County
85	July 11, 2002	286339	48291	34.84	Mangiardi 27	Ontario County
86	July 11, 2002	286338	48161	36.00	Mangiardi 30	Ontario County
87	July 11, 2002	286337	48173	35.35	Mangiardi 42	Ontario County
88	July 11, 2002	286336	48184	32.67	Mangiardi 31	Ontario County
89	July 11, 2002	286335	48192	33.52	Mangiardi 97	Ontario County
90	July 11, 2002	286334	48194	31.37	Mangiardi 43	Ontario County
91	July 11, 2002	286333	48221	31.54	Mangiardi 21	Ontario County
92	July 11, 2002	286332	48237	39.97	Mangiardi 28	Ontario County
93	July 11, 2002	286360	48246	35.17	Mangiardi 38	Ontario County
94	July 11, 2002	286361	48256	31.89	Mangiardi 42	Ontario County
95	July 11, 2002	286362	48248	37.16	Mangiardi 31	Ontario County
96	July 11, 2002	286363	48255	39.61	Mangiardi 97	Ontario County
97	July 15, 2002	286364	48481	31.21	Mangiardi 97	Ontario County
98	July 16, 2002	286365	48678	34.98	Mangiardi 31	Ontario County
99	July 16, 2002	286366	48682	36.33	Mangiardi 43	Ontario County
100	July 16, 2002	286367	48692	34.87	Mangiardi 97	Ontario County
101	July 16, 2002	286368	48723	35.89	Mangiardi 38	Ontario County
102	July 16, 2002	286369	48744	34.43	Mangiardi 31	Ontario County
103	July 16, 2002	286370	48743	33.35	Mangiardi 43	Ontario County
104	July 16, 2002	286371	48756	38.87	Mangiardi 97	Ontario County
105	July 16, 2002	286372	48745	34.26	Mangiardi 38	Ontario County
106	July 17, 2002	286373	48784	32.93	Mangiardi 39	Ontario County
107	July 17, 2002	286374	48787	30.18	Mangiardi 42	Ontario County
108	July 17, 2002	286375	48814	31.02	Mangiardi 43	Ontario County
109	July 17, 2002	286376	48828	37.40	Mangiardi 31	Ontario County
110	July 17, 2002	286377	48827	36.26	Mangiardi 38	Ontario County
111	July 17, 2002	286378	48832	34.77	Mangiardi 97	Ontario County
112	July 17, 2002	286379	48868	37.71	Mangiardi 42	Ontario County
113	July 17, 2002	286380	48864	32.87	Mangiardi 39	Ontario County
114	July 17, 2002	286381	48907	37.36	Mangiardi 43	Ontario County
115	July 17, 2002	286382	48911	34.25	Mangiardi 35	Ontario County
116	July 17, 2002	286383	48915	36.44	Mangiardi 21	Ontario County
117	July 17, 2002	286384	48917	36.42	Mangiardi 97	Ontario County

TABLE A.3
NON-HAZARDOUS SOIL DISPOSAL

LOAD #	REMOVAL DATE	MANIFEST #	WEIGH TICKET #	QUANTITY (tons)	HAULER	DISPOSAL FACILITY
118	July 17, 2002	286385	48912	37.71	Mangiardi 31	Ontario County
119	July 17, 2002	286386	48908	35.02	Mangiardi 38	Ontario County
120	July 17, 2002	286387	48905	38.52	Mangiardi 39	Ontario County
121	July 17, 2002	286401	48919	33.78	Mangiardi 42	Ontario County
122	July 18, 2002	286388	48985	36.91	Mangiardi 39	Ontario County
123	July 18, 2002	286389	48988	34.98	Mangiardi 43	Ontario County
124	July 18, 2002	286390	48997	35.82	Mangiardi 38	Ontario County
125	July 18, 2002	286391	49005	36.40	Mangiardi 35	Ontario County
126	July 18, 2002	286392	49006	30.55	Mangiardi 21	Ontario County
127	July 18, 2002	286393	49012	33.55	Mangiardi 42	Ontario County
128	July 18, 2002	286394	49016	34.75	Mangiardi 97	Ontario County
129	July 18, 2002	286395	49018	39.05	Mangiardi 31	Ontario County
130	July 18, 2002	286396	49082	35.23	Mangiardi 39	Ontario County
131	July 18, 2002	286397	49083	34.92	Mangiardi 43	Ontario County
132	July 18, 2002	286398	49085	36.43	Mangiardi 38	Ontario County
133	July 18, 2002	286399	49090	32.43	Mangiardi 21	Ontario County
134	July 18, 2002	286400	49088	31.83	Mangiardi 35	Ontario County
135	July 18, 2002	286828	49086	35.36	Mangiardi 31	Ontario County
136	July 18, 2002	286829	49093	32.90	Mangiardi 42	Ontario County
137	July 18, 2002	286830	49098	35.31	Mangiardi 97	Ontario County
138	July 22, 2002	286831	49267	33.54	Mangiardi 30	Ontario County
139	July 22, 2002	286832	49279	35.91	Mangiardi 37	Ontario County
140	July 22, 2002	286833	49277	38.04	Mangiardi 31	Ontario County
141	July 22, 2002	286834	49287	35.64	Mangiardi 43	Ontario County
142	July 22, 2002	286801	49297	37.05	Mangiardi 38	Ontario County
143	July 22, 2002	286802	49346	32.71	Mangiardi 30	Ontario County
144	July 22, 2002	286803	49392	37.11	Mangiardi 31	Ontario County
145	July 22, 2002	286804	49393	26.73	Mangiardi 37	Ontario County
146	July 22, 2002	286805	49373	31.11	Mangiardi 43	Ontario County
147	July 22, 2002	286806	49396	36.57	Mangiardi 38	Ontario County
148	July 22, 2002	286807	49403	37.01	Mangiardi 97	Ontario County
149	July 23, 2002	286808	49430	40.60	Mangiardi 30	Ontario County
150	July 23, 2002	286809	49438	34.51	Mangiardi 37	Ontario County
151	July 23, 2002	286810	49437	39.18	Mangiardi 38	Ontario County
152	July 23, 2002	286811	49507	36.40	Mangiardi 43	Ontario County
153	July 23, 2002	286812	49511	40.07	Mangiardi 30	Ontario County
154	July 23, 2002	286813	49531	37.25	Mangiardi 38	Ontario County
155	July 23, 2002	286814	49534	33.46	Mangiardi 37	Ontario County
156	July 23, 2002	286815	49558	36.99	Mangiardi 43	Ontario County
157	July 23, 2002	286816	49559	35.14	Mangiardi 39	Ontario County
158	July 23, 2002	286817	49561	38.48	Mangiardi 36	Ontario County
159	July 24, 2002	286818	49595	33.02	Mangiardi 30	Ontario County
160	July 24, 2002	286819	49597	30.53	Mangiardi 38	Ontario County
161	July 24, 2002	286820	49629	36.09	Mangiardi 43	Ontario County
162	July 24, 2002	286821	49634	34.52	Mangiardi 39	Ontario County
163	July 24, 2002	286822	49653	36.78	Mangiardi 36	Ontario County
164	July 24, 2002	286823	49654	31.67	Mangiardi 35	Ontario County
165	July 24, 2002	286824	49667	31.83	Mangiardi 30	Ontario County
166	July 24, 2002	286825	49685	35.92	Mangiardi 38	Ontario County
167	July 24, 2002	286826	49704	35.00	Mangiardi 97	Ontario County
168	July 24, 2002	286827	49709	35.98	Mangiardi 43	Ontario County
169	July 24, 2002	286782	49719	41.72	Mangiardi 30	Ontario County
170	July 25, 2002	286783	49751	35.05	Mangiardi 43	Ontario County
171	July 25, 2002	286784	49761	31.98	Mangiardi 97	Ontario County
172	July 25, 2002	286785	49808	36.27	Mangiardi 41	Ontario County
173	July 25, 2002	286786	49809	34.73	Mangiardi 44	Ontario County
174	July 25, 2002	286787	49814	30.51	Mangiardi 30	Ontario County
175	July 25, 2002	286788	49828	35.26	Mangiardi 43	Ontario County
176	July 25, 2002	286789	49848	38.48	Mangiardi 97	Ontario County

TABLE A.3
NON-HAZARDOUS SOIL DISPOSAL

LOAD #	REMOVAL DATE	MANIFEST #	WEIGH TICKET #	QUANTITY (tons)	HAULER	DISPOSAL FACILITY
177	July 25, 2002	286790	49884	39.55	Mangiardi 97	Ontario County
178	July 29, 2002	286791	50042	35.35	Mangiardi 39	Ontario County
179	July 29, 2002	286792	50108	38.91	Mangiardi 42	Ontario County
180	July 29, 2002	286793	50104	33.84	Mangiardi 36	Ontario County
181	July 29, 2002	286794	50113	32.84	Mangiardi 43	Ontario County
182	July 29, 2002	286795	50135	37.57	Mangiardi 39	Ontario County
183	July 29, 2002	286796	50196	41.14	Mangiardi 38	Ontario County
184	July 29, 2002	286797	50191	40.32	Mangiardi 43	Ontario County
185	July 29, 2002	286798	50197	38.48	Mangiardi 36	Ontario County
186	July 29, 2002	286799	50201	37.35	Mangiardi 42	Ontario County
187	July 29, 2002	286800	50194	34.85	Mangiardi 39	Ontario County
188	July 30, 2002	286735	50238	35.36	Mangiardi 31	Ontario County
189	July 30, 2002	286736	50280	37.42	Mangiardi 43	Ontario County
190	July 30, 2002	286737	50284	35.10	Mangiardi 39	Ontario County
191	July 30, 2002	286738	50293	34.28	Mangiardi 36	Ontario County
192	July 30, 2002	286739	50304	34.61	Mangiardi 38	Ontario County
193	July 30, 2002	286740	50303	26.28	Mangiardi 42	Ontario County
194	July 30, 2002	286741	50332	35.91	Mangiardi 31	Ontario County
195	July 30, 2002	286742	50363	35.59	Mangiardi 43	Ontario County
196	July 30, 2002	286743	50371	35.46	Mangiardi 39	Ontario County
197	July 30, 2002	286744	50369	31.41	Mangiardi 36	Ontario County
198	July 30, 2002	286745	50373	32.33	Mangiardi 42	Ontario County
199	August 5, 2002	286746	50908	33.57	Mangiardi 36	Ontario County
200	August 5, 2002	286747	50906	34.68	Mangiardi 39	Ontario County
201	August 5, 2002	286748	50901	34.88	Mangiardi 41	Ontario County
202	August 5, 2002	286749	50915	34.25	Mangiardi 45	Ontario County
203	August 5, 2002	286750	50991	35.82	Mangiardi 41	Ontario County
204	August 5, 2002	286751	51006	33.75	Mangiardi 39	Ontario County
205	August 5, 2002	286752	51009	35.19	Mangiardi 36	Ontario County
206	August 5, 2002	286753	51021	35.16	Mangiardi 45	Ontario County
207	August 5, 2002	286754	51056	36.98	Mangiardi 41	Ontario County
208	August 5, 2002	286755	51059	35.83	Mangiardi 39	Ontario County
209	August 5, 2002	286756	51057	31.81	Mangiardi 36	Ontario County
210	August 5, 2002	286757	51061	33.62	Mangiardi 45	Ontario County
211	August 6, 2002	286758	51135	36.46	Mangiardi 41	Ontario County
212	August 6, 2002	286759	51140	36.61	Mangiardi 36	Ontario County
213	August 6, 2002	286760	51139	33.55	Mangiardi 39	Ontario County
214	August 6, 2002	286761	51146	34.33	Mangiardi 45	Ontario County
215	August 6, 2002	286762	51221	34.43	Mangiardi 36	Ontario County
216	August 6, 2002	286763	51223	33.46	Mangiardi 39	Ontario County
217	August 7, 2002	286764	51289	32.94	Mangiardi 39	Ontario County
218	August 7, 2002	286765	51293	34.67	Mangiardi 36	Ontario County
219	August 7, 2002	286766	51391	35.74	Mangiardi 36	Ontario County
220	August 7, 2002	286767	51390	34.04	Mangiardi 39	Ontario County
221	August 8, 2002	286769	51426	33.02	Mangiardi 97	Ontario County
222	August 8, 2002	286770	51468	34.35	Mangiardi 36	Ontario County
223	August 8, 2002	286771	51505	33.40	Mangiardi 97	Ontario County
224	August 12, 2002	286772	51717	35.91	Mangiardi 36	Ontario County
225	August 12, 2002	286773	51825	38.08	Mangiardi 36	Ontario County
226	August 12, 2002	286774	51839	31.19	Mangiardi 20	Ontario County
227	August 12, 2002	286775	51859	36.85	Mangiardi 37	Ontario County
228	August 12, 2002	286776	51858	41.07	Mangiardi 36	Ontario County
229	August 13, 2002	286777	51961	36.19	Mangiardi 36	Ontario County
230	August 13, 2002	286778	51963	33.88	Mangiardi 37	Ontario County
231	August 13, 2002	286779	52036	35.74	Mangiardi 37	Ontario County
232	August 13, 2002	288391	52035	35.96	Mangiardi 36	Ontario County
233	August 13, 2002	288192	52033	35.00	Mangiardi 39	Ontario County
234	August 14, 2002	288393	52119	31.95	Mangiardi 39	Ontario County
235	August 14, 2002	288394	52128	34.31	Mangiardi 36	Ontario County

TABLE A.3
NON-HAZARDOUS SOIL DISPOSAL

LOAD #	REMOVAL DATE	MANIFEST #	WEIGH TICKET #	QUANTITY (tons)	HAULER	DISPOSAL FACILITY
236	August 14, 2002	288395	52132	31.35	Mangiardi 37	Ontario County
237	August 14, 2002	288396	52205	36.52	Mangiardi 39	Ontario County
238	August 14, 2002	288397	52208	34.64	Mangiardi 37	Ontario County
239	August 14, 2002	288398	52207	36.06	Mangiardi 36	Ontario County
240	August 19, 2002	288399	52626	34.25	Mangiardi 44	Ontario County
241	August 19, 2002	288400	52655	33.79	Mangiardi 43	Ontario County
242	August 19, 2002	288401	52735	34.94	Mangiardi 44	Ontario County
243	August 19, 2002	288402	52736	33.28	Mangiardi 43	Ontario County
244	August 19, 2002	288403	52738	33.24	Mangiardi 45	Ontario County
245	August 19, 2002	288404	52737	36.18	Mangiardi 38	Ontario County
246	August 20, 2002	288405	52760	31.65	Mangiardi 39	Ontario County
247	August 20, 2002	288406	52764	29.10	Mangiardi 36	Ontario County
248	August 20, 2002	288407	52817	31.51	Mangiardi 44	Ontario County
249	August 20, 2002	288408	52815	34.24	Mangiardi 43	Ontario County
250	August 20, 2002	288409	52829	36.08	Mangiardi 38	Ontario County
251	August 20, 2002	288410	52827	34.37	Mangiardi 45	Ontario County
252	August 20, 2002	288411	52910	36.02	Mangiardi 43	Ontario County
253	August 20, 2002	288412	52909	38.59	Mangiardi 44	Ontario County
254	August 21, 2002	288413	52958	32.90	Mangiardi 36	Ontario County
255	August 21, 2002	288414	52975	35.00	Mangiardi 39	Ontario County
256	August 21, 2002	288415	52980	34.06	Mangiardi 44	Ontario County
257	August 21, 2002	288416	52981	36.81	Mangiardi 43	Ontario County
258	August 21, 2002	288417	53046	34.85	Mangiardi 36	Ontario County
259	August 21, 2002	288418	53061	37.63	Mangiardi 39	Ontario County
260	August 21, 2002	288419	53062	38.27	Mangiardi 45	Ontario County
261	August 21, 2002	288420	53063	32.76	Mangiardi 36	Ontario County
262	August 22, 2002	288421	53150	33.88	Mangiardi 43	Ontario County
263	August 22, 2002	288422	53153	34.46	mangiardi 41	Ontario County
264	August 22, 2002	288423	53155	30.75	Mangiardi 46	Ontario County
265	August 22, 2002	288424	53162	32.38	Mangiardi 39	Ontario County
266	August 22, 2002	280284	53173	32.07	Mangiardi 36	Ontario County
267	August 22, 2002	288425	53245	30.30	Mangiardi 42	Ontario County
268	August 22, 2002	288426	53232	31.97	Mangiardi 43	Ontario County
269	August 22, 2002	288427	53247	35.32	Mangiardi 38	Ontario County
270	August 22, 2002	288428	53240	36.88	Mangiardi 36	Ontario County
271	August 26, 2002	288429	53441	33.59	Mangiardi 36	Ontario County
272	August 26, 2002	288430	53450	32.99	Mangiardi 97	Ontario County
273	August 26, 2002	288431	53577	35.87	Mangiardi 36	Ontario County
274	August 26, 2002	288432	53574	33.30	Mangiardi 97	Ontario County
275	August 26, 2002	288433	53616	34.37	Mangiardi 97	Ontario County
276	August 26, 2002	288434	53602	38.58	Mangiardi 36	Ontario County
277	August 27, 2002	288435	53703	38.70	Mangiardi 36	Ontario County
278	August 27, 2002	288436	53705	35.14	Mangiardi 97	Ontario County
279	August 27, 2002	288437	53783	38.16	Mangiardi 36	Ontario County
280	August 27, 2002	288445	53790	36.61	Mangiardi 97	Ontario County
281	September 9,2002	288446	55204	41.36	Mangiardi 97	Ontario County
	TOTAL TONS DISPOSED			**9,747.77**		

11	TOTAL LOADS			75.22	TOTAL TONS RECYCLED		
LOAD #	**REMOVAL DATE**	**MANIFEST #**	**WEIGH TICKET #**	**QUANTITY (tons)**	**HAULER**	**DISPOSAL FACILITY**	**CONTENTS**
1	April 25, 2002	SD1	17224	6.16	CRASH'S CAP	CRASH'S CAP	Fence, steel posts, angle Iron
2	May 14, 2002	SD2	17751	8.24	CRASH'S CAP	CRASH'S CAP	Fence, steel posts, angle iron, UST 404-1
3	May 22, 2002	SD3	18064	4.56	CRASH'S CAP	CRASH'S CAP	Fence, steel posts, angle iron
4	June 6, 2002	SD4	19072	5.39	CRASH'S CAP	CRASH'S CAP	Fence, steel posts, angle iron
5	June 6, 2002	SD5	19072	6.28	CRASH'S CAP	CRASH'S CAP	Fence, steel, angle iron, UST705, UST703
6	July 2, 2002	SD6	19595	8.42	CRASH'S CAP	CRASH'S CAP	Fence, steel posts, angle iron
7	July 2, 2002	SD7	19595	5.55	CRASH'S CAP	CRASH'S CAP	Fence, steel posts angle iron
8	August 7, 2002	SD8	21002	4.70	CRASH'S CAP	CRASH'S CAP	Fence, steel posts, iron, piping
9	August 14, 2002	SD9	21182	8.96	CRASH'S CAP	CRASH'S CAP	Fence, posts, pipe, angle iron, windows
10	August 21, 2002	SD10	21415	6.41	CRASH'S CAP	CRASH'S CAP	Fence, posts, pipe, angle iron, windows
11	September 16, 2002	SD11	22306	10.55	CRASH'S CAP	CRASH'S CAP	Posts, pipe, fencing
	TOTAL TONS DISPOSED			**75.22**			

APPENDIX B
ANALYTICAL RESULTS

Summarized results of the analytical results can be found in Section 2 on Tables 2.2, 2.3 and 2.4.

Included in Appendix B is the raw analytical data as provided by STL Buffalo and the data validation package as submitted by the FPM Group.

(Due to the large volume of paper, analytical data is bound in a separate volume. This volume is on file at the AFRPA office Building 301 at 153 Brooks Road, Rome, NY and at Parsons office in Liverpool, NY in file number 740881. All raw data from STL and all data validation from FPM is included on a CD in PDF format and attached to this report. The file names are Appendix B – Raw Data and Appendix B – Validated Data.)

APPENDIX C
HEALTH AND SAFETY DOCUMENTATION

Table C.1 Dust Monitoring

Table C.2 Lead In Air Monitoring

Noise Monitoring Memorandum without Attachment 1 (Field Data Sheets)

Dust Monitoring Data at SAR/HF49A

Date	PDR Location	Max Display Conc (mg/m^3)	Max STEL Conc (mg/m^3)	Standard [1] Conc (mg/m^3)	Overall Conc (mg/m^3)	NOTES
4/22/02	Workzone	0.082	0.028	4.000	0.017	
	Downwind	0.050	0.024	4.000	0.010	
4/23/02	Workzone	0.114	0.016	4.000	0.003	
	Downwind	0.125	0.007	4.000	0.000	
4/24/02	Workzone	3.597	0.096	4.000	0.021	
	Downwind	0.566	0.030	4.000	0.014	
4/25/02	Downwind	0.432	0.042	4.000	0.000	
	Workzone	0.289	0.033	4.000	0.010	
4/29/02	Downwind	0.060	0.001	4.000	0.000	
	Workzone	0.104	0.008	4.000	0.040	
4/30/02	Downwind	0.036	0.021	4.000	0.012	
	Workzone	0.077	0.027	4.000	0.018	
5/1/02	Downwind	0.039	0.008	4.000	0.003	
	Workzone	0.900	0.013	4.000	0.000	
5/6/02	Downwind	4.280	0.134	4.000	0.034	
	Workzone	0.863	0.032	4.000	0.012	
5/7/02	Downwind	0.201	0.046	4.000	0.027	
	Workzone	0.136	0.035	4.000	0.020	
	Workzone	0.192	0.026	4.000	0.019	
5/8/02	Downwind	0.078	0.005	4.000	0.001	
	Downwind	0.352	0.009	4.000	0.002	
	Workzone	0.198	0.002	4.000	0.000	
	Workzone	0.366	0.012	4.000	0.002	
5/15/02	Downwind	0.547	0.032	4.000	0.010	
	Workzone	0.539	0.027	4.000	0.003	
5/16/02	Downwind	0.753	0.079	4.000	0.015	
	Workzone	0.940	0.040	4.000	0.011	
5/20/02	Downwind	1.894	0.038	4.000	0.003	
	Workzone	0.527	0.026	4.000	0.011	
5/21/02	Downwind	0.370	0.031	4.000	0.008	
	Workzone	3.024	0.240	4.000	0.013	
5/23/02	Downwind	7.019	0.492	4.000	0.061	
	Workzone	1.987	0.047	4.000	0.010	
5/28/02	Downwind	5.198	0.119	4.000	0.016	
	Workzone	9.994	0.285	4.000	0.059	
	Workzone	5.116	0.271	4.000	0.090	
5/29/02	Downwind	0.646	0.040	4.000	0.029	
	Workzone	2.244	0.141	4.000	0.040	
6/3/02	Downwind	1.229	0.146	4.000	0.022	
	Workzone	5.518	0.433	4.000	0.080	
6/4/02	Workzone	11.324	0.038	4.000	0.093	
	Downwind	4.217	0.026	4.000	0.006	
6/10/02	Downwind	0.288	0.559	4.000	0.012	
	Downwind	3.334	0.093	4.000	0.059	
	Workzone	2.392	0.017	4.000	0.058	
6/11/02	Downwind	0.361	0.198	4.000	0.059	
	Workzone	0.559	0.164	4.000	0.039	
6/17/02	Downwind	0.221	0.013	4.000	0.007	
	Workzone	0.280	0.012	4.000	0.004	
6/18/02	Downwind	0.402	0.035	4.000	0.012	
	Workzone	4.452	0.230	4.000	0.050	
6/19/02	Downwind	3.309	0.157	4.000	0.030	
	Workzone	12.223	0.550	4.000	0.125	
6/20/02	Downwind	0.811	0.060	4.000	0.024	
	Workzone	2.362	0.161	4.000	0.039	
6/24/02	Downwind	2.302	0.190	4.000	0.044	
	Workzone	2.913	0.102	4.000	0.012	
6/25/02	Downwind	3.522	0.204	4.000	0.044	
	Workzone	1.220	0.133	4.000	0.036	

Dust Monitoring Data at SAR/HF49A

Date	PDR Location	Max Display Conc (mg/m^3)	Max STEL Conc (mg/m^3)	Standard [1] Conc (mg/m^3)	Overall Conc (mg/m^3)	NOTES
6/26/02	Downwind	2.406	0.111	4.000	0.041	
	Workzone	4.317	0.296	4.000	0.086	
6/27/02	Downwind	0.387	0.081	4.000	0.044	
	Workzone	0.072	0.058	4.000	0.024	
7/1/02	Downwind	0.930	0.146	4.000	0.085	
	Workzone	2.171	0.137	4.000	0.063	
7/2/02	Downwind	4.618	0.279	4.000	0.130	
	Workzone	0.794	0.240	4.000	0.082	
7/3/02	Downwind	9.403	0.286	4.000	0.053	
	Workzone	3.042	0.091	4.000	0.036	
7/8/02	Downwind	3.449	0.202	4.000	0.062	
	Workzone	13.996	0.659	4.000	0.161	
7/9/02	Downwind	0.589	0.125	4.000	0.078	
	Workzone	0.903	0.139	4.000	0.079	
7/10/02	Downwind	1.027	0.089	4.000	0.014	
	Workzone	1.559	0.062	4.000	0.010	
7/11/02	Downwind	1.468	0.036	4.000	0.008	
	Workzone	0.579	0.029	4.000	0.007	
7/15/02	Downwind	15.366	0.525	4.000	0.096	
	Workzone	0.467	0.042	4.000	0.009	
7/16/02	Downwind	6.460	0.032	4.000	0.063	
	Workzone	1.656	0.064	4.000	0.012	
7/17/02	Workzone	2.822	0.069	4.000	0.031	
	Downwind	2.517	0.167	4.000	0.056	
07/18/02	Downwind	1.952	0.140	4.000	0.090	
	Workzone	0.110	0.082	4.000	0.063	
07/22/02	Workzone	2.648	0.134	4.000	0.083	
	Downwind	1.609	0.163	4.000	0.083	
07/24/02	Downwind	7.182	0.314	4.000	0.059	
	Workzone	0.805	0.059	4.000	0.003	
07/25/02		16.019	0.343	4.000	0.036	
	Workzone	14.999	0.583	4.000	0.084	
07/29/02	Downwind	1.499	0.200	4.000	0.041	
	Workzone	1.481	0.086	4.000	0.018	
07/30/02	Downwind	3.658	0.400	4.000	0.061	
	Workzone	9.588	0.520	4.000	0.129	
07/31/02	Downwind	5.679	0.136	4.000	0.044	
	Workzone	7.377	0.238	4.000	0.082	
08/01/02	Downwind	4.691	0.223	4.000	0.055	
	Workzone	9.119	0.472	4.000	0.096	
08/05/02	Downwind	5.047	0.308	4.000	0.070	
	Workzone	34.349	0.408	4.000	0.050	
08/06/02	Downwind	7.219	0.346	4.000	0.098	
	Workzone	8.080	0.216	4.000	0.025	
08/07/02	Downwind	8.264	0.364	4.000	0.061	
	Workzone	406.1*	25.209	4.000	3.528	*Results appear erroneous
08/08/02	Downwind	1.169	0.030	4.000	0.010	Meters will be sent in for cleaning and maintenance
TAG #2	Downwind	239.636*	7.687	4.000	0.514	

Dust Monitoring Data at SAR/HF49A

Date	PDR Location	Max Display Conc (mg/m^3)	Max STEL Conc (mg/m^3)	Standard [1] Conc (mg/m^3)	Overall Conc (mg/m^3)	NOTES
	Workzone	404.49*	7.483	4.000	0.690	The "Downwind meter was moved to the location of the "Workzone" meter as a means to evaluate whether the "Workzone" meter was working the same as the "Downwind meter" (TAG #2). Results for the last couple of days have appeared high and seem to be erroneous. However, site does not appear excessively dusty and therefore, the high numbers indicate the meters are likely measuring false levels and need to be serviced.
TAG #2	Workzone	362.643*	4.380	4.000	0.604	
08/12/02	Downwind	0.037	NA	4.000	.037**	**Meter was set up to log data once every 8-hours. Therefore only one entry was logged. No Workzone data was logged by DR-074. DR-2000 were used for 8/12/02-8/14/02
08/13/02	Downwind	0.131	NA	4.000	0.047	
	Workzone	0.141	NA	4.000	0.039	
08/14/02	Downwind	0.062	NA	4.000	0.045	
	Workzone	0.172	NA	4.000	0.051	
08/20/02	Downwind	1.589	0.051	4.000	0.01	
	Workzone	2.061	0.078	4.000	0.01	
8/21/2002	Downwind	5.844	0.366	4.000	0.044	
	Workzone	0.565	0.022	4.000	0.011	
8/26/2002	Downwind	0.121	0.019	4.000	0.005	
	Workzone	0.164	0.01	4.000	0.003	
8/27/2002	Downwind	0.204	0.013	4.000	0.002	
	Workzone	0.416	0.018	4.000	0.003	
8/28/2002	Downwind	0.1	0.004	4.000	0.001	
	Workzone	0.615	0.033	4.000	0.01	
9/3/2002	Downwind	0.115	0.012	4.000	0.003	
	Workzone	0.428	0.02	4.000	0.008	
9/5/2002	Downwind	9.23	0.14	4.000	0.035	
	Workzone	0.052	0.006	4.000	0.003	
9/9/2002	Downwind	0.522	0.027	4.000	0.013	
	Workzone	0.068	0.017	4.000	0.012	
9/10/2002	Downwind	6.859	0.146	4.000	0.052	
	Workzone	0.35	0.104	4.000	0.041	
9/12/2002	Downwind	1.128	0.114	4.000	0.016	
	Workzone	3.703	0.184	4.000	0.042	

Notes:

1. 8-Hour exposure limit for total dust

LEAD MONITORING DATA AT SAR/HF49A

Date	Sample ID	Air Volume (m3)	Total (ug)	Standard (ug/m3)	Concentration (ug/m3)	Person/ Location
4/23/2002	HF-388	0.960	<0.38	50.0	<.4	Downwind
4/23/2002	HF-390	0.900	<0.38	50.0	<.4	Charlotte
4/23/2002	HF-391	0.900	<0.38	50.0	<.4	Vito
4/24/2002	HF-387	0.890	<0.38	50.0	<.4	Gary
4/24/2002	HF-389	0.990	<0.38	50.0	<.4	Downwind
4/24/2002	HF-395	0.740	<0.38	50.0	0.5	Ralph
5/1/2002	HF-400	1.000	<0.38	50.0	<.4	Downwind
5/6/2002	HF-393	1.060	0.437	50.0	0.41	Downwind
5/15/2002	HF-403	1.100	<0.38	50.0	<.3	Downwind
5/16/2002	HF-404	1.050	<0.38	50.0	<.4	Downwind
5/20/2002	HF-396	0.930	<0.38	50.0	<.4	Ralph
5/20/2002	HF-401	1.070	<0.38	50.0	<.4	Downwind
5/20/2002	HF-405	0.930	<0.38	50.0	<.4	Vito
5/28/2002	HF-417	1.080	<0.38	50.0	<.4	Downwind
6/4/2002	HF-414	1.040	<0.38	50.0	<.3	Vito
6/4/2002	HF-413	1.040	<0.38	50.0	<.4	Ralph
6/4/2002	HF-412	1.100	<0.38	50.0	<.4	Downwind
6/10/2002	HF-408	1.120	0.732	50.0	0.65	Downwind
6/19/2002	HF-409A	0.9	<0.38	50.0	<.4	Downwind
6/19/2002	Lab Blank	NA	<0.38	50.0	NA	
6/26/2002	HF-406a	1.020	<0.38	50.0	<.4	Downwind
6/26/2002	Lab Blank	NA	<0.38	50.0	NA	
7/3/2002	HF-1251	0.870	<0.38	50.0	<.4	Downwind
7/3/2002	Lab Blank	NA	<0.38	50.0	NA	
7/8/2002	HF-1253	1.020	<0.38	50.0	<.4	Downwind
7/15/2002	HF-1259	0.920	<0.38	50.0	<.4	Downwind
7/25/2002	HF-1268	0.858	<0.38	50.0	<.4	Downwind
7/29/2002	HF-1260	NA	<0.38	50.0	NA	Field Blank
7/30/2002	HF-1265	0.990	<0.38	50.0	<.4	Downwind
8/8/2002	HF-203	0.966	<0.38	50.0	<.4	Downwind
8/14/2002	HF-208	0.936	<0.38	50.0	<.4	Downwind
8/14/2002	Lab Blank	NA	<0.38	50.0	NA	
8/21/2002	HF-207	0.978	<0.38	50.0	<.4	Downwind
8/28/2002	HF-206	0.960	<0.38	50.0	<.4	Downwind
9/5/2002	HF-204	0.680	<0.38	50.0	<.6	Downwind
9/5/2002	Lab Blank	NA	<0.38	50.0	NA	
9/12/2002	HF-214	0.874	<0.38	50.0	<.4	Downwind

Notes:
NA = Not Applicable
m3 = cubic meters
ug = micrograms
ug/m3 = micrograms per cubic meter

INTEROFFICE MEMORANDUM

TO: JOHN LANIER AND HEATHER RAYMOND

FROM: KELLY MILLER

Subject: Noise Dosimetry results – July 2002

DATE: 8/7/2002

CC: ANDY SOOS AND BILL BRADFORD

Parsons is pleased to present the results for the noise dosimetry survey in July 2002 at Griffiss Air Force Base (GAFB) facility in Rome, New York. This report includes a summary of the sampling protocol and noise measurements for Hardfill 49A and recommended actions.

EXECUTIVE SUMMARY

The excavation area at Hardfill 49A has noise levels at or above 85 decibels and should continue abiding with the Health and Safety Plan that was written and approved by our in-house CIH on February 22, 2002.

The noise survey results (Table 1) should be posted for all personnel entering the excavation area at Hardfill 49A to review.

SAMPLING PROTOCOL

Four Quest® Model 300 integrating noise level dosimeter meters with data loggers were used to determine personal noise exposures during the four days of testing. These meters where rented from Pine Environmental Services, Inc. (PINE) of Cranberry, NJ. All four meters were factory-calibrated by PINE. All meters received a new 9-volt battery after each day's testing to prevent any operational data loss.

These meters ran for variable time frames ranging from 7.51 hours to 11.32 hours at any given time. The meters were put on employee's waists with a wire running from the pump to a microphone clipped to their collar near their ear. The Union workers completed their normal daily activities each day.

RESULTS AND RECOMMENDATIONS

Noise exposure limits are set in the United States by the Occupational Safety and Health Administration (OSHA) under CFR 29 1910.95. The sound intensity is measured on a logarithmic scale using units of decibels and an arbitrary base or set of frequencies. The OSHA noise exposure limits can be characterized as follows:

1. Above 90 decibels for an eight-hour day requires engineering controls to reduce noise and implementation of the procedural details shown in Item 2 below.
2. Above 85 decibels for an eight-hour day requires a written hearing conservation program, annual and pre-employment medical evaluation and annual training.

The GAFB Health and Safety Plan (for all areas above 85 decibels) have the following components:

1. Earplugs
2. Annual training for affected employees
3. Annual noise exposure evaluations
4. Annual audiograms
5. Written program
6. Posting affected work area with warning signs

Results of the noise survey are presented in Table 1 (attached). Table 1 shows noise exposure for field-operating personnel and area samples.

The noise dosimeters used are accurate to plus or minus two decibels. Union workers may work variable hours per day according to their daily work assignments, exposing them to varying noise exposures. Using a cutoff of 83 decibels instead of 85 decibels allows a comfortable safety factor for these variables in the assessment of the data collected by Parsons.

Parsons' union personnel and Parsons' employees doing a variety of tasks in the field such as heavy equipment operation and screening near the conveyor, have daylong exposures of 72.7 to 92.5 decibels.

Parsons general industrial experience has shown that, regardless of the season, heavy equipment operators and laborers are exposed to higher noise levels than many other field workers. As a rule of thumb, keeping the doors on heavy equipment (when possible) closed will reduce noise exposure to decibel levels in the low eighties. Keeping the doors open (assuming there are any doors) will cause noise exposures above 85 decibels. Obviously, in summer these doors are more likely to be open, causing, higher noise exposure to the operators.

The present field observations confirm that some individuals have higher noise exposure than others due to varying environmental factors. Heavy equipment operators and anyone working around heavy equipment should be encouraged to wear hearing protection when operating heavy equipment.

TABLE 1

NOISE SURVEY RESULTS

TABLE 1
GRIFFISS AIR FORCE BASE
NOISE DOSIMETRY DATA
HARDFILL 49A
July 15 - July 18, 2002

DATE	DEPARTMENT WORK AREA	EMPLOYEE	EMPLOYEE NUMBER	QUEST METER	DURATION OF TEST (hrs.)	EQUIVALENT SOUND LEVEL (dB)	COMMENTS
7/15/2002	Hardfill 49A	Area Sample		01492/QCA080063	7.57	72.7	North side of Hardfill 49A
7/15/2002	Hardfill 49A	Greg Davis	01784'	00700/QC970095	11.32	92.2	laborer - screening under the conveyor
7/15/2002	Hardfill 49A	Vito Decarlo	01016'	01492/QCA080063	9.00	90.8	laborer - screening under the conveyor
7/15/2002	Hardfill 49A	Charlotte Garvey	01013'	00868/QC9120051	8.51	84.8	operator
7/16/2002	Hardfill 49A	Vito Decarlo	01016'	01492/QCA080063	8.03	92.5	laborer - screening under the conveyor
7/17/2002	Hardfill 49A	Area Sample		00700/QC970095	7.51	36.8	NE side of Hardfill 49A, meter was not properly functioning.
7/17/2002	Hardfill 49A	Charlotte Garvey	01013'	01493/QCA080062	8.28	84.1	operator - mechanic, worked on bucket, went off site to get supplies to fix the conveyor.
7/17/2002	Hardfill 49A	Vito Decarlo	01016'	01492/QCA080063	8.21	91.9	laborer - screening under the conveyor
7/17/2002	Hardfill 49A	Greg Davis	01784'	00868/QC9120051	8.17	87.5	laborer - screening under the conveyor
7/18/2002	Hardfill 49A	Vito Decarlo	01016'	01492/QCA080063	8.02	88.8	laborer - screening under the conveyor
7/18/2002	Hardfill 49A	Greg Davis	01784'	00700/QC970095	7.54	90.8	laborer - screening under the conveyor
7/18/2002	Hardfill 49A	Area Sample		00868/QC9120051	7.40	65.4	SE side of Hardfill 49A
7/18/2002	Hardfill 49A	Gary Plumadore	01012'	01493/QCA080062	7.28	83.3	operator - backhoe and loader

< than 83 db - should comply with the original H&S plan dated February 20, 2002

APPENDIX D
DAILY FIELD REPORTS

A record of work performed was kept on a daily basis. There is a one or two-page report with photographs for each day of activity on the site.

(Due to the large volume of paper, hard copies of these reports are kept in a separate bound volume. This volume is on file at the AFRPA office Building 301 at 153 Brooks Road, Rome, NY and at Parsons office in Liverpool, NY in file number 740881. A CD with all the electronic files, in PDF format labeled Appendix D is attached.)

APPENDIX E
TOPOGRAPHICAL SURVEYS

Copies of the pre-excavation, post-excavation and final contours surveys, as performed by LaFave, White & McGivern, LS PC of Boonville, NY are included on the attached CD, in PDF format, in the file labeled Appendix E.