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INTERIM REMEDIAL ACTION FOR STUDY AREAS 17, 18, 23, 35, 40, 42 AND OPERABLE
UNIT 3 (OU 3) AND OPERABLE UNIT 4 (OU 4) NTC ORLANDO FL
4/8/1999
NAVY SHIPBUILDING, CONVERSION AND REPAIR

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**INTERIM REMEDIAL ACTION FOR
SAI 7, 18, 23, 35, 37, 40, 42 AND OU 3 & 4
NAVAL TRAINING CENTER & McCOY ANNEX
ORLANDO, FL**



Prepared for:

**DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON SC**



Prepared by:

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April 8, 1999

INTERIM REMEDIAL ACTION

SA17, 18, 23, 35, 37, 40, 42, and OU 3 & 4

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APPROVAL (DETACHMENT): J. M. Stunzell

INTERIM REMEDIAL ACTION

SA17, 18, 23, 35, 37, 40, 42, and OU 3 & 4

1. BACKGROUND

Southern Division Naval Facilities Engineering Command (SOUTHDIV) has tasked Supervisor of Shipbuilding, Conversion and Repair, Portsmouth, Va. Environmental Detachment Charleston (DET) to provide a Interim Remedial Action (IRA) Work Plans for Study Areas (SA) 17, 18, 23, 35, 37, 40, and Operable Units (OU) 3 and 4 at the Naval Training Center (NTC) and McCoy Annex, Orlando Florida. The objective of this Interim Remediation Action (IRA) is to excavate and dispose of the contaminated soils at these areas. Confirmatory sampling will performed in accordance with the Project Operations Plan for Site Investigations and Remedial Investigations dated August 1997. All areas will be backfilled with Florida-certified clean fill, graded to meet the surrounding area and reseeded.

The cleanup goals for these sites will be as listed in the Florida Department of Environmental Protection (FDEP) Soil Cleanup Goals (SCG), dated 30 April 1998, or the Risk-Based Concentration Table, USEPA Region III, dated 01 Oct 1998 (RBC), whichever specifies the stricter criteria.

Individual site excavation boundaries and sampling requirements are consistent with the Base Realignment and Closure (BRAC) Work Plans for IRAs prepared by Harding Lawson Associates (HLA).

This IRA may not necessarily be the final remedial action taken at these sites. Additional actions may be required as determined by the Remedial Investigation/Feasibility Study (RI/FS) process. This IRA is consistent with the ultimate cleanup of this site and is not intended to circumvent the public participation process inherent within environmental cleanup under RCRA.

Separate Work Plans are provided in Tabs A thru I of this document for each area of concern.

Tab J provides the Site Specific Health and Safety Plan (SSHSP).

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SA 17

1. WORK PLAN OBJECTIVE

The objective of this IRA is to excavate and properly dispose of soil contaminated with Polynuclear Aromatic Hydrocarbons (PAHs) at concentrations above industrial screening values as listed in the FDEP SCG, dated 30 April 1998, or the RBC Table, USEPA Region III, dated 01 October 1998 (RBC), whichever specifies the stricter criteria. See Figure 1 for location of SA 17.

2. WORK PLAN IMPLEMENTATION

2.1 SITE Excavate a somewhat irregular shaped area approximately 300' x 120' to a depth of 2'. The limits of the excavation are based on estimates made by Harding Lawson Associates (HLA) in the Base Realignment and Closure (BRAC) Work Plan for IRA for SA 17 dated January 1999. The soils will be excavated until the sampling program indicates with reasonable confidence that the concentrations of any PAHs at the site are less than the levels indicated in Section 1. The site will be backfilled with Florida-certified clean fill, graded to surrounding area and reseeded to control sediment runoff. See Figure 2 for site and excavation locations.

Excavation will not impede within 5' of any monitoring wells that are not abandoned.

A portion of the chain link fence on the southwestern side of the excavation will be removed to accomplish excavation near sample point 17B035. The fence will be reinstalled upon completion of backfill.

Silt fencing will be installed along the southwestern side of the excavation to ensure runoff from excavated area does not influence adjacent drainage ditch.

3. SAMPLING

Upon completion of excavation, confirmation samples will be taken every 50' along each sidewall and tested for PAHs.

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4. WASTE MANAGEMENT

In accordance with 40 Code of Federal Regulations (CFR) 261 soils from this site have been characterized as non-hazardous and will be sent to a permitted Subtitle D landfill or treatment facility.

Investigative Derived Waste (IDW) such as plastic sheeting, decontamination water and personal protective equipment generated through excavation, sampling or decontamination evolutions will be disposed of similarly.

5. COMPLETION REPORT

A completion report will be submitted within 14 days after SOUTHDIV agrees the IRAs at the SAs are complete (Review of Data and Walk-through). This report will summarize actions taken and report the following as required: Excavated volumes, nature of wastes generated, waste disposal, sampling evolutions, sample results, site photographs, problems encountered, and any other information that could be helpful in future remediation or reuse of the site.

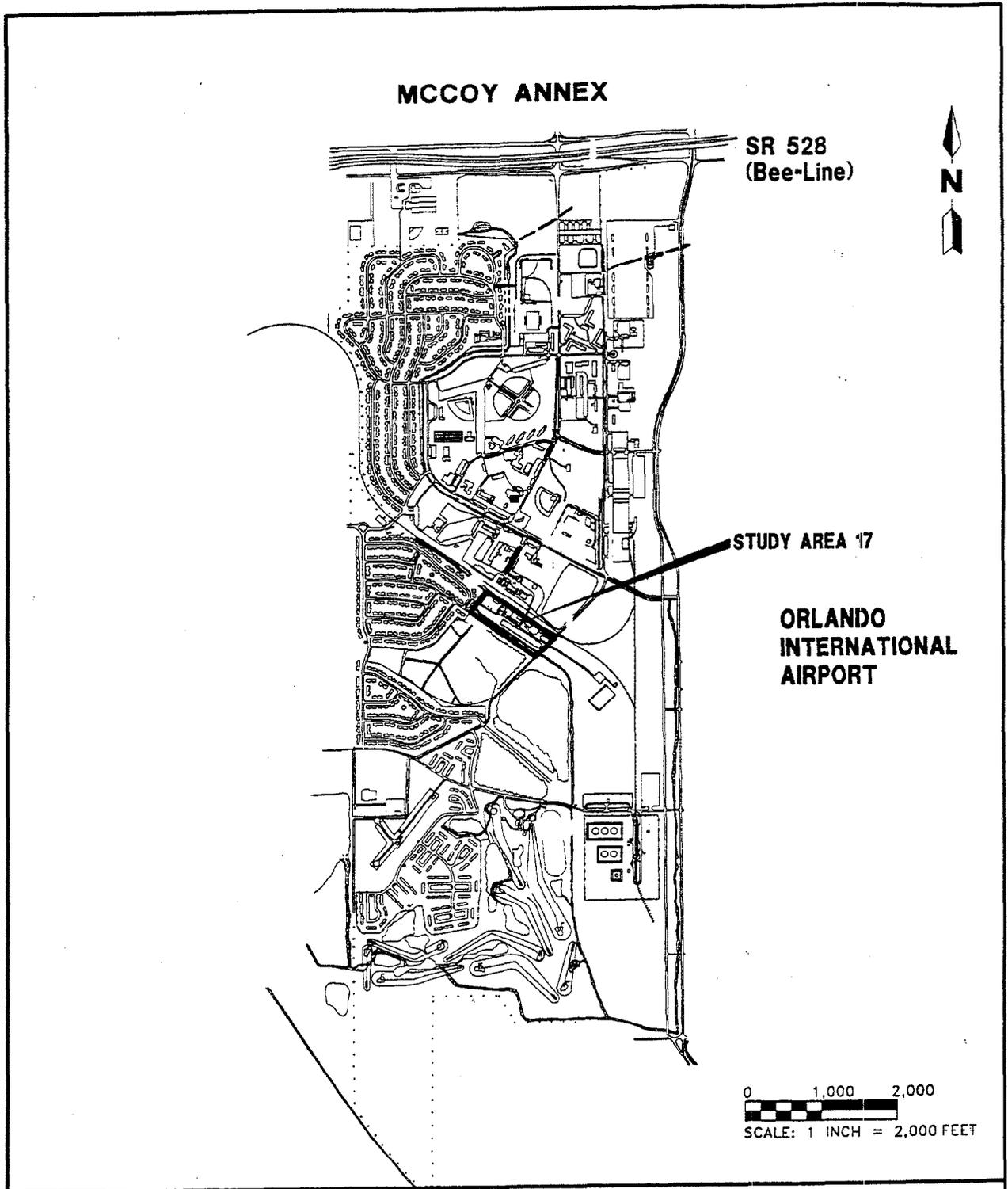


FIGURE 1
LOCATION OF STUDY AREA 17



**BASE REALIGNMENT AND CLOSURE
WORK PLAN FOR INTERIM REMEDIAL
ACTION, STUDY AREA 17**

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INTERIM REMEDIAL ACTION

SA17, 18, 23, 35, 37, 40, 42, and OU 3 & 4

SA 18

1. WORK PLAN OBJECTIVE

The objective of this IRA is to excavate and properly dispose of soil contaminated with PAHs at concentrations above industrial screening values as listed in the FDEP SCG, dated 30 April 1998, or the RBC Table, USEPA Region III, dated 01 October 1998, whichever specifies the stricter criteria. See Figure 1 for location of SA 18.

2. WORK PLAN IMPLEMENTATION

2.1 **SITE** Excavate approximately 20' x 20' to a depth of 2' at sample location 18S008. The sample location will be marked/staked by HLA prior to excavation. The limits of the excavation are based on estimates made by HLA in the BRAC Work Plan for IRA for SA 18 dated September 1998. The site will be backfilled with Florida-certified clean fill, graded to surrounding area and reseeded to control sediment runoff. See Figure 2 for site and excavation location.

3. SAMPLING

Upon completion of excavation, a confirmation sample will be taken on the north and south sidewalls and tested for PAHs.

4. WASTE MANAGEMENT

In accordance with 40 Code of Federal Regulations (CFR) 261 soils from this site have been characterized as non-hazardous and will be sent to a permitted Subtitle D landfill or treatment facility.

Investigative Derived Waste (IDW) such as plastic sheeting, decontamination water and personal protective equipment generated through excavation, sampling or decontamination evolutions will be disposed of similarly.

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5. COMPLETION REPORT

A completion report will be submitted within 14 days after SOUTHDIV agrees the IRAs at the SAs are complete (Review of Data and Walk-through). This report will summarize actions taken and report the following as required: Excavated volumes, nature of wastes generated, waste disposal, sampling evolutions, sample results, site photographs, problems encountered, and any other information that could be helpful in future remediation or reuse of the site.

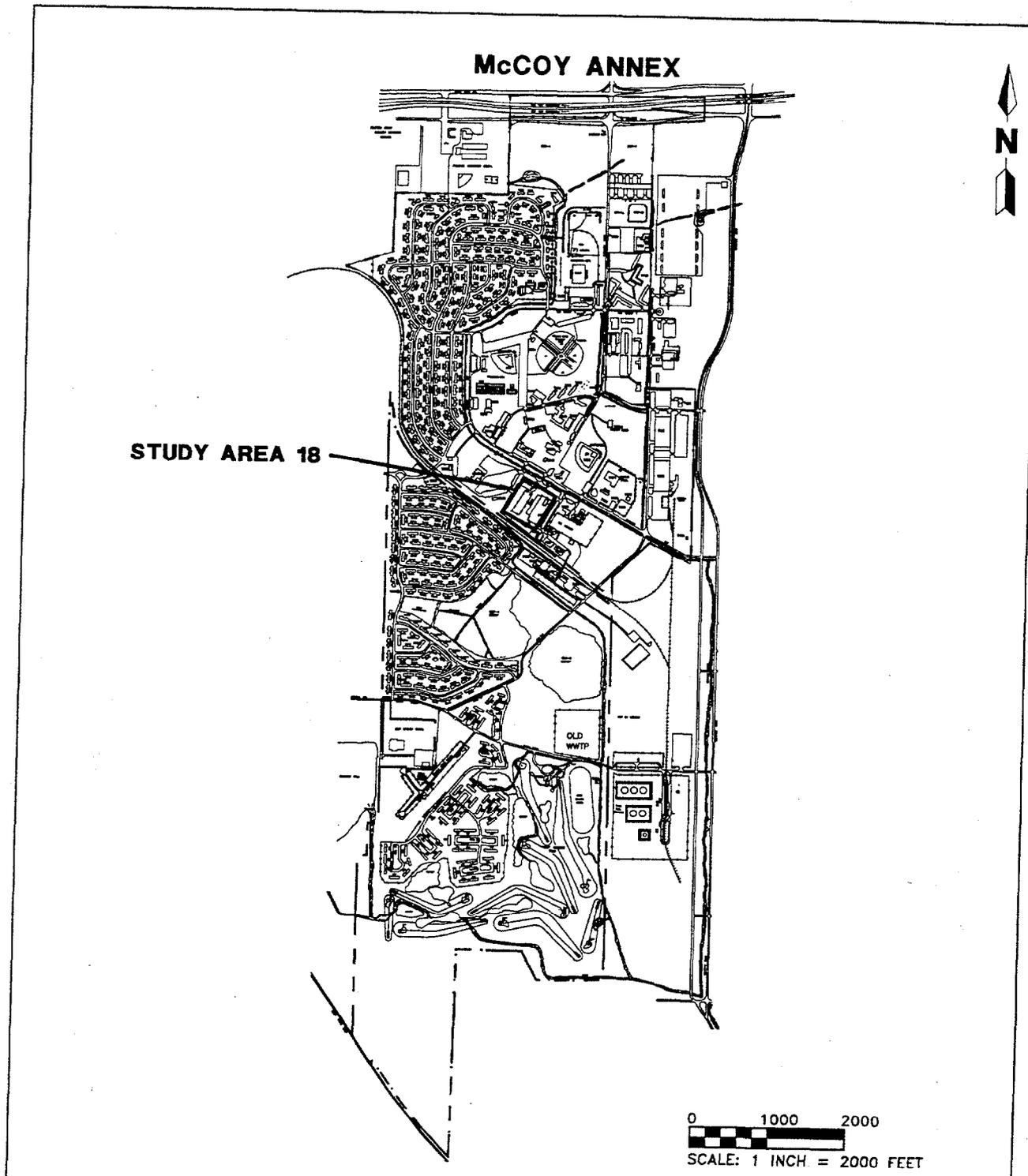


FIGURE 1
LOCATION OF STUDY AREA 18



**BASE REALIGNMENT AND CLOSURE
WORKPLAN FOR INTERIM
REMEDIAL ACTION, STUDY AREA 18**

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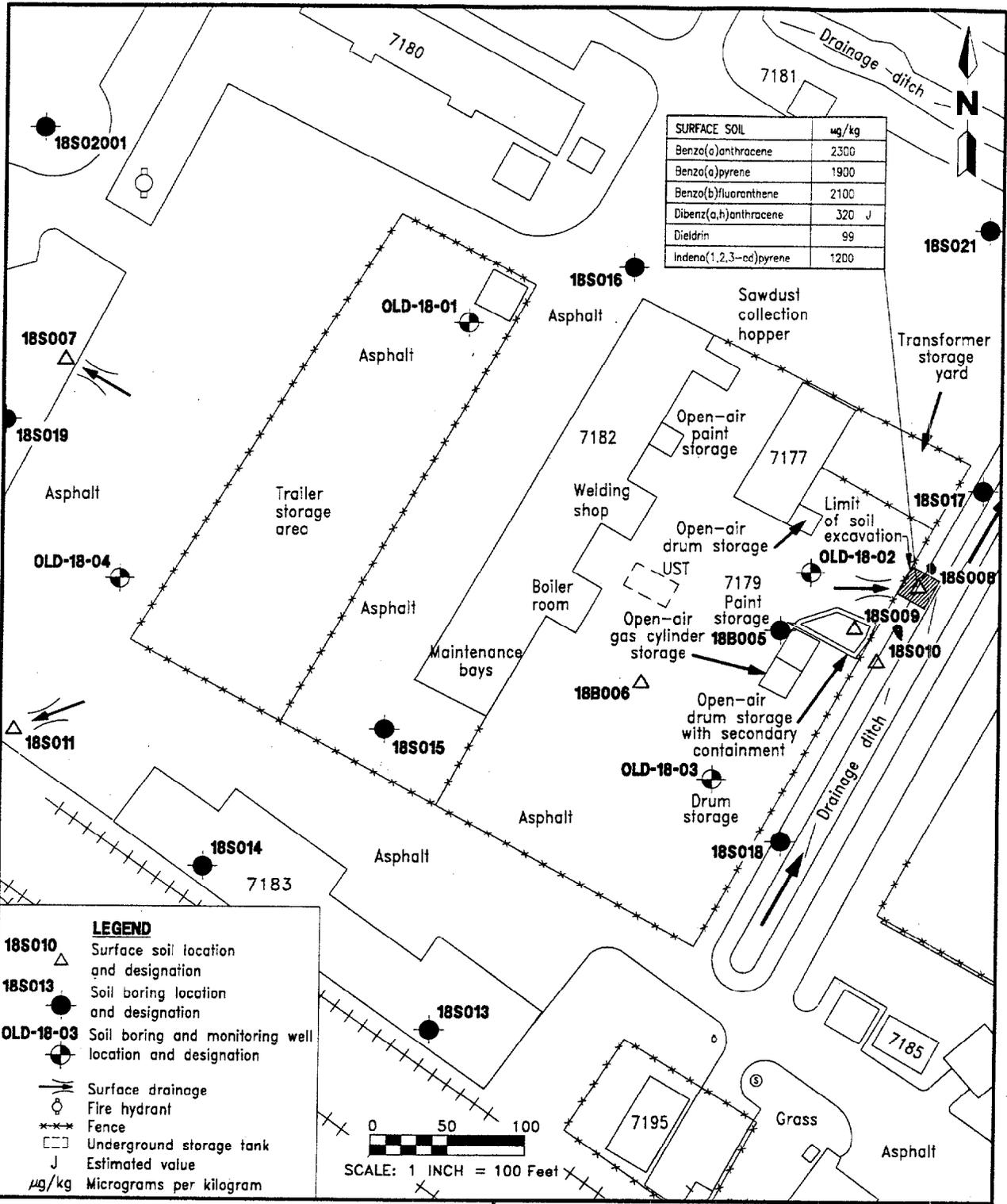


FIGURE 2
EXCEEDANCES OF INDUSTRIAL SCREENING
CRITERIA IN SURFACE SOIL
STUDY AREA 18, MCCOY ANNEX



BASE REALIGNMENT AND CLOSURE
WORKPLAN FOR INTERIM
REMEDIAL ACTION, STUDY AREA 18

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INTERIM REMEDIAL ACTION

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SA 23

1. WORK PLAN OBJECTIVE

The objective of this IRA is to excavate and properly dispose of soil contaminated with PAHs at concentrations above industrial screening values as listed in the FDEP SCG, dated 30 April 1998, or the RBC Table, USEPA Region III, dated 01 October 1998, whichever specifies the stricter criteria. See Figure 1 for location of SA 23.

2. WORK PLAN IMPLEMENTATION

2.1 SITE Excavate approximately 5' x 5' to a depth of 2' at sample location 18S008. The sample location will be marked/staked by HLA prior to excavation. The limits of the excavation are based on estimates made by HLA in the BRAC Work Plan for IRA for SA 23 dated September 1998. The site will be backfilled with Florida-certified clean fill, graded to surrounding area and reseeded to control sediment runoff. See Figure 2 for site and excavation location.

3. SAMPLING

No confirmation sampling required.

4. WASTE MANAGEMENT

In accordance with 40 Code of Federal Regulations (CFR) 261 soils from this site have been characterized as non-hazardous and will be sent to a permitted Subtitle D landfill or treatment facility.

Investigative Derived Waste (IDW) such as plastic sheeting, decontamination water and personal protective equipment generated through excavation, sampling or decontamination evolutions will be disposed of similarly.

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5. COMPLETION REPORT

A completion report will be submitted within 14 days after SOUTHDIV agrees the IRAs at the SAs are complete (Review of Data and Walk-through). This report will summarize actions taken and report the following as required: Excavated volumes, nature of wastes generated, waste disposal, sampling evolutions, sample results, site photographs, problems encountered, and any other information that could be helpful in future remediation or reuse of the site.

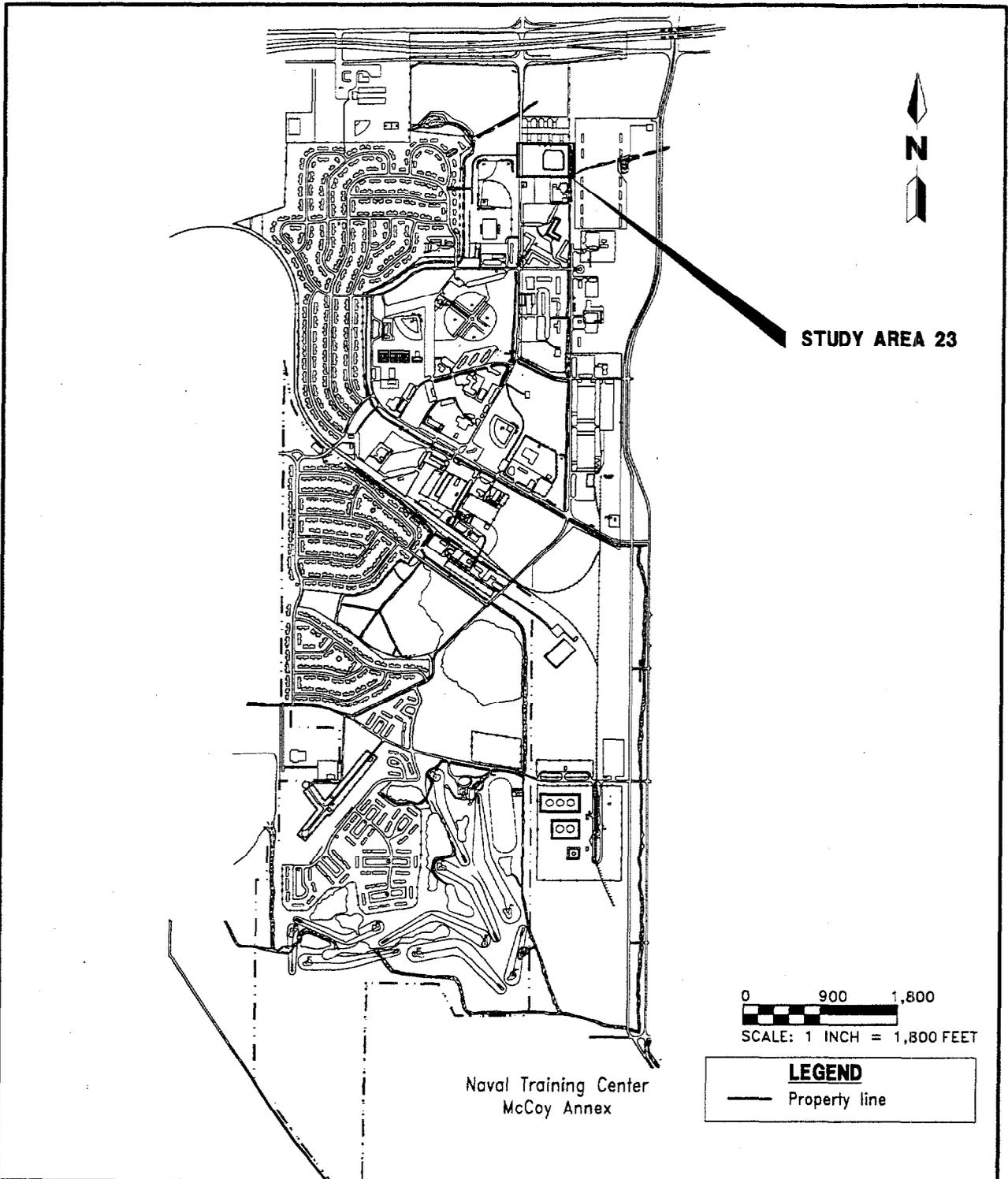


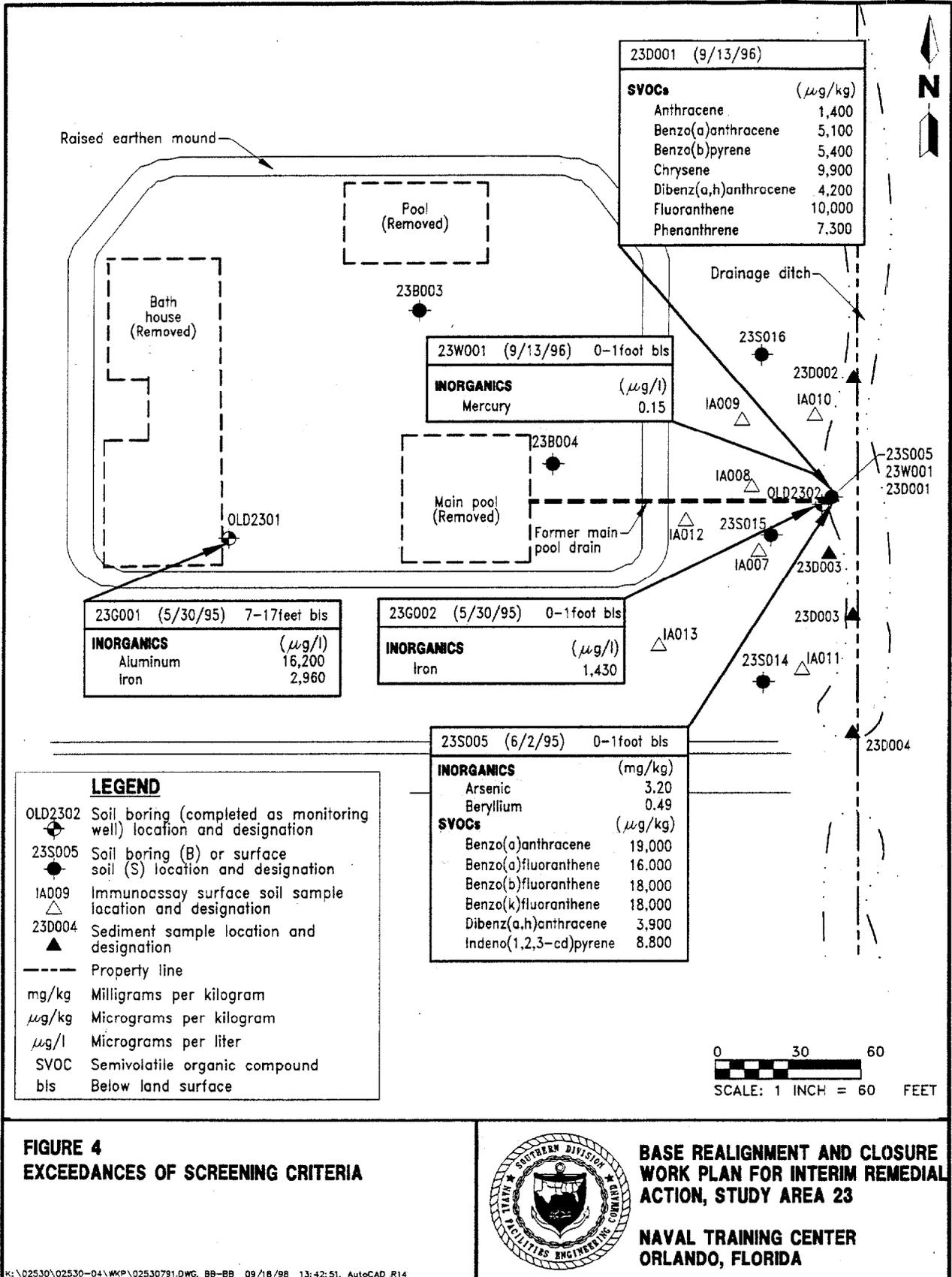
FIGURE 1
STUDY AREA LOCATION



**BASE REALIGNMENT AND CLOSURE
WORK PLAN FOR INTERIM REMEDIAL
ACTION, STUDY AREA 23**

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INTERIM REMEDIAL ACTION

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SA 35

1. WORK PLAN OBJECTIVE

The objective of this IRA is to excavate and properly dispose of soil contaminated with Total Recoverable Petroleum Hydrocarbons (TRPH) and arsenic at concentrations above residential screening values as listed in the FDEP SCG, dated 30 April 1998, or the RBC Table, USEPA Region III, dated 01 October 1998, whichever specifies the stricter criteria. See Figure 3, 4, and 5 for the locations of areas A thru I in SA 35.

2. WORK PLAN IMPLEMENTATION

2.1.1 Area A Excavate an area approximately 8' x 10' to a depth of 2' at sample 35S005. The sample location will be marked/staked by HLA prior to excavation. The limits of the excavation are based on estimates made by HLA in the BRAC Work Plan for IRA for SA 35 dated January 1999. The site will be backfilled with Florida-certified clean fill, graded to surrounding area and reseeded to control sediment runoff. See Figure 3 for site and excavation locations.

Excavation will not impede within 5' of any monitoring wells that are not abandoned.

2.1.2 Area B Excavate an area approximately 10' x 10' to a depth of 2' at monitoring well OLD-35-02. The monitoring well will be abandoned by HLA prior to excavation. The limits of the excavation are based on estimates made by HLA in the BRAC Work Plan for IRA for SA 35 dated January 1999. The site will be backfilled with Florida-certified clean fill, graded to surrounding area and reseeded to control sediment runoff. See Figure 3 for site and excavation locations.

2.1.3 Area C Excavate an area approximately 30' x 20' to a depth of 10' extending 5' around the perimeter of the exterior lift pit north of Building 2078. The limits of the excavation are based on estimates made by HLA in the BRAC Work Plan for IRA for SA 35 dated January 1999. The site will be backfilled with Florida-certified

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clean fill, graded to surrounding area and reseeded to control sediment runoff. See Figure 3 for site and excavation locations.

2.1.4 Area D Excavate an area approximately 32' x 20' to a depth of 10' extending 5' around the perimeter of the interior lift pits on the east side of building 2078. The monitoring well will be abandoned by HLA prior to excavation. The limits of the excavation are based on estimates made by HLA in the BRAC Work Plan for IRA for SA 35 dated January 1999. The site will be backfilled with Florida-certified clean fill and graded to the surrounding area. See Figure 4 for site and excavation locations.

2.1.5 Area E Excavate an area approximately 50' x 30' to a depth of 10' extending 5' around the perimeter of the three interior lift pits on the west side of building 2078. The monitoring wells will be abandoned by HLA prior to excavation. The limits of the excavation are based on estimates made by HLA in the BRAC Work Plan for IRA for SA 35 dated January 1999. The site will be backfilled with Florida-certified clean fill and graded to the surrounding area. See Figure 4 for site and excavation locations.

2.1.6 Area F Excavate an area approximately 5' x 5' to a depth of 2' at sample point 35S009. The sample location will be marked/staked by HLA prior to excavation. The limits of the excavation are based on estimates made by HLA in the BRAC Work Plan for IRA for SA 35 dated January 1999. The site will be backfilled with Florida-certified clean fill, graded to surrounding area and reseeded to control sediment runoff. See Figure 5 for site and excavation locations.

2.1.7 Area G Excavate an area approximately 5' x 5' to a depth of 2' at monitoring well OLD-35-01. The monitoring well will be abandoned by HLA prior to excavation. The limits of the excavation are based on estimates made by HLA in the BRAC Work Plan for IRA for SA 35 dated January 1999. The site will be backfilled with Florida-certified clean fill, graded to surrounding area and reseeded to control sediment runoff. See Figure 5 for site and excavation locations.

INTERIM REMEDIAL ACTION

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2.1.6 Area H Excavate an area approximately 10' x 10' to a depth of 2' at sample point 35S007. The sample location will be marked/staked by HLA prior to excavation. The limits of the excavation are based on estimates made by HLA in the BRAC Work Plan for IRA for SA 35 dated January 1999. The site will be backfilled with Florida-certified clean fill, graded to surrounding area and reseeded to control sediment runoff. See Figure 5 for site and excavation locations.

2.1.6 Area I Excavate an area approximately 10' x 10' to a depth of 2' at sample point 35S008. The sample location will be marked/staked by HLA prior to excavation. The limits of the excavation are based on estimates made by HLA in the BRAC Work Plan for IRA for SA 35 dated January 1999. The site will be backfilled with Florida-certified clean fill, graded to surrounding area and reseeded to control sediment runoff. See Figure 5 for site and excavation locations.

3. SAMPLING

3.1.1 Areas A, B, & E Upon completion of excavation, confirmation samples will be taken along each sidewall and tested for TRPH using the Florida –Petroleum Residual Organics Method and arsenic using the USEPA Method 3050/7060.

3.1.2 Areas C & D Upon completion of excavation, confirmation samples will be taken along each sidewall and tested for TRPH using the Florida –Petroleum Residual Organics Method.

3.1.3 Areas F, G, H, & I Upon completion of excavation, confirmation samples will be taken along each sidewall and tested for and arsenic using the USEPA Method 3050/7060.

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4. WASTE MANAGEMENT

In accordance with 40 Code of Federal Regulations (CFR) 261 soils from this site have been characterized as non-hazardous and will be sent to a permitted Subtitle D landfill or treatment facility.

Investigative Derived Waste (IDW) such as plastic sheeting, decontamination water and personal protective equipment generated through excavation, sampling or decontamination evolutions will be disposed of similarly.

5. COMPLETION REPORT

A completion report will be submitted within 14 days after SOUTHDIV agrees the IRAs at the SAs are complete (Review of Data and Walk-through). This report will summarize actions taken and report the following as required: Excavated volumes, nature of wastes generated, waste disposal, sampling evolutions, sample results, site photographs, problems encountered, and any other information that could be helpful in future remediation or reuse of the site.

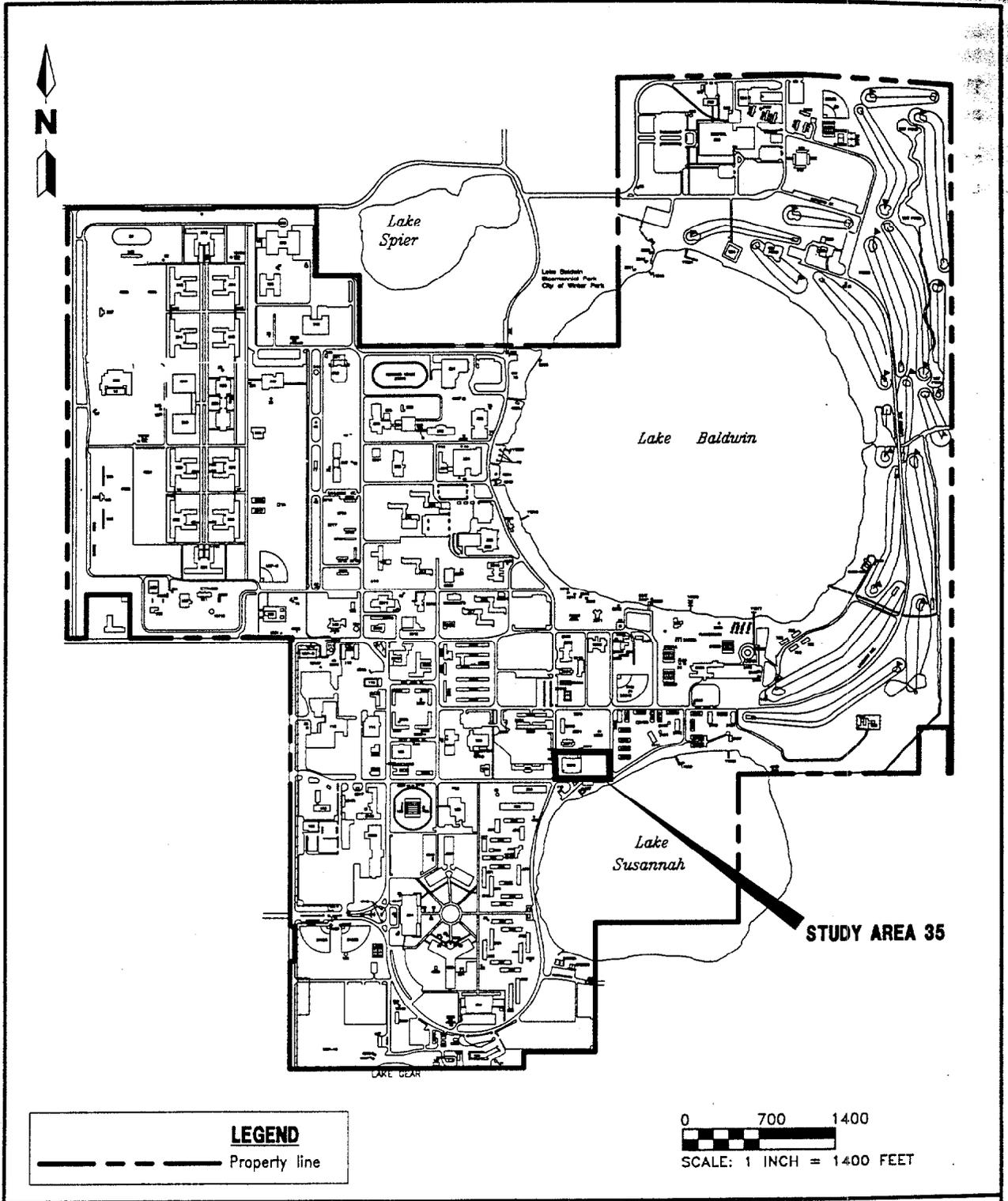


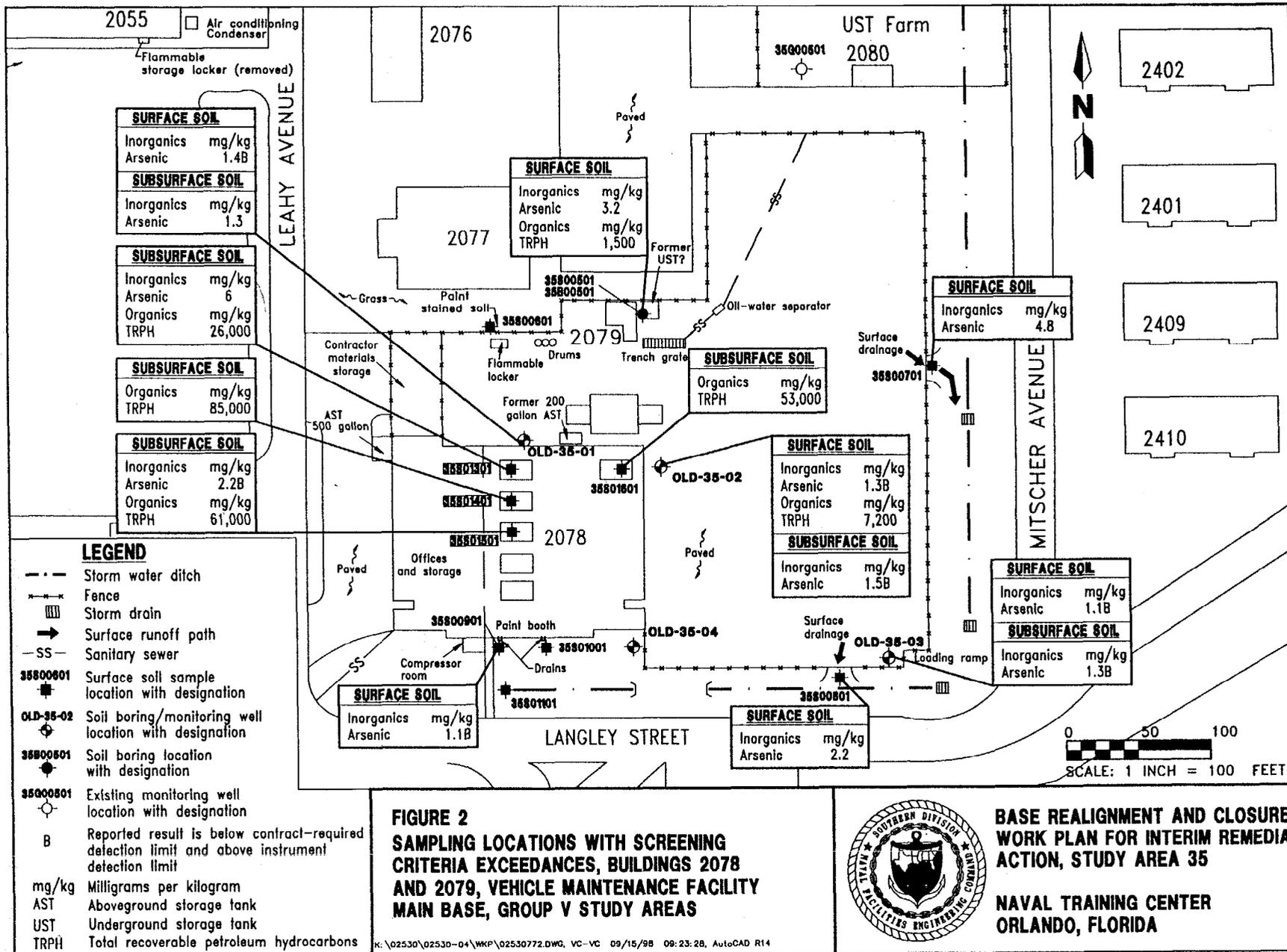
FIGURE 1
LOCATION OF STUDY AREA 35

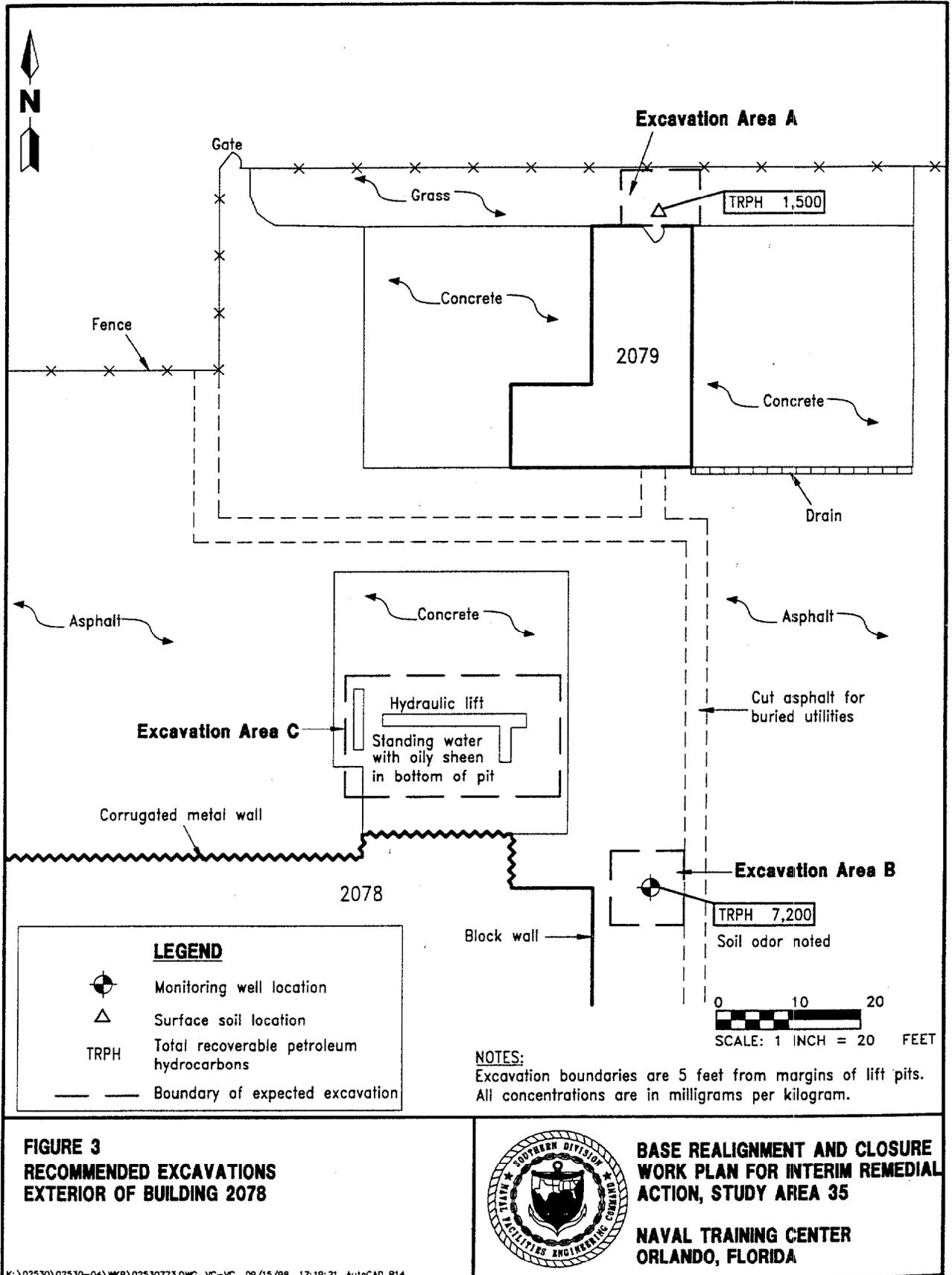


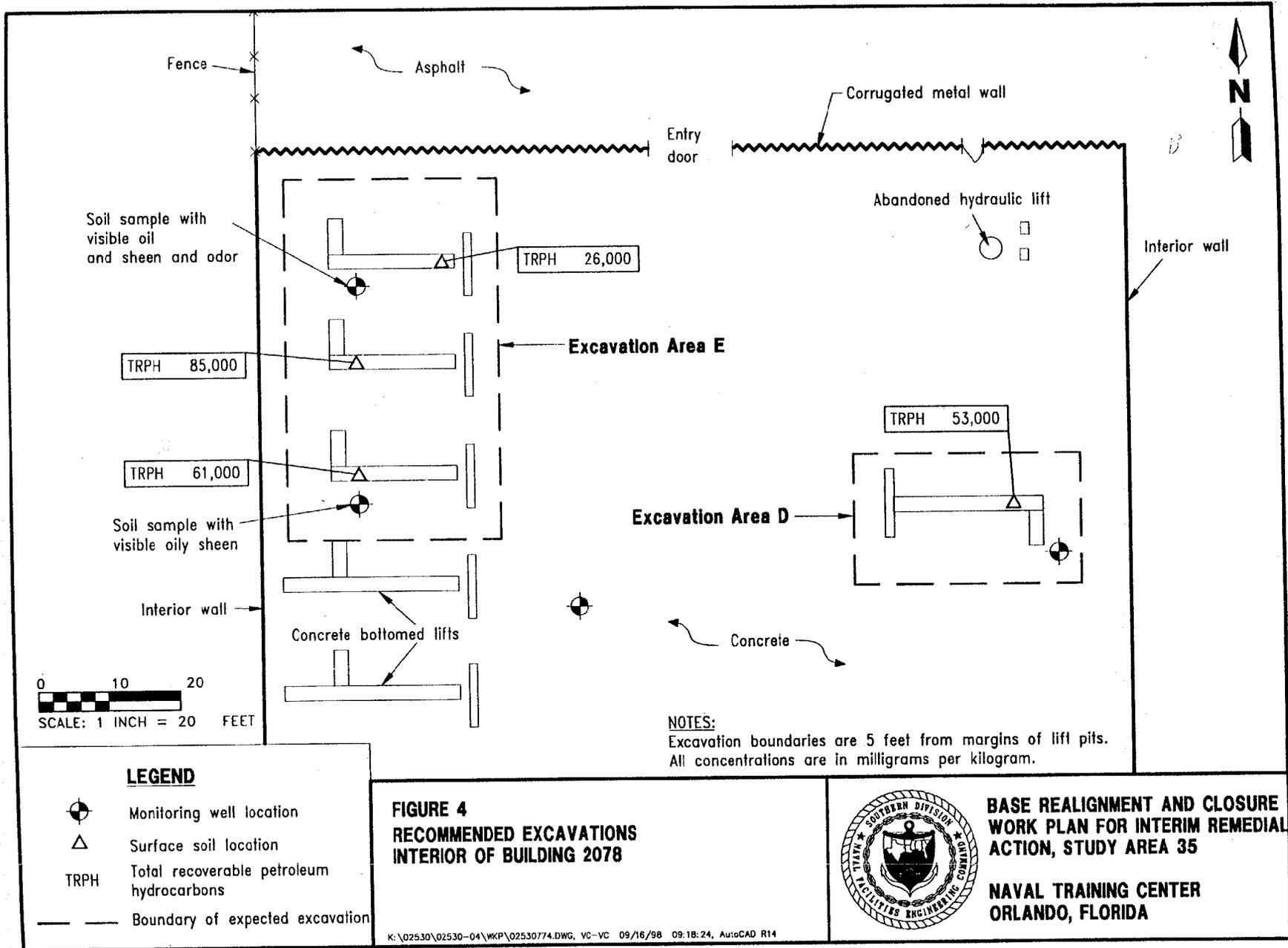
**BASE REALIGNMENT AND CLOSURE
WORK PLAN FOR INTERIM REMEDIAL
ACTION, STUDY AREA 35**

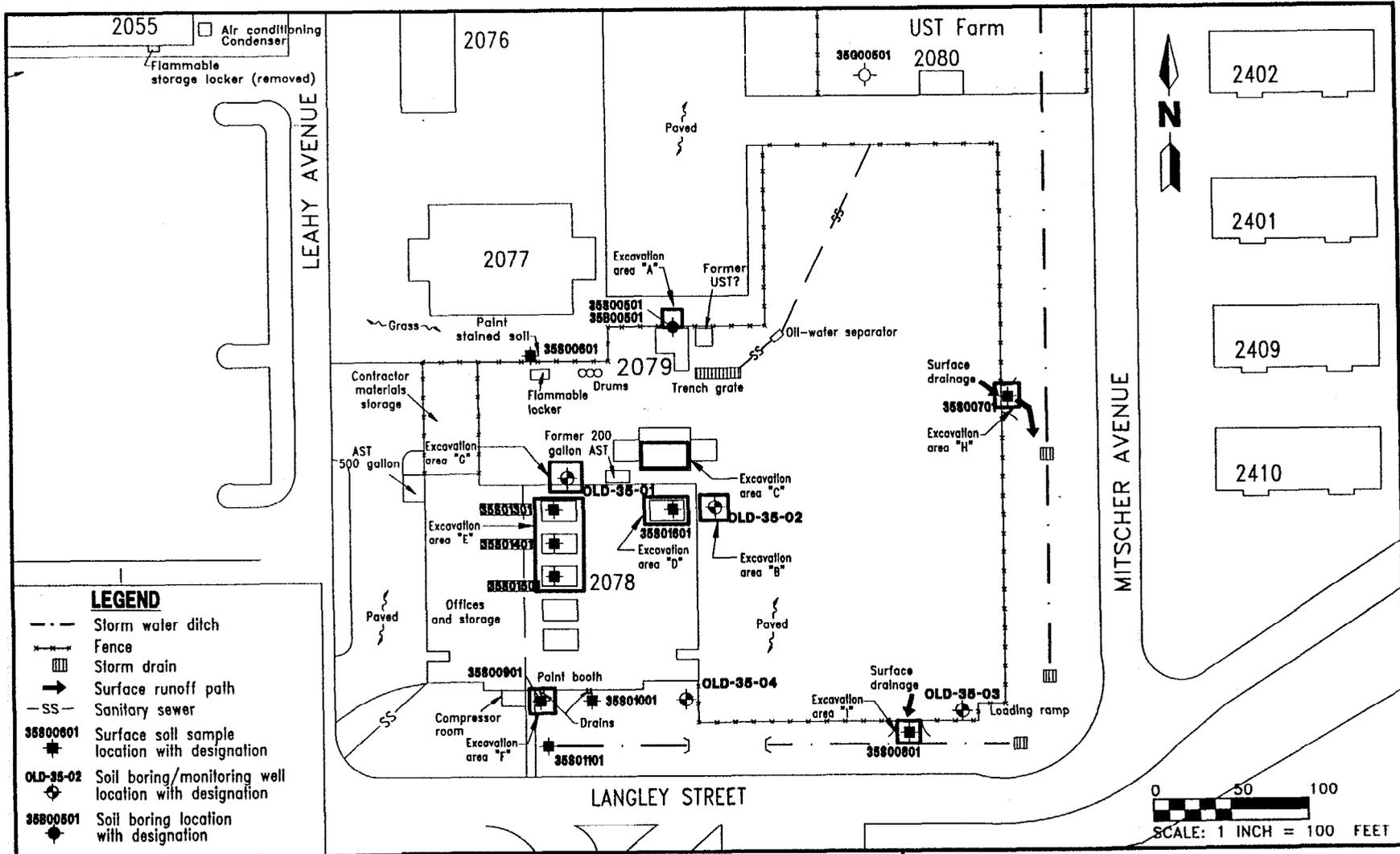
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FINAL DRAFT

**FIGURE 5
RECOMMENDED EXCAVATIONS
STUDY AREA 35**



**BASE REALIGNMENT AND CLOSURE
WORK PLAN FOR INTERIM REMEDIAL
ACTION, STUDY AREA 35**

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INTERIM REMEDIAL ACTION

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SA 37

1. WORK PLAN OBJECTIVE

The objective of this IRA is to excavate and properly dispose of soil contaminated with pesticides at concentrations above residential screening values as listed in the FDEP SCG, dated 30 April 1998, or the RBC Table, USEPA Region III, dated 01 October 1998, whichever specifies the stricter criteria. See Figure 1 for location of SA 37.

2. WORK PLAN IMPLEMENTATION

2.1 SITE Excavate a somewhat irregular shaped area approximately 20' x 20' to a depth of 2'. The limits of the excavation are based on estimates made by Harding Lawson Associates (HLA) in the Base Realignment and Closure (BRAC) Work Plan for IRA for SA 17 dated January 1999. The soils will be excavated until the sampling program indicates with reasonable confidence that the concentrations of any pesticides at the site are less than the levels indicated in Section 1. The site will be backfilled with Florida-certified clean fill, graded to surrounding area and reseeded to control sediment runoff. See Figures 2 and 3 for site and excavation location.

Monitoring well OLD-37-01 shall be abandoned by HLA prior to excavation.

3. SAMPLING

Upon completion of excavation, a confirmation sample will be taken on each sidewall and excavation bottom, testing for pesticides.

4. WASTE MANAGEMENT

In accordance with 40 Code of Federal Regulations (CFR) 261 soils from this site have been characterized as hazardous. These soils will be sent to a permitted Treatment, Storage, and Disposal Facility (TSDF) in accordance with 40 CFR 264.

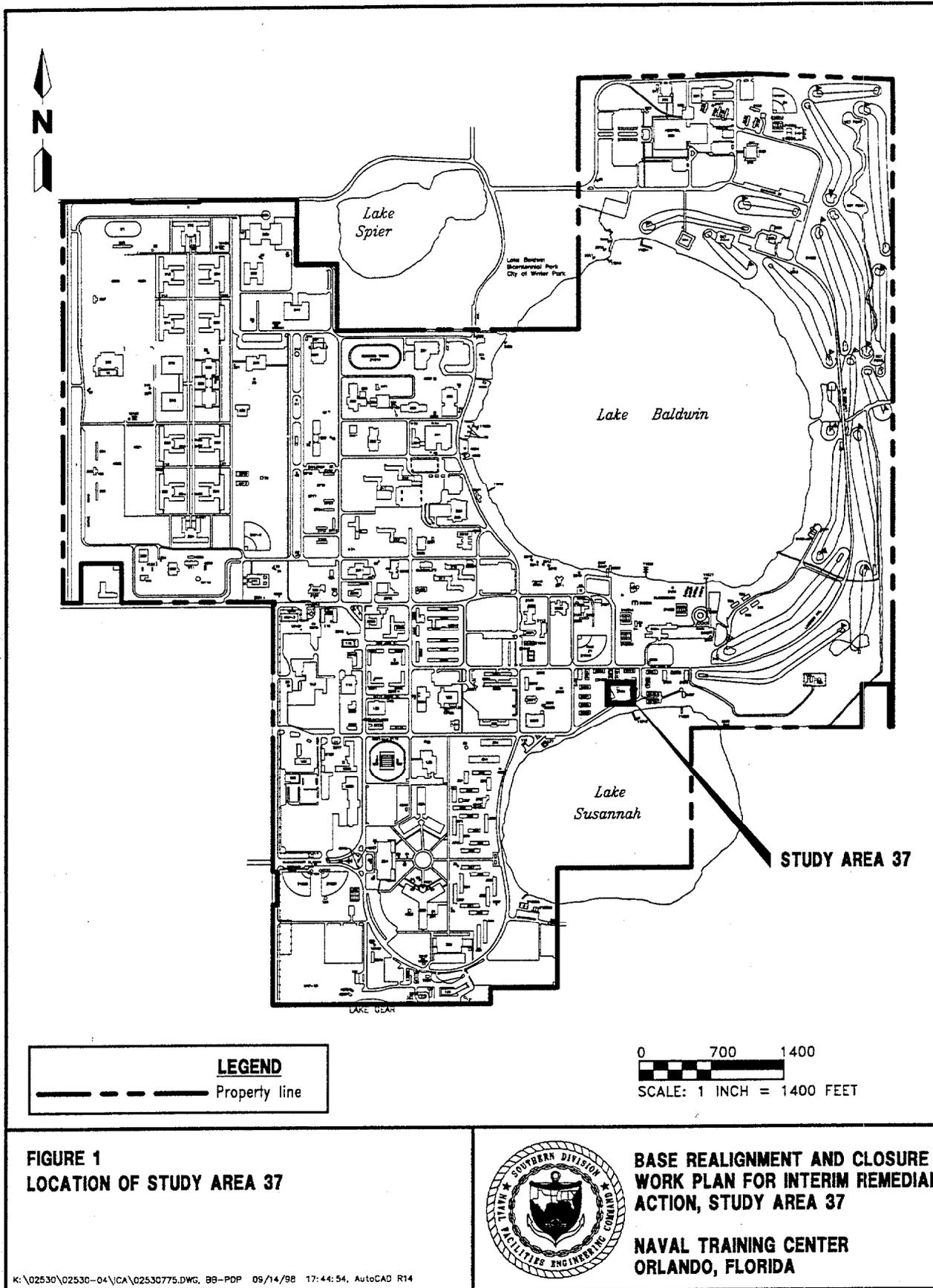
INTERIM REMEDIAL ACTION

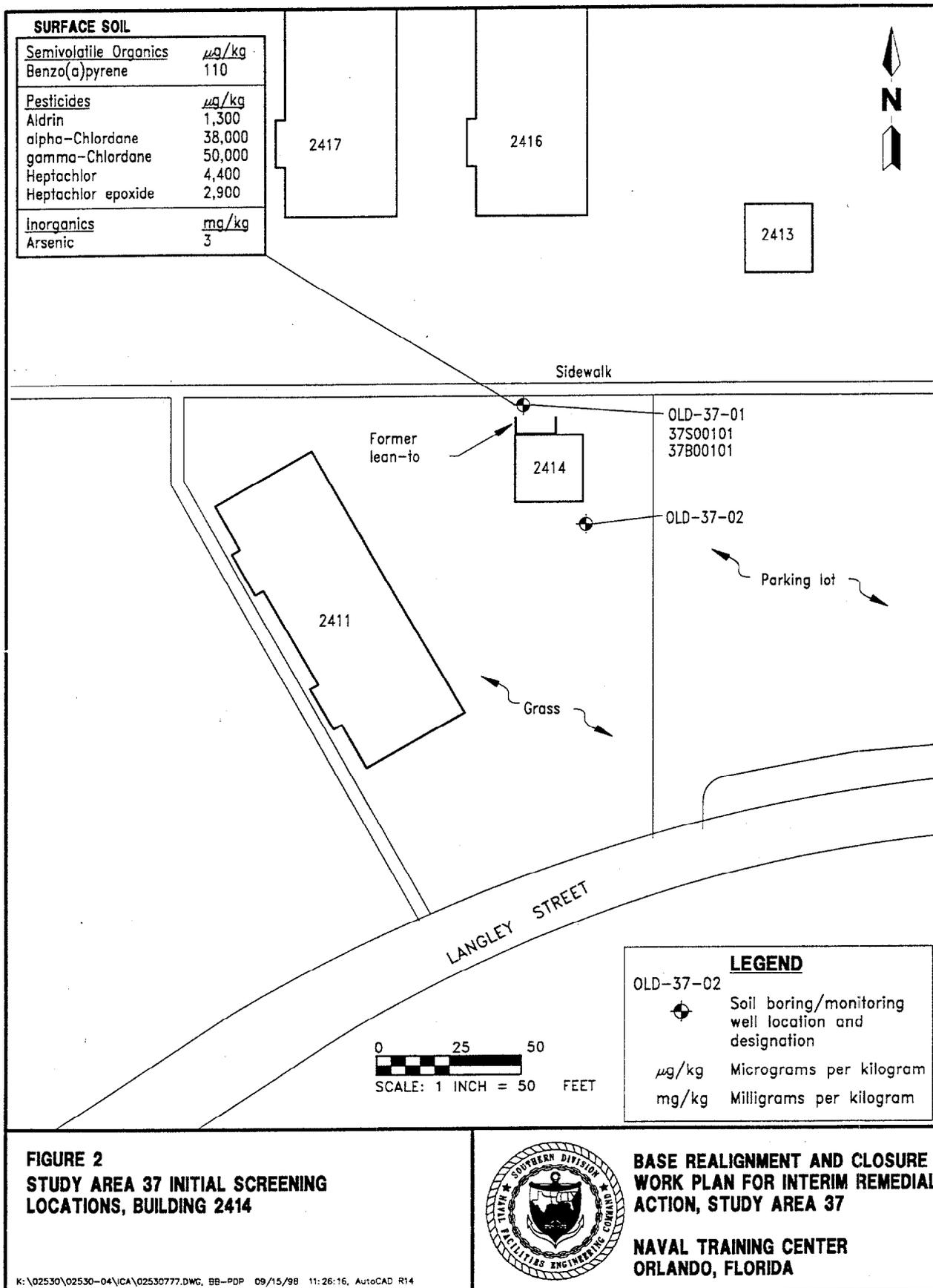
SA17, 18, 23, 35, 37, 40, 42, and OU 3 & 4

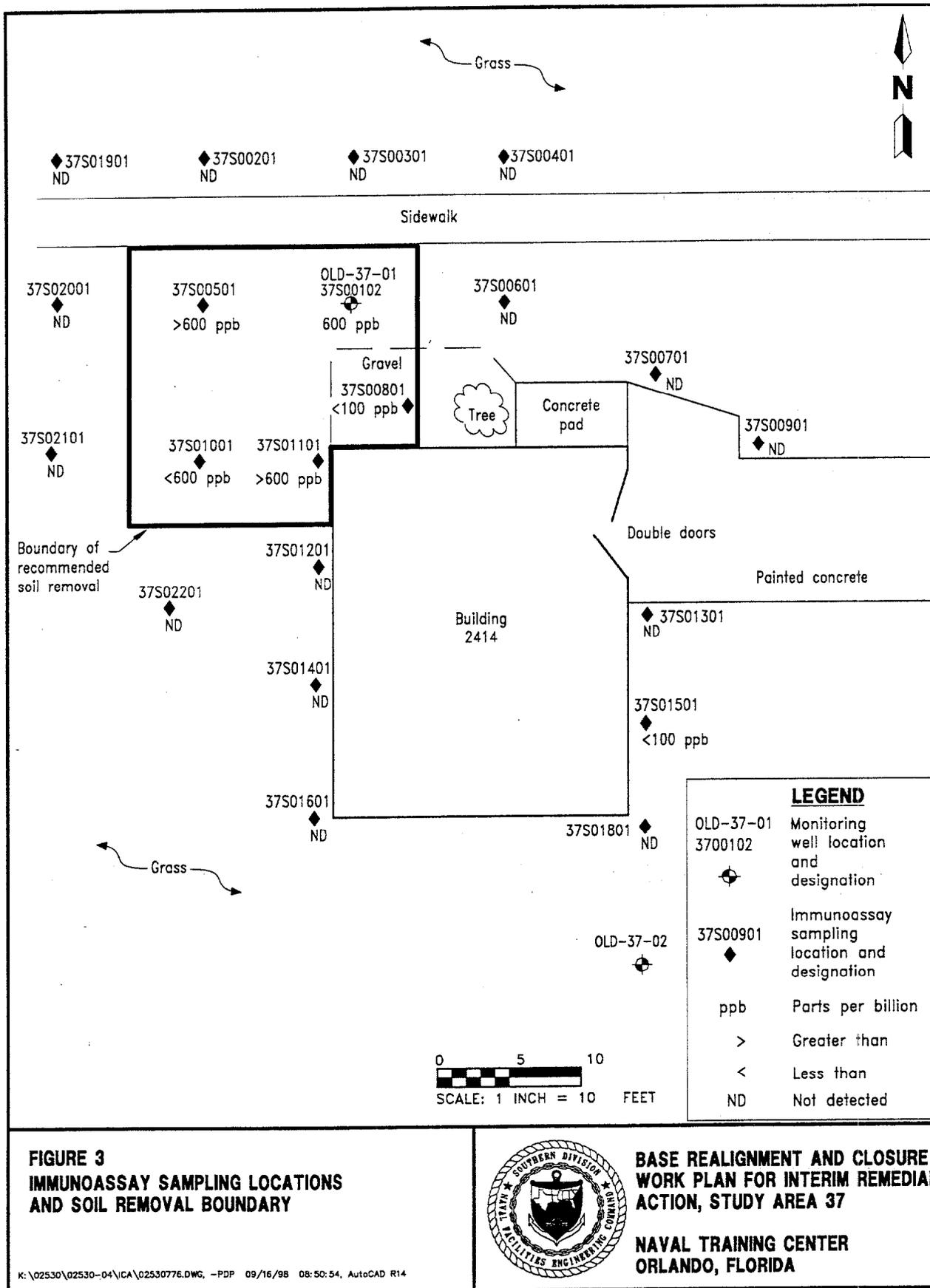
Investigative Derived Waste (IDW) such as plastic sheeting, decontamination water and personal protective equipment generated through excavation, sampling or decontamination evolutions will be disposed of similarly.

5. COMPLETION REPORT

A completion report will be submitted within 14 days after SOUTHDIV agrees the IRAs at the SAs are complete (Review of Data and Walk-through). This report will summarize actions taken and report the following as required: Excavated volumes, nature of wastes generated, waste disposal, sampling evolutions, sample results, site photographs, problems encountered, and any other information that could be helpful in future remediation or reuse of the site.







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SA 40

1. WORK PLAN OBJECTIVE

The objective of this IRA is to excavate and properly dispose of soil contaminated with the PAHs at concentrations greater than 100 micrograms per kilogram and arsenic at concentrations greater than 1 milligram per kilogram. See Figure 1 for location of SA 40.

2. WORK PLAN IMPLEMENTATION

2.1 **SITE** Excavate a somewhat irregular shaped area approximately to a depth of 2' and a 10' x 10' to a depth of 2' at sample point 40S028. The limits of the excavations are based on estimates made by Harding Lawson Associates (HLA) in the Base Realignment and Closure (BRAC) Work Plan for IRA for SA 17 dated January 1999. The soils will be excavated until the sampling program indicates with reasonable confidence that the concentrations of the specified PAHs at the site are less than the levels indicated in Section 1. The site will be backfilled with Florida-certified clean fill, graded to surrounding area and reseeded to control sediment runoff. See Figure 3 for site and excavation locations.

Excavation will not impede within 5' of any monitoring wells, which are not abandoned.

3. SAMPLING

Upon completion of the 300' x 250' excavation, confirmation samples will be taken every 50' along each sidewall and tested for constituents listed in Section 1. Upon completion of excavation of sample point 40S028, confirmation samples will be taken along each sidewall and tested for arsenic.

4. WASTE MANAGEMENT

In accordance with 40 Code of Federal Regulations (CFR) 261 soils from this site have been characterized as non-hazardous and will be sent for reuse at the Operable Unit 2 golf course for cover materials.

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Investigative Derived Waste (IDW) such as plastic sheeting, decontamination water and personal protective equipment generated through excavation, sampling or decontamination evolutions will be disposed of to a permitted Subtitle D landfill or treatment facility.

5. COMPLETION REPORT

A completion report will be submitted within 14 days after SOUTHDIV agrees the IRAs at the SAs are complete (Review of Data and Walk-through). This report will summarize actions taken and report the following as required: Excavated volumes, nature of wastes generated, waste disposal, sampling evolutions, sample results, site photographs, problems encountered, and any other information that could be helpful in future remediation or reuse of the site.

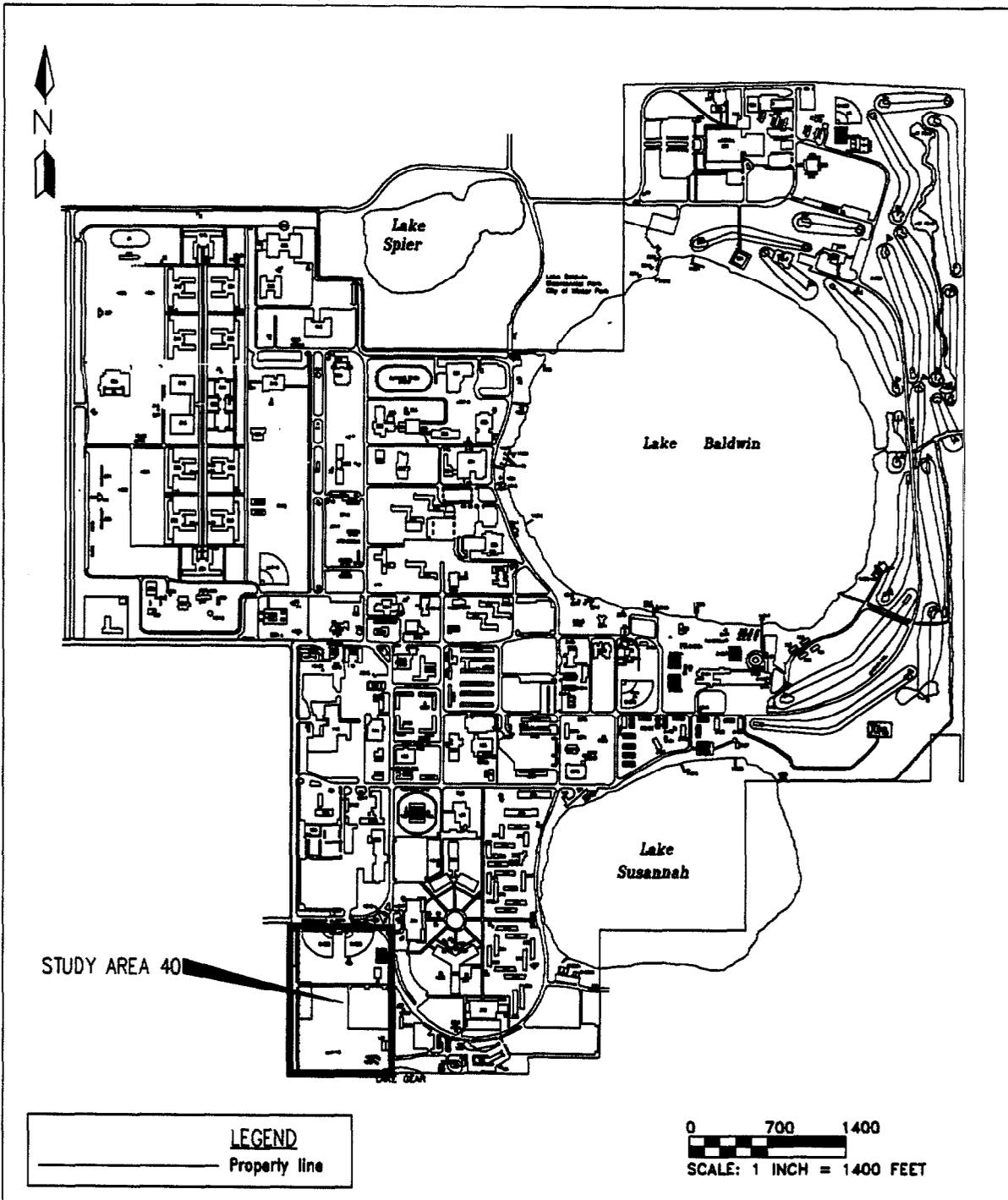


FIGURE 1
LOCATION OF STUDY AREA 40



BASE REALIGNMENT AND CLOSURE
WORK PLAN FOR INTERIM REMEDIAL
ACTION, STUDY AREA 40

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INTERIM REMEDIAL ACTION

SA17, 18, 23, 35, 37, 40, 42, and OU 3 & 4

SA 42

1. WORK PLAN OBJECTIVE

The objective of this IRA is to excavate and properly dispose of soil contaminated with PAHs at concentrations above residential screening values as listed in the FDEP SCG, dated 30 April 1998, or the RBC Table, USEPA Region III, dated 01 October 1998, whichever specifies the stricter criteria. See Figure 1 for location of SA 42.

2. WORK PLAN IMPLEMENTATION

2.1 SA 42 Excavate approximately 5' x 5' to a depth of 1' at sample locations 42S001 and 42S002. The sample locations will be marked/staked by HLA prior to excavation. The limits of the excavation are based on estimates made by HLA in the BRAC Work Plan for IRA for SA 42 dated May 1998. The site will be backfilled with Florida-certified clean fill, graded to surrounding area and reseeded to control sediment runoff. See Figure 2 for site and excavation location.

3. SAMPLING

Upon completion of excavation, a confirmation sample will be taken on each sidewall and tested for PAHs.

4. WASTE MANAGEMENT

In accordance with 40 Code of Federal Regulations (CFR) 261 soils from this site have been characterized as non-hazardous and will be sent to a permitted Subtitle D landfill or treatment facility.

Investigative Derived Waste (IDW) such as plastic sheeting, decontamination water and personal protective equipment generated through excavation, sampling or decontamination evolutions will be disposed of similarly.

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5. COMPLETION REPORT

A completion report will be submitted within 14 days after SOUTHDIV agrees the IRAs at the SAs are complete (Review of Data and Walk-through). This report will summarize actions taken and report the following as required: Excavated volumes, nature of wastes generated, waste disposal, sampling evolutions, sample results, site photographs, problems encountered, and any other information that could be helpful in future remediation or reuse of the site.

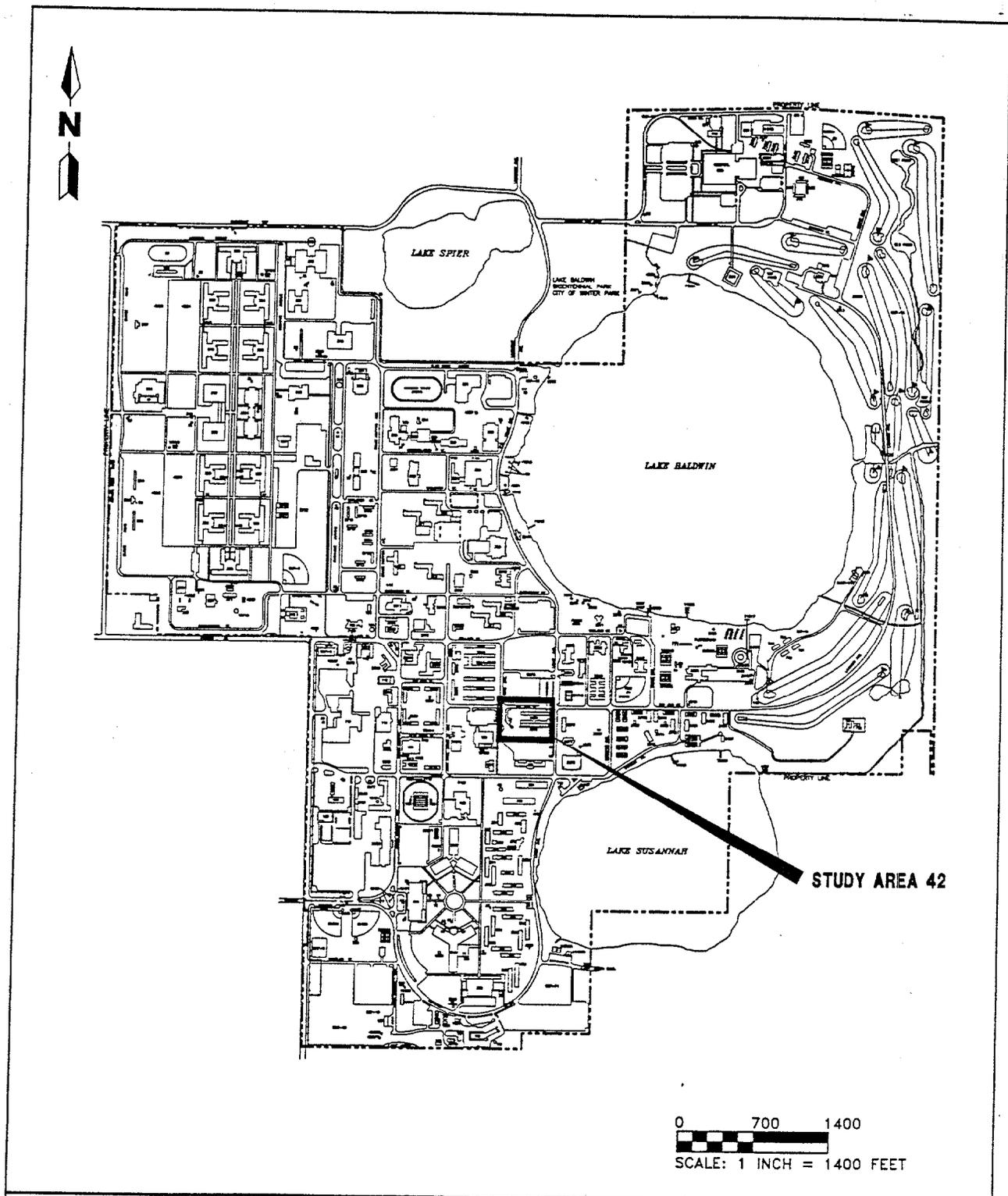
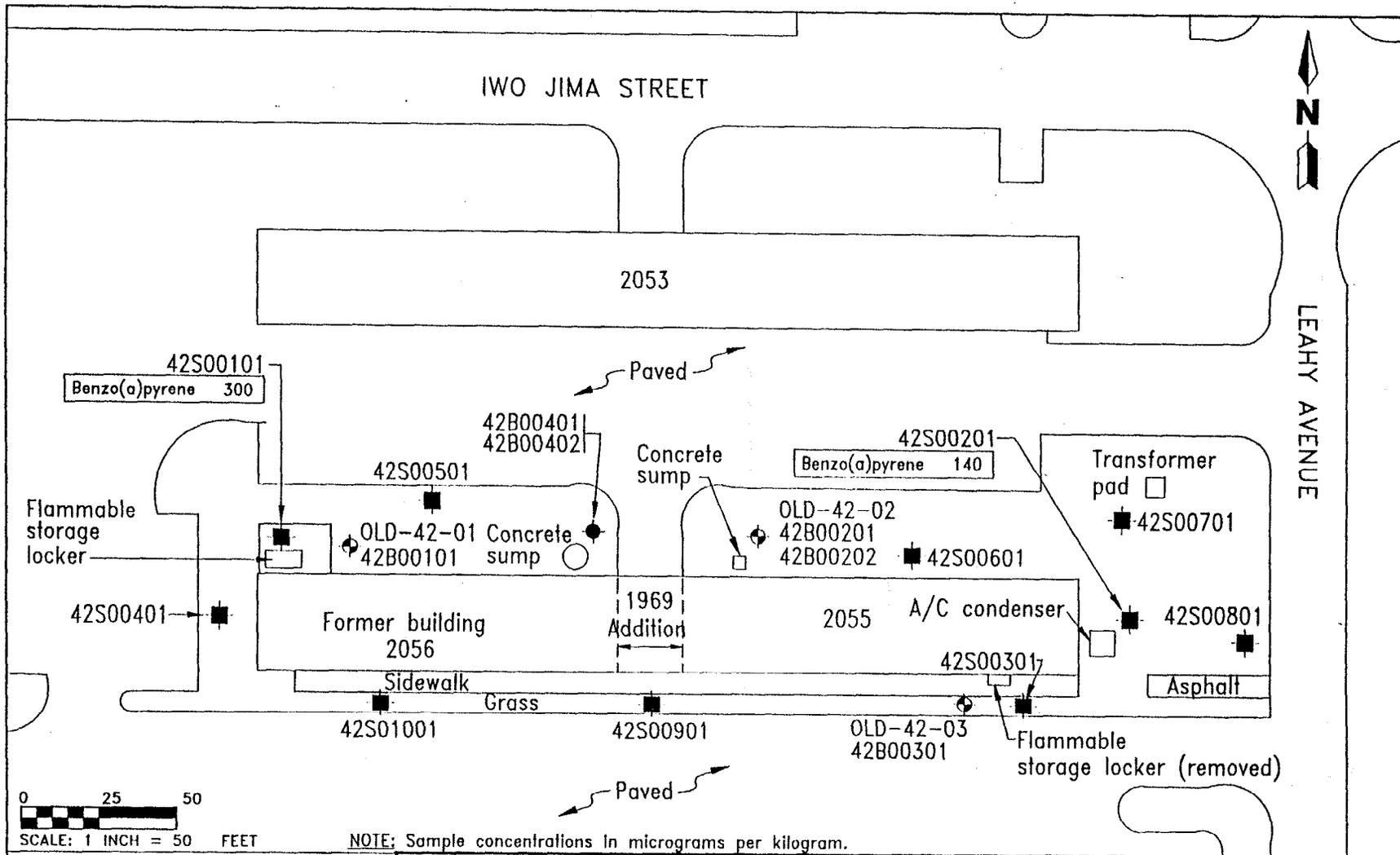


FIGURE 1
LOCATION OF STUDY AREA 42



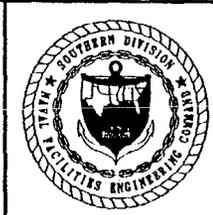
**BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING
REPORT, STUDY AREA 42**

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LEGEND	
42S00101	Surface soil sample location and designation
OLD-42-01	Soil boring location and designation
42B00401	Subsurface soil sample location and designation

FIGURE 2
SURFACE SOIL, SOIL BORING, AND MONITORING WELL LOCATIONS, BUILDING 2055, AIR CONDITIONER AND VENDING MACHINE MAINTENANCE



BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT, STUDY AREA 42

NAVAL TRAINING CENTER ORLANDO, FLORIDA

INTERIM REMEDIAL ACTION

SA17, 18, 23, 35, 37, 40, 42, and OU 3 & 4

OU3 SA 8

1. WORK PLAN OBJECTIVE

The objective of this IRA is to excavate and properly dispose of soil contaminated with arsenic lead and/or pesticides at concentrations above industrial screening values as listed in the FDEP SCG, dated 30 April 1998, or the RBC Table, USEPA Region III, dated 01 October 1998, whichever specifies the stricter criteria. See Figure 2 for site location.

2. WORK PLAN IMPLEMENTATION

2.1 Fence will be removed and recycled.

Metal buildings within the fence line shown on Figure 1 will be removed and recycled.

Concrete and asphalt drive within fence line shown on Figure 1 will be removed and hauled off as construction debris.

2.1.1 SAMPLE POINT 08S044 Excavate an area approximately 5' x 5' to a depth of 2' at sample 08S044. The sample location will be staked/marked by HLA prior to excavation. The limits of the excavation are based on estimates made by HLA in letter to SOUTHDIV for OU3 SA 8 dated 15 September 1998. The soils will be excavated until the sampling program indicates with reasonable confidence that the concentrations of pesticides at this site are less than the levels indicated in Section 1.

2.1.2 SAMPLE POINT 08S031 Excavate an area approximately 5' x 5' to a depth of 2' at sample 08S031. The sample location will be staked/marked by HLA prior to excavation. The limits of the excavation are based on estimates made by Harding Lawson Associates (HLA) in letter to SOUTHDIV for OU3 SA 8 dated 15 September 1998. The soils will be excavated until the sampling program indicates with reasonable confidence that the concentrations of pesticides at this site are less than the levels indicated in Section 1.

INTERIM REMEDIAL ACTION

SA17, 18, 23, 35, 37, 40, 42, and OU 3 & 4

2.1.3 SAMPLE POINT 08S025 Excavate an area approximately 5' x 5' to a depth of 2' at sample 08S025. The sample location will be staked/marked by HLA prior to excavation. The limits of the excavation are based on estimates made by Harding Lawson Associates (HLA) in letter to SOUTHDIV for OU3 SA 8 dated 15 September 1998. The soils will be excavated until the sampling program indicates with reasonable confidence that the concentrations of lead at this site are less than the levels indicated in Section 1.

2.1.4 FENCED AREA OF OU3 SA8 Excavate a somewhat irregular shaped area approximately 210' x 150' to a depth of 2'. Excavation of this area will not start until Sections 2.1.1, 2.1.2, and 2.1.3 are complete. The limits of the excavation are based on estimates made by Harding Lawson Associates (HLA) in letter to SOUTHDIV for OU3 SA 8 dated 15 September 1998. The soils will be excavated until the sampling program indicates with reasonable confidence that the concentrations of arsenic at this site are less than the levels indicated in Section 1. The site will be backfilled with Florida-certified clean fill, graded to surrounding area and reseeded to control sediment runoff. See Figure 1 for site and excavation locations.

3. SAMPLING

3.1.1 SAMPLE POINT 08S044 Upon completion of excavation, confirmation samples will be taken on each sidewall and tested for pesticides.

3.1.2 SAMPLE POINT 08S035 Upon completion of excavation, confirmation samples will be taken on each sidewall and tested for pesticides.

3.1.3 SAMPLE POINT 08S025 Upon completion of excavation, confirmation samples will be taken on each sidewall and tested for lead.

3.1.4 FENCED AREA OU3 SA8 Upon completion of excavation, confirmation samples will be taken every 50' along each sidewall and tested for arsenic.

INTERIM REMEDIAL ACTION

SA17, 18, 23, 35, 37, 40, 42, and OU 3 & 4

4. WASTE MANAGEMENT

4.1.1 SAMPLE POINT 08S044 In accordance with 40 Code of Federal Regulations (CFR) 261 soils from this site have been characterized as hazardous. These soils will be sent to a permitted Treatment, Storage, and Disposal Facility (TSDF) in accordance with 40 CFR 264.

4.1.2 SAMPLE POINT 08S035 In accordance with 40 Code of Federal Regulations (CFR) 261 soils from this site have been characterized as hazardous. These soils will be sent to a permitted Treatment, Storage, and Disposal Facility (TSDF) in accordance with 40 CFR 264.

4.1.3 SAMPLE POINT 08S025 In accordance with 40 Code of Federal Regulations (CFR) 261 soils from this site have been characterized as hazardous. These soils will be sent to a permitted Treatment, Storage, and Disposal Facility (TSDF) in accordance with 40 CFR 264.

Investigative Derived Waste (IDW) such as plastic sheeting, decontamination water and personal protective equipment generated from sample points 08S044, 31, and 25 through excavation, sampling or decontamination evolutions will be disposed of similarly.

4.1.4 FENCED AREA OU3 SA8 In accordance with 40 Code of Federal Regulations (CFR) 261 soils from this site have been characterized as non-hazardous and will be sent to a permitted Subtitle D landfill or treatment facility.

Investigative Derived Waste (IDW) such as plastic sheeting, decontamination water and personal protective equipment generated through excavation, sampling or decontamination evolutions will be disposed of to a permitted Subtitle D landfill or treatment facility.

INTERIM REMEDIAL ACTION

SA17, 18, 23, 35, 37, 40, 42, and OU 3 & 4

5. COMPLETION REPORT

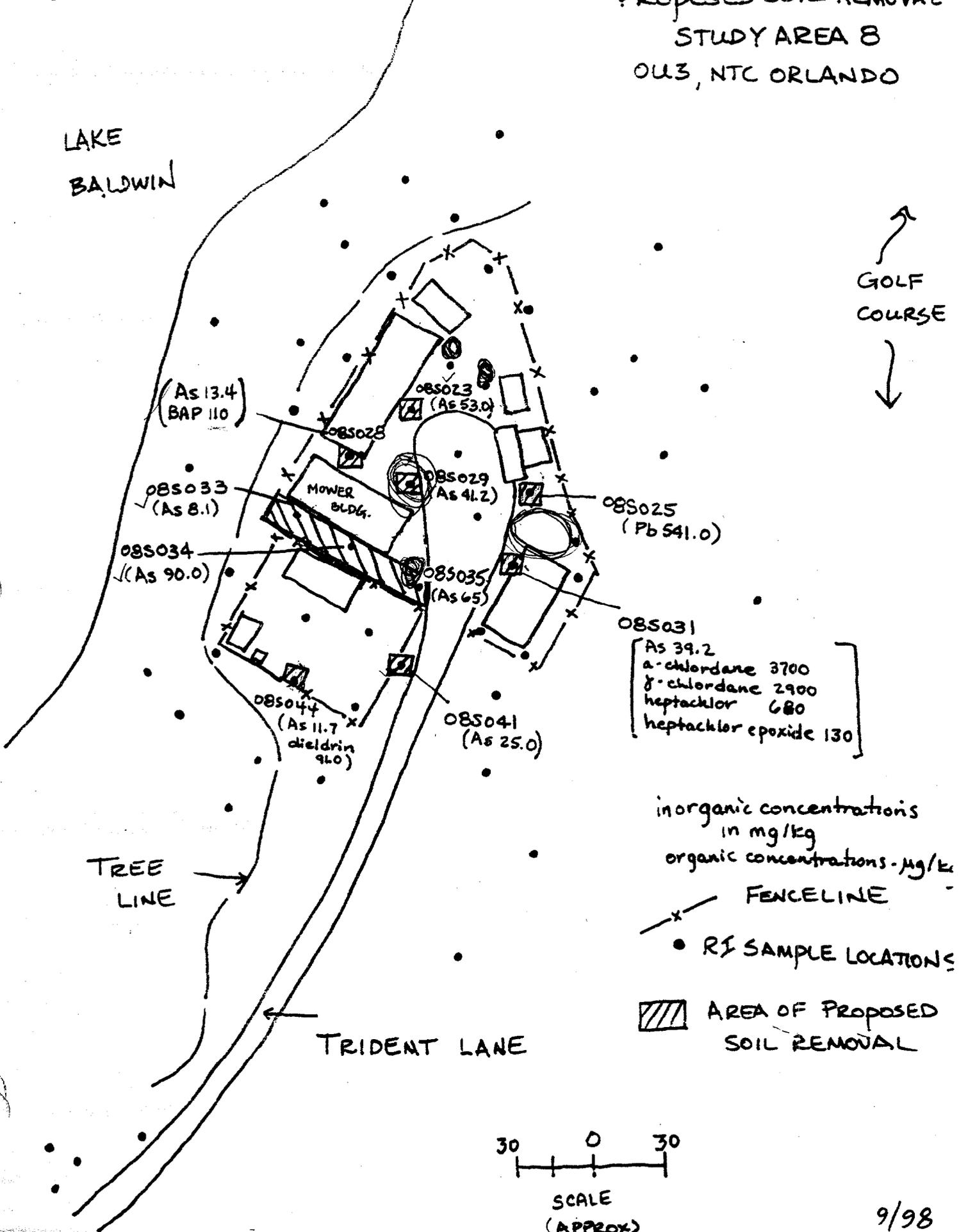
A completion report will be submitted within 14 days after SOUTHDIIV agrees the IRAs at the SAs are complete (Review of Data and Walk-through). This report will summarize actions taken and report the following as required: Excavated volumes, nature of wastes generated, waste disposal, sampling evolutions, sample results, site photographs, problems encountered, and any other information that could be helpful in future remediation or reuse of the site.



ATTACHMENT 2

PROPOSED SOIL REMOVAL
STUDY AREA 8
OU3, NTC ORLANDO

LAKE
BALDWIN



INTERIM REMEDIAL ACTION

SA17, 18, 23, 35, 37, 40, 42, and OU 3 & 4

OU3 SA 9

1. WORK PLAN OBJECTIVE

The objective of this IRA is to excavate and properly dispose of soil contaminated with arsenic and/or pesticides at concentrations above non-residential as listed in the FDEP SCG, dated 30 April 1998, or the RBC Table, USEPA Region III, dated 01 October 1998, whichever specifies the stricter criteria. See Figure 1 for site location

2. WORK PLAN IMPLEMENTATION

SA 9 Excavate an area approximately 180' x 3' to a depth of 2' extending 5' past sample 09S009 and sample 09S032. The sample locations will be staked/marked by HLA prior to excavation. Additionally, any material within the culvert under Trident Lane will be cleaned out and disposed of with excavated soil. The limits of the excavation are based on estimates made by HLA in letter to SOUTHDIV for OU3 SA 9 dated 15 September 1998. The soils will be excavated until the sampling program indicates with reasonable confidence that the concentrations of pesticides at this site are less than the levels indicated in Section 1.

3. SAMPLING

Upon completion of excavation, confirmation samples will be taken every 50' on each sidewall and tested for pesticides and arsenic.

4. WASTE MANAGEMENT

In accordance with 40 Code of Federal Regulations (CFR) 261 soils from this site have been characterized as hazardous. These soils will be sent to a permitted Treatment, Storage, and Disposal Facility (TSDF) in accordance with 40 CFR 264.

Investigative Derived Waste (IDW) such as plastic sheeting, decontamination water and personal protective equipment generated through excavation, sampling or decontamination evolutions will be disposed of similarly.

INTERIM REMEDIAL ACTION

SA17, 18, 23, 35, 37, 40, 42, and OU 3 & 4

5. COMPLETION REPORT

A completion report will be submitted within 14 days after SOUTHDIV agrees the IRAs at the SAs are complete (Review of Data and Walk-through). This report will summarize actions taken and report the following as required: Excavated volumes, nature of wastes generated, waste disposal, sampling evolutions, sample results, site photographs, problems encountered, and any other information that could be helpful in future remediation or reuse of the site.

PROPOSED SOIL REMOVAL
STUDY AREA 9
OU 3, NTC ORLANDO

ATTACHMENT 1

BALDWIN

TREE LINE



09S032
(As 2.9)

a-chlordane 3900 4,4-DDT 3600
γ-chlordane 4200 4,4-DDD 15000
As 4.6

09S005

09S007 [As 20.2 4,4-DDD 4600
a-chlordane 2400 γ-chlordane 2600]

REMOVE ALL SOLID MATERIAL
FROM CULVERT

09S009
(As 14.4)

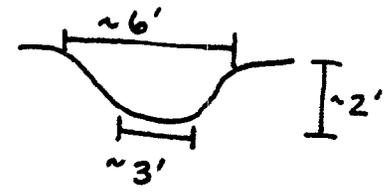
TRIDENT LANE

SOIL
REMOVAL

FORMER
BUILDINGS

DRAINAGE
SWALES

NOTE: APPROXIMATE DIMENSION
OF DRAINAGE SWALE



- SAMPLE LOCATIONS EXCEEDING CRITERIA
- ⊕ RI SAMPLE LOCATIONS BELOW SCREENING CRITERIA



AREA OF PROPOSED
SOIL REMOVAL

Inorganics - mg/kg
Organics - μg/kg

SCALE: 1 INCH = 60 FEET



INTERIM REMEDIAL ACTION

SA17, 18, 23, 35, 37, 40, 42, and OU 3 & 4

OU4

1. WORK PLAN OBJECTIVE

The objective of this IRA is to excavate and properly dispose of soil contaminated with arsenic and PAHs at concentrations above industrial screening values as listed in the FDEP SCG, dated 30 April 1998, or the RBC Table, USEPA Region III, dated 01 October 1998, whichever specifies the stricter criteria. See Figure 1 for site location

2. WORK PLAN IMPLEMENTATION

2.1.1 SAMPLE POINTS U4S006 and U4S015 Excavate an area approximately 10' x 10' to a depth of 2' at samples U4S006 and U4S015. The sample locations will be staked/marked by HLA prior to excavation. The limits of the excavation are based on estimates made by HLA in letter to SOUTHDIV for OU4 dated 21 September 1998. The soils will be excavated until the sampling program indicates with reasonable confidence that the concentrations of PAHs at this site are less than the levels indicated in Section 1.

2.1.2 SAMPLE POINT U4S011 Excavate an area approximately 10' x 10' to a depth of 2' at sample U4S011. The sample location will be staked/marked by HLA prior to excavation. The limits of the excavation are based on estimates made by HLA in letter to SOUTHDIV for OU4 dated 21 September 1998. The soils will be excavated until the sampling program indicates with reasonable confidence that the concentrations of arsenic at this site are less than the levels indicated in Section 1.

3. SAMPLING

3.1.1 SAMPLE POINTS U4S006 and U4S015 Upon completion of excavation, confirmation samples will be taken on each sidewall and tested for PAHs.

3.1.2 SAMPLE POINT U4S011 Upon completion of excavation, confirmation samples will be taken on each sidewall and tested for arsenic.

INTERIM REMEDIAL ACTION

SA17, 18, 23, 35, 37, 40, 42, and OU 3 & 4

4. WASTE MANAGEMENT

In accordance with 40 Code of Federal Regulations (CFR) 261 soils from this site have been characterized as non-hazardous and will be sent to a permitted Subtitle D landfill or treatment facility.

Investigative Derived Waste (IDW) such as plastic sheeting, decontamination water and personal protective equipment generated through excavation, sampling or decontamination evolutions will be disposed of similarly.

5. COMPLETION REPORT

A completion report will be submitted within 14 days after SOUTHDIV agrees the IRAs at the SAs are complete (Review of Data and Walk-through). This report will summarize actions taken and report the following as required: Excavated volumes, nature of wastes generated, waste disposal, sampling evolutions, sample results, site photographs, problems encountered, and any other information that could be helpful in future remediation or reuse of the site.

**CHARLESTON DETACHMENT
ENVIRONMENTAL ENGINEERING AND REMEDIATION
SITE SPECIFIC HEALTH AND SAFETY PLAN**

1. PURPOSE:

This plan provides supplemental site-specific information, and is to be used in conjunction with the Project Operations Plan For Site Investigations and Remedial Investigations dated August 1997, and the Detachment Comprehensive Health and Safety Plan (CHASP). The Project Operations Plan gives requirements and actions to accomplish the site investigations and remedial investigations for closure of Naval Training Center (NTC), Orlando, Florida.

The CHASP gives Detachment requirements including exclusion zones and decontamination, control of work area access, weather extremes, heat and cold stress, biological hazards, electrical hazards, general safe work procedures, emergency procedures, medical emergencies, and chain of command.

2. SITE DESCRIPTION, HAZARDS, and BACKGROUND:

This is excavation of IRA Soil Sites at the Naval Training Center, Orlando, Florida. The sizes, in feet, and background of these areas are:

a. S/A 17 - 300 x 120 x 2. This is a former army motor pool and drum storage area. This site contains:

-Semi volatile organics, e.g. benzo(a)pyrene, and other coal tar pitch volatiles. Semi volatile organics are products of distillation of coal. NIOSH has recommended that the PEL for these products be 0.1 mg/m³ and that they be regulated as carcinogens. Repeated and intimate exposure such as by coke oven workers, especially over longer time periods (five or more years) has shown an increased risk of cancer of the lungs, skin, bladder, and kidneys.

- Chlorinated hydrocarbons have been detected in the shallow aquifer. The depth of this excavation should not disturb this aquifer. Specific effects of chlorinated hydrocarbons vary widely, but common effects are depressant effects on the central nervous system and dermatitis, and injury to the liver.

b. S/A 18 - 20 x 20 x 2 deep. A parking lot area that stored paint, solvents, lawn care supplies, and trailers. The site contains:

-Semivolatile organics, as at S/A 17.

-Dieldrin. - Pesticides such as dieldrin have chronic (long-term) health effects that may occur at some time after exposure. Dieldrin is considered a human carcinogen. Lower exposures cause nausea, headaches, stomach pain and vomiting. The OSHA PEL is 0.25 mg/m³. Routes of entry are inhalation, skin contact and ingestion.

c. S/A 23 - 5 x 5 x 2 deep. The outfall of a drain pipe. This site contains

- Semivolatile organics, see S/A 17.

- Arsenic has an OSHA PEL of 0.01 mg/m³ with routes of entry being inhalation of dust, eye and skin contact, and ingestion. The symptoms of overexposure are ulceration of the nasal septum, dermatitis, GI disturbances, and peripheral neuropathy. The target organs are the liver, kidneys, skin, lungs, and lymphatic system. Arsenic is a suspected human carcinogen.

- Beryllium is a carcinogen and has a Permissible Exposure Limit of 0.002 mg/m³. It is a hard brittle, gray-white solid. Long-term exposure symptoms are low weight, weakness, chest pain and clubbing of fingers, eye irritation, and dermatitis.

d. S/A 35 Area A - 8 x 10 x 2 deep. A grassy area behind building 2079, Used for storage of vehicle supplies.
Area B - 10 x 10 x 2 deep. Parking lot, bldg. 2078, vehicle maintenance.
Area C - 30 x 20 x 10 deep. Exterior lift pit, Bldg. 2078.
Area D - 32 x 20 x 10 deep. An interior lift pit, Bldg. 2078.
Area E - 50 x 30 x 10 deep. Three interior lift pits in Bldg. 2078.
Areas F and G - 5 x 5 x 2 each. Parking lot of Bldg. 2078.
Areas H and I - 10 x 10 x 2 each. Parking lot of Building 2078.

These sites contain:

- Arsenic, see S/A 17, above.

- Petroleum hydrocarbons. Some petroleum hydrocarbons have been shown to produce skin cancer in experimental animals upon repeated skin application over the lifetime of the animals. Interim results from an ongoing mouse skin painting

study have reported tumor production. Petroleum hydrocarbons of similar composition and boiling range have been shown to produce kidney damage and tumors in male rats following prolonged inhalation exposures. The primary route of entry is inhalation. Both are irritating to the eyes. The recommended Permissible Exposure Limit is 100 PPM. A secondary health effect is dermatitis, a defatting of the skin, which can result from continued skin contact. Some individuals develop hypersensitivity. Quickest entry into the body of petroleum products is by ingestion, therefore do not siphon fuel by mouth.

e. S/A 37 - 20 x 20 x 2 deep. A former storage building for the BOQ. Site contains:

Pesticides, such as chlordane, aldrin, and heptachlor have chronic (long-term) health effects that may occur at some time after exposure. Chlordane is considered a human carcinogen. Lower exposures cause nausea, headaches, stomach pain and vomiting. The OSHA PEL for chlordane is 0.50 mg/m³. Aldrin is a colorless to dark brown crystalline solid and is a NIOSH carcinogen with a mild chemical odor. The TWA is 0.25 mg/m³. Heptachlor is a white to tan crystal solid with a camphor like odor. It is a NIOSH carcinogen.

Many pesticides enter the body by inhalation, and also by skin contact. Chlordane, aldrin, dieldrin, and heptachlor are efficiently absorbed across the skin. While most of the organochlorine pesticides, such as those above, and DDT are not highly volatile, dust/dirt particles, which are trapped in the body and then swallowed, may lead to significant gastrointestinal absorption. Symptoms of overexposure are headaches, dizziness, nausea, vomiting, incoordination, and mental confusion.

Pesticides such as DDD, DDE, and DDT are bound tightly to soil. They may also be present in the roots of plants.

f. S/A 40 - 300 x 250 x 2 deep, irregularly shaped. Former bottle landfill and Baseball field. Site contains:

- Semivolatile organics. See S/A 17.

- Arsenic. See S/A 23.

g. OU 3 S/A 8 - 210 x 150 x 2 deep. Former golf course maintenance equipment area. Site contains:

- Lead is readily absorbed and distributed in the body. Repeated exposure can cause a gradual accumulation of lead, mainly in the bones. Symptoms of chronic overexposure include weakness, headaches, and abdominal pain. Reproductive effects in both men and women can be caused. Lead is not a carcinogen. The permissible exposure limit for airborne lead is 0.05 mg/m³ of air.

- Pesticides. See S/A 37.

- Arsenic. See S/A 23.

h. OU 3 S/A 9 - 190 x 3 x 2 deep. A drainage ditch from the golf course. Site contains:

- Pesticides. See S/A 37.

- Arsenic. See S/A 23.

i. OU 4 (sample 601) - 10 x 10 x 2 deep. Outfall of a culvert. Site contains:

- PCBs. Aroclor 1254 is a polychlorinated biphenyl's (PCB). PCBs are toxic chemicals belonging to the chlorinated hydrocarbon group and are of concern due to their persistence in the environment and the tendency to accumulate in the food chain. They range in form from oily liquids to hard solids and transparent resins. The health effect for workers who have a long history of prolonged skin contact is chloracne, a skin eruption disorder. Studies have shown the potential for problems in the liver and pancreas. PCBs are fat soluble and accumulate in fat cells. In normal temperatures, PCBs do not evaporate into the air. A major route of entry is ingestion by improper hand to mouth work practices, and spread of PCBs outside the area of contamination.

- Semivolatile organics. See S/A 17.

j. OU 4 (sample 1501) - 10 x 10 x 2. Paved storage area of a former DRMO. Site contains:

- Semivolatile organics. See S/A 17.

k. OU 4 (sample 1101) - 10 x 10 x 2. Parking lot of a former laundry. Site contains:

- Arsenic. See S/A 23.

3. WORK SCOPE BRIEF (REFER TO THE WORK DOCUMENT FOR FULL DETAILS):

Remove soil to the specified depth in each of the areas. Expected work duration is 35 days for eight people.

4. HAZARDS and RISK ANALYSIS:

The topography of the area is level and open air. Confined spaces exist on this site, such as utility manholes and vaults. The excavations created will become confined spaces when they exceed four feet in depth. They will not be entered in this work and will require gas testing and an entry permit if entry is needed.

Also, for excavations over 5 feet in depth where personnel entry is required, a "Competent Person" for excavation oversight must be designated, in writing (e.g. by making a log entry). This person will have been trained in the requirements of 29 CFR 1926.650/651/652 (The Construction Excavation Standard). This duty may be rotated among trained personnel, but only one person at a time is designated the competent person. Duties include:

- Identifying existing and predictable employee excavation hazards, and being authorized to take prompt corrective measures to eliminate those hazards.

-Ensuring compliance with the excavation standard. Detachment policy is that all soils are to be classified as Type "C" and sloping/shoring/trenchboxes will be used where needed.

-Daily inspections prior to work or entry, and after rainstorms.

-Being present at the site whenever employees enter an excavation over 5 feet deep.

-Answering questions by regulators about compliance with the excavation standard during regulator inspections.

If excavation work encounters ground water avoid contact with the ground water

Safety hazards include:

- Insect bites
- Heat stress

- personal injury risks from heavy equipment operation
- the dangers of underground and above ground electrical wiring
- excavation and trenching hazards, if deeper than planned excavations are done

The risk for chronic exposure is very low due to the use of mechanical equipment, and the relatively short work duration. Risk of acute exposure is also minimal due to the low levels and the fact that this is an open air area.

The primary health hazard is inhalation of dust generated by dirt removal. The sites contain low levels of organic chemicals, pesticides, petroleum hydrocarbons, and heavy metals. Dust particles created during the work may contain these chemicals.

5. PERSONAL PROTECTIVE EQUIPMENT:

General work: Minimum PPE for any work is hard hat, safety shoes/boots, hearing protection, and safety glasses. These choices are based on a personal protective equipment assessment of the hazards normally present at construction sites such as impact, compression/crushing, material handling, flying objects, and noise.

Work with or near excavation soil: If PID readings in the breathing zone in excess of 5 PID units are obtained for greater than 10 minutes (and can not be eliminated by use of ventilation), or if dust is present (and can not be eliminated by working upwind or misting with water), use a minimum of a half-mask respirator with an organic vapor and HEPA filter. Change the organic vapor respirator cartridge after every day of use. Note: For work anywhere in S/A 18 and S/A 37, and also in the two pesticide areas of OU 3, S/A 8 and in all of S/A 9, use of a organic vapor and HEPA cartridge respirator is required. If PID units of over 500 ppm continuous are encountered, evacuate and reassess the conditions.

Wear nitrile gloves, coveralls (either tyvek or cloth) and shoe covers, boots or booties when exposed to soil being excavated. If splashing is possible, wear a face shield or a full-face respirator. Avoid contact with ground water. Additional care in work practices and area control and equipment decon should be exercised at the Site OU 4, sample location 601 due to the need to avoid any spread of PCBs.

Hearing protection is required when operating noise hazardous equipment.

6. SPECIAL PERSONNEL TRAINING QUALIFICATIONS:

Hazwoper training (40 hour initial with 8 hour annual refresher), and depending on the planned work: respiratory protection training with fit test, fall protection, excavation standard, forklift operation, lockout/tagout, and lead/heavy metals worker training. Crane and heavy equipment operators must be licensed for the equipment being operated.

These requirements are applicable to visitors also. Visitors must certify by their signature in the work logbook that they meet the required training.

7. OCCUPATIONAL SAFETY AND HEALTH PRECAUTIONS:

Excavation sites may become a tripping/fall hazard (especially at night), and may also be an attractive nuisance for children. For both reasons they should be secured (e.g. by barrier fencing) at night or when not being worked, and when work is complete, filled or have the edges graded.

Use of bug repellent and sun tan oil is suggested.

Prior to the start of work, the area must be checked for the presence of above or below ground electrical, sewage, telephone or water lines if they will be endangered by the planned work. They must be marked and secured by lockout/tagout if they will be endangered by work operations. Inspect the overhead area for the presence of overhead power lines or poles that may be undermined by digging.

During excavation, be alert to the discovery of containers or drums, utility lines especially power or sewer, and changes in the color or smell of the soil which could indicate past spills. Stop work, monitor with the PID, and evaluate if unknown conditions are encountered.

If desirable to ventilate, use an exhaust blower to ventilate the excavation after reaching a depth of about three feet. Exhaust downwind and away from personnel and occupied buildings. Ensure generators and other engine equipment used to power the blower do not discharge exhaust gas into the excavation. In excavations, over 3 feet deep, provide exhaust ventilation from the bottom of the excavation.

A good work practice is to stay upwind of dust produced. If dust is evident during work, use a light water mist to eliminate the dust or move the equipment upwind.

If protective clothing and equipment are not removed at the worksite for cleaning or disposal, provide a changing area with separate lockers for protective clothing/equipment and for street clothing to prevent cross contamination.

Ensure facilities for washing face and hands are available to employees. Employees must wash their hands and face prior to eating or smoking and at the end of the work shift before going home. PPE worn during the work shift may not be worn home.

Monitoring will be performed for organic vapors using a PE Photovac PID Model 2020, or equivalent with a 10.6 eV tube. Combustible gas indicators, indicator tubes and passive dosimetry badges may also be used.

Use the emergency numbers and routes of Attachment A. Notify Detachment supervision of all injuries or symptoms of health effects.

8. MATERIAL SAFETY DATA SHEETS: A complete set is maintained by the Detachment, and MSDSs for materials used at the site will be on site.

9. MEDICAL SURVEILLANCE: Hazardous waste worker (B27), Hearing Conservation (C2), lead (B4), and for respirator wearers, (A10).

10. TRAINING AND MEDICAL RECORDS:

Training and medical documentation for on site workers will be placed in the job folder.

ATTACHMENT A

EMERGENCY TELEPHONE NUMBERS

Environmental Detachment Charleston, (Bobby Dearhart, Manager)	843 743 2821 x131
USEPA Environmental Response Team	800 642 9999
Fire/Police/Ambulance (Dispatcher)	911
Poison Control Center	1 800 292 6678

HOSPITAL INFORMATION

Princeton Hospital 1800 Mercy Drive general info	407 295 5151
Emergency Room	407 298 4122

ROUTE TO HOSPITAL - See attached map:

Exit site on Bennett Rd to Maquire Drive and turn right onto Colonial Dr (Hwy 50). Continue west on Colonial Dr. past I-4 and Fla. Rd. 441 to Mercy Drive intersection (Mobil Station and Car dealership on this corner). Turn right onto Mercy Dr. Go about 1 mile to the Hospital at 1800 Mercy Dr.

Princeton Hospital
1800 Mercy Drive
Emergency Room
(407) 298-4122
Main phone
(407) 295-5151

Maitland
NAVAL TRAINING CENTER

Maquire Drive

Orlando Colonial Drive
(Hwy 50)

Exit to Hwy 50 west

Take Sandlake Road
to I-4 east

Jetport Road

Daetwyler Road

McCOY ANNEX

004416014