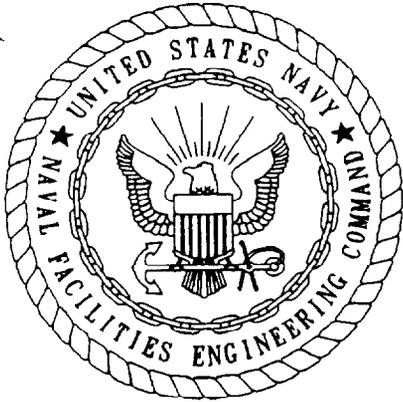


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BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT FOR
STUDY AREA 43 NTC ORLANDO FL
12/1/1996
ABB ENVIRONMENTAL



**BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING REPORT**

STUDY AREA 43

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

**UNIT IDENTIFICATION CODE: N65928
CONTRACT NO.: N62467-89-D-0317/107**

DECEMBER 1996



**SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA
29419-9010**

**BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING REPORT**

STUDY AREA 43

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

Unit Identification Code: N65928

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Prepared by:

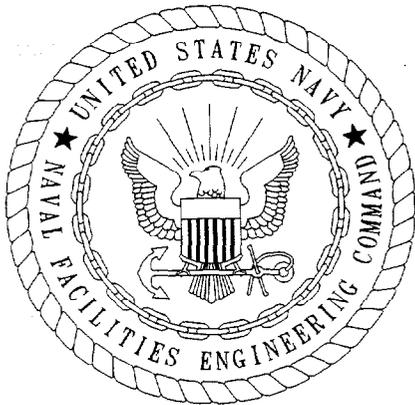
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2590 Executive Center Circle, East
Tallahassee, Florida 32301**

Prepared for:

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Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29418**

Barbara Nwokike, Code 1873, Engineer-in-Charge

December 1996



CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/107 are complete and accurate and comply with all requirements of this contract.

DATE: December 18, 1996

NAME AND TITLE OF CERTIFYING OFFICIAL: John Kaiser
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Richard Allen
Project Technical Lead

(DFAR 252.227-7036)

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Naval Training Center
Orlando, Florida

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
AEC	Area of Environmental Concern
bls	below land surface
CLP	Contract Laboratory program
DQO	data quality objective
FOST	Finding of Suitability to Transfer
J	estimated value
mg/l	milligrams per liter
OPT	Orlando Partnering Team
RTC	Recruit Training Command
SA	site assessment
SCG	soil cleanup goal
SSP	Site Screening Plan
TCLP	toxicity characteristic leachate procedure
USEPA	U.S. Environmental Protection Agency

1.0 STUDY AREA (SA) 43, FORMER SKEET RANGE AT NORTH GRINDER LANDFILL; INDOOR RIFLE AND PISTOL RANGES, BUILDING 229, MAIN BASE; AND BUILDING 601, HERNDON ANNEX, BACKGROUND AND CONDITIONS

1.1 SA 43, BACKGROUND AND CONDITIONS. This report presents the results and recommendations of site screening for SA 43. The three noncontiguous sites comprising SA 43 are located within the Recruit Training Command (RTC) at Main Base and at Herndon Annex (Figure 1) in the Naval Training Center in Orlando, Florida. The SAs were identified during additional records reviews as areas of potential concern that required site screening. Additional information is included in the Site Screening Plan (SSP) for Groups I through V Study Areas and Miscellaneous Additional Sites, Addendum 1 (ABB Environmental Services, Inc. [ABB-ES], 1995a).

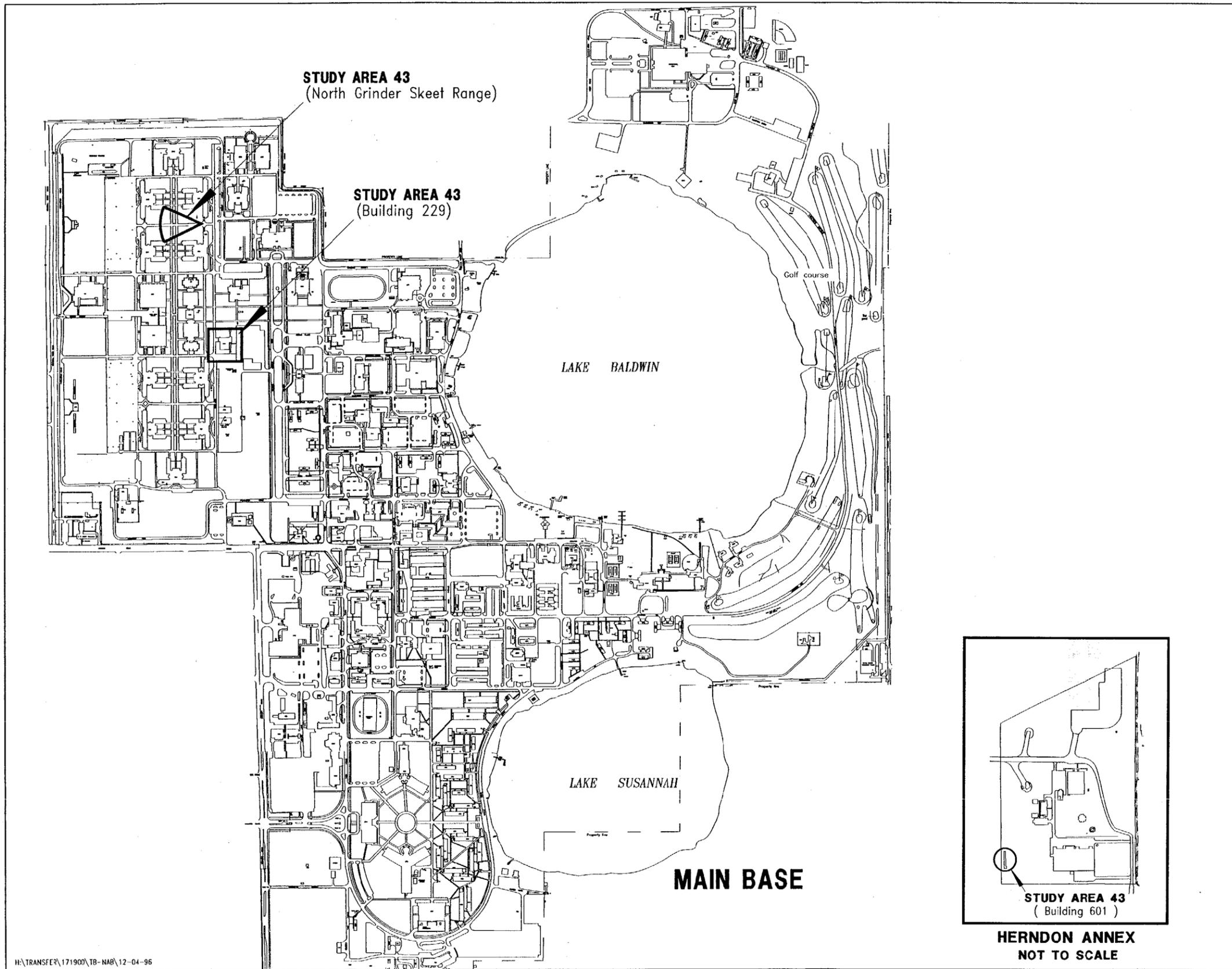
The surface soil around the facilities comprising SA 43 may have lead contamination as a result of discharge from firearms. These locations include the former North Grinder Landfill skeet range (Main Base), the indoor rifle and pistol range at Building 229 (Main Base), and the indoor rifle and pistol range at Building 601 (Herndon Annex).

Sample locations were selected following an exterior inspection to identify areas of potential lead dust accumulation due to firing range activities. Surface soil samples were submitted for laboratory analysis of total lead concentrations by the inductively coupled plasma technique (United States Environmental Protection Agency [USEPA] Method 3050/6010). This method has a detection limit of 10 milligrams per kilogram (mg/kg), versus the State of Florida soil cleanup goal (SCG) of 500 mg/kg.

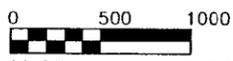
1.1.1 SA 43, Skeet Range at North Grinder Landfill The former North Grinder Landfill skeet range is located in the vicinity of Buildings 212, 214, 232, and 234 in the RTC at Main Base (Figure 2). Little is known about the actual construction of or the activities conducted at the range. This site was identified from review of an Air Force engineering drawing dated March 30, 1964, and entitled "Sanitary Sewerage System and Treatment Plan," Drawing No. AF0 (614) -3232. Because this location was identified during review of Air Force Records, it was designated an "Area of Environmental Concern" (AEC) and assigned an AEC designation of AEC-MB-17 (ABB-ES, 1995b).

The drawing indicates that the shooting platform would have been located between Buildings 232 and 234 and that the downrange area extended approximately 300 feet west from the platform. Construction activities for Buildings 212, 214, 232, and 234 were conducted in 1967 and 1968 and likely disturbed much of the surface soil in the downrange area. The environmental concern at this area is the potential for lead contamination in surface soil in the downrange area.

1.1.2 SA 43, Indoor Rifle and Pistol Range, Building 229, Main Base Building 229 is located in the RTC, in the northwest portion of Main Base (Figure 3). It was constructed in 1971 and was used as an indoor instructional range. When active, 80 pounds of lead alloy each month were collected downrange. Particulate filters were added to the ventilation system within the building, at some point after 1971, to filter lead from the exhaust air. Spent filters were disposed of by a waste disposal contractor. The environmental concern at this area is the



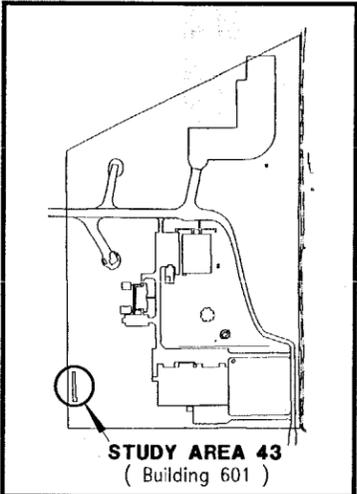




SCALE: 1 INCH = 1000 FEET

SOURCE: ABB-ES 1994b.

FIGURE 1
LOCATIONS OF SITES COMPRISING
STUDY AREA 43

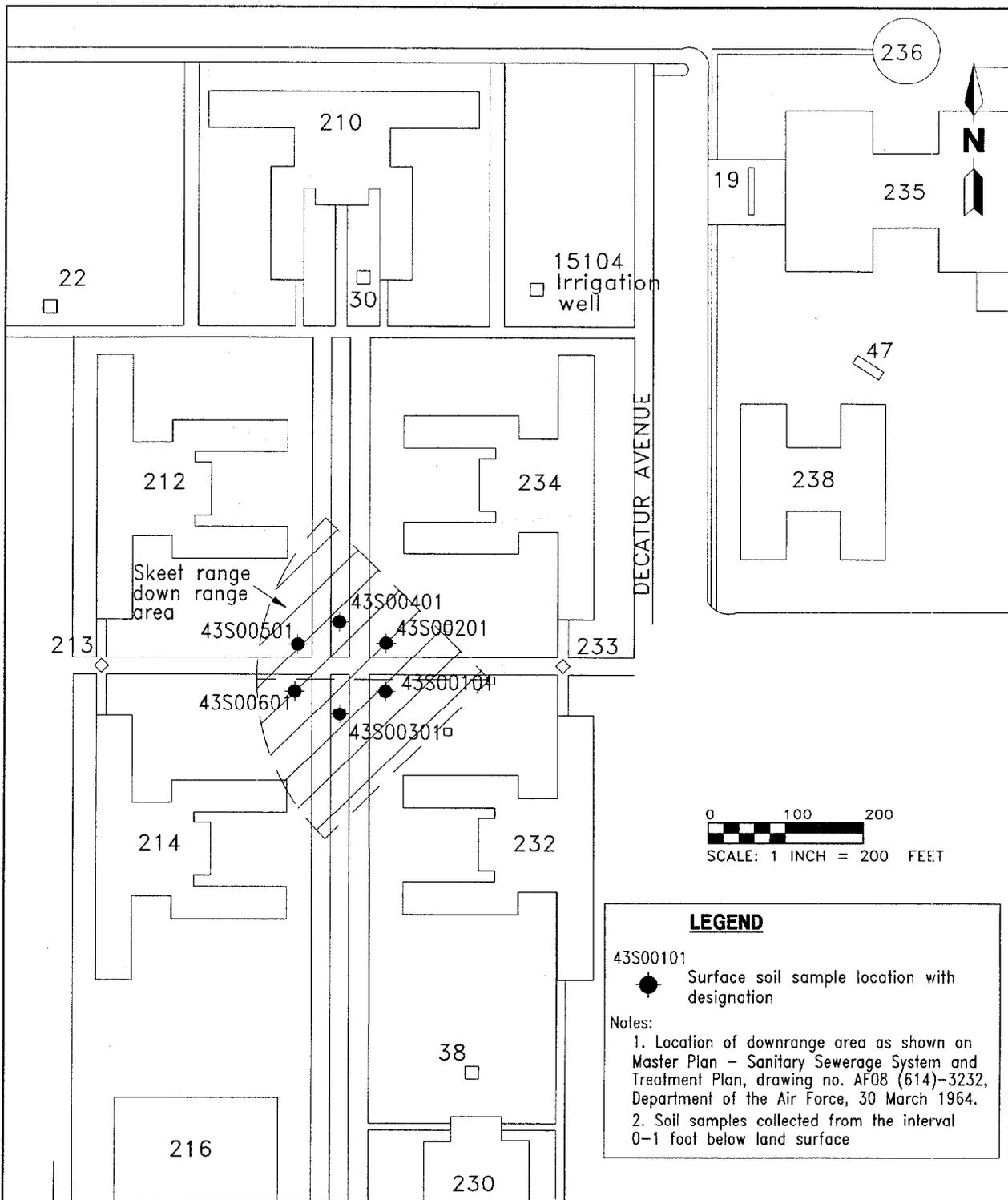


STUDY AREA 43
 (Building 601)

HERNDON ANNEX
 NOT TO SCALE



BASE REALIGNMENT AND
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STUDY AREA 43
NAVAL TRAINING CENTER
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LEGEND

43S00101
 Surface soil sample location with designation

- Notes:
1. Location of downrange area as shown on Master Plan - Sanitary Sewerage System and Treatment Plan, drawing no. AF08 (614)-3232, Department of the Air Force, 30 March 1964.
 2. Soil samples collected from the interval 0-1 foot below land surface

**FIGURE 2
 SURFACE SOIL SAMPLE LOCATIONS AT NORTH
 GRINDER SKEET RANGE, MAIN BASE,
 STUDY AREA 43**



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 STUDY AREA 43
 NAVAL TRAINING CENTER
 ORLANDO, FLORIDA**

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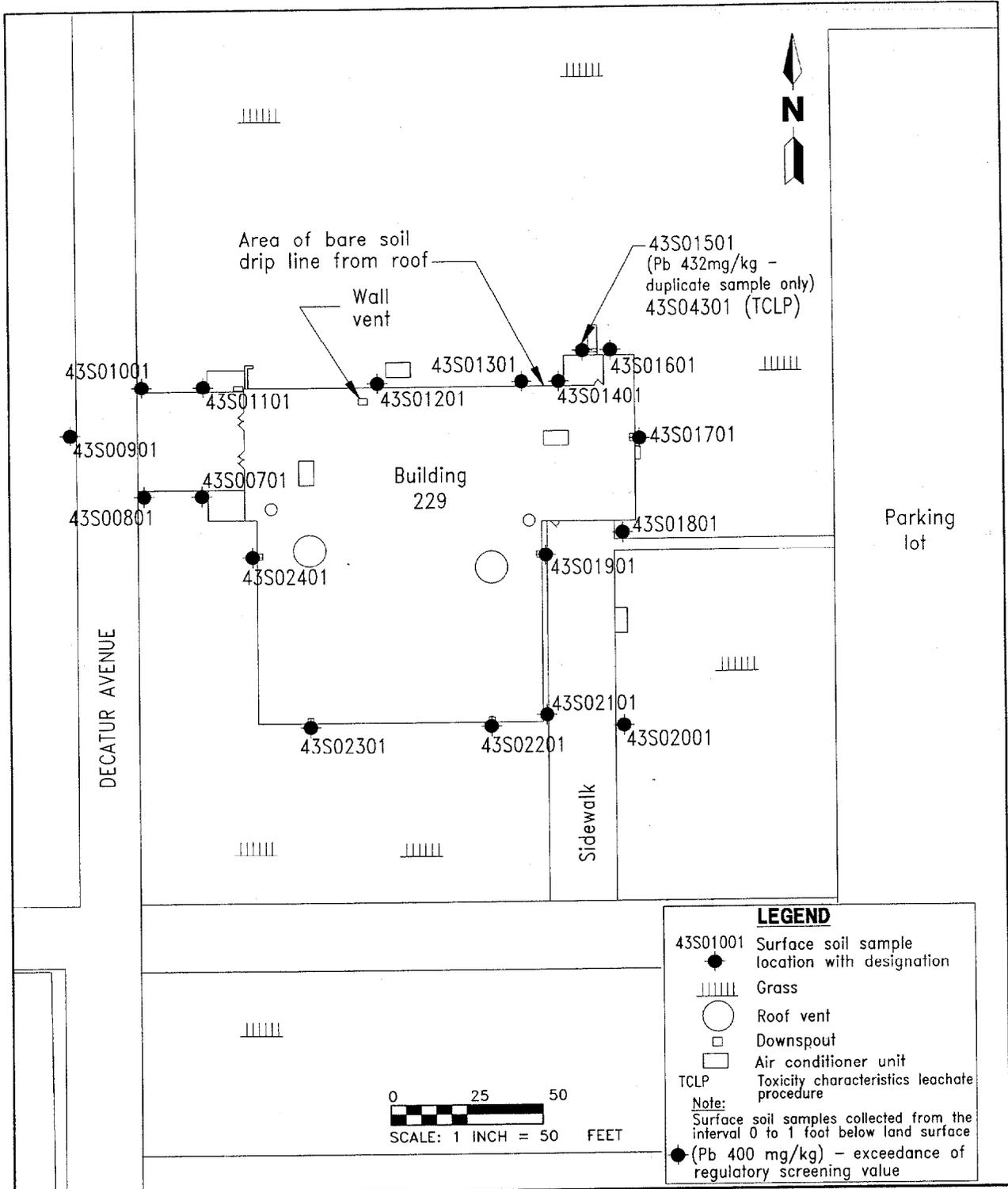


FIGURE 3
SURFACE SOIL SAMPLE LOCATIONS, LEAD EXCEEDANCES OF REGULATORY CRITERIA, AND TCLP SAMPLE LOCATION BUILDING 229, INDOOR RIFLE AND PISTOL RANGE, RECRUIT TRAINING COMMAND, MAIN BASE, STUDY AREA 43



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potential for lead contamination in the surface soil near vents, windows, and walkways, where air-borne lead particles might have accumulate prior to installation of the filters.

1.1.3 SA 43, Indoor Rifle and Pistol Range, Building 601, Herndon Annex Building 601 is located in the southwest corner of Herndon Annex (Figure 4). The building, which is currently vacant, was constructed in 1970 and occupies 2,268 square feet. A bullet trap is located at the northern end of the building. The period of operation for the range is not known. Prior to 1970, the property was undeveloped and may have been part of Orlando Executive Airport. Stormwater from the site flows northeast within a drainage basin, and from there to a ditch along the eastern property line. The environmental concern at this area is the potential for lead contamination in the surface soil near vents, windows, and walkways where air-borne lead particles might have accumulated.

1.2 SA 43, INVESTIGATION SUMMARY. This section includes a description of the field investigation of each of the areas comprising SA 43. Additional information is included in the SSP, Addendum 1 (ABB-ES, 1995a).

1.2.1 SA 43, Skeet Range at North Grinder Landfill In accordance with the agreements reached at the July 10, 1995 Base Realignment and Closure (BRAC) cleanup team meeting, a total of six surface soil samples and one field duplicate were collected from the interval of 0 to 1 foot below land surface (bls) at six locations in the zone most likely to have received spent shot. Sample identification numbers for these locations are 43S00101 through 43S00601. The soil samples collected for analysis were noted to consist of dry sand. The sample locations are shown on Figure 2. Samples were submitted for Contract Laboratory program (CLP) analysis of inorganic lead by USEPA Method 3050/6010, in accordance with USEPA Level IV data quality objectives (DQOs).

1.2.2 SA 43, Indoor Rifle and Pistol Range, Building 229, Main Base The first activity performed for this site was to inspect the exterior of the building to identify potential emission or deposition points. Because the potential contaminant distribution mechanisms at this location are deposition of air- or water-borne particulates, sampling activities were biased towards locations near doors, downspouts, vents, and windows. A total of 18 surface soil samples and 2 field duplicates were collected from the interval of 0 to 1 foot bls at locations shown on Figure 3. Sample identification numbers for this site are 43S00701 through 43S02401. The soil samples collected for analysis were noted to consist of dry sand. The samples were submitted for CLP analysis of inorganic lead by USEPA Method 3050/6010, in accordance with USEPA Level IV DQOs.

1.2.3 SA 43, Indoor Rifle and Pistol Range, Building 601, Herndon Annex The first activity performed for this site was to inspect the exterior of the building to identify potential emission or deposition points. Because the potential contaminant distribution mechanisms at this location are deposition of air- or water-borne particulates, sampling activities were biased towards locations near doors, downspouts, vents, and windows. A total of 18 surface soil samples and 2 field duplicates were collected from the interval of 0 to 1 foot bls at locations shown on Figure 4. Sample identification numbers for this site

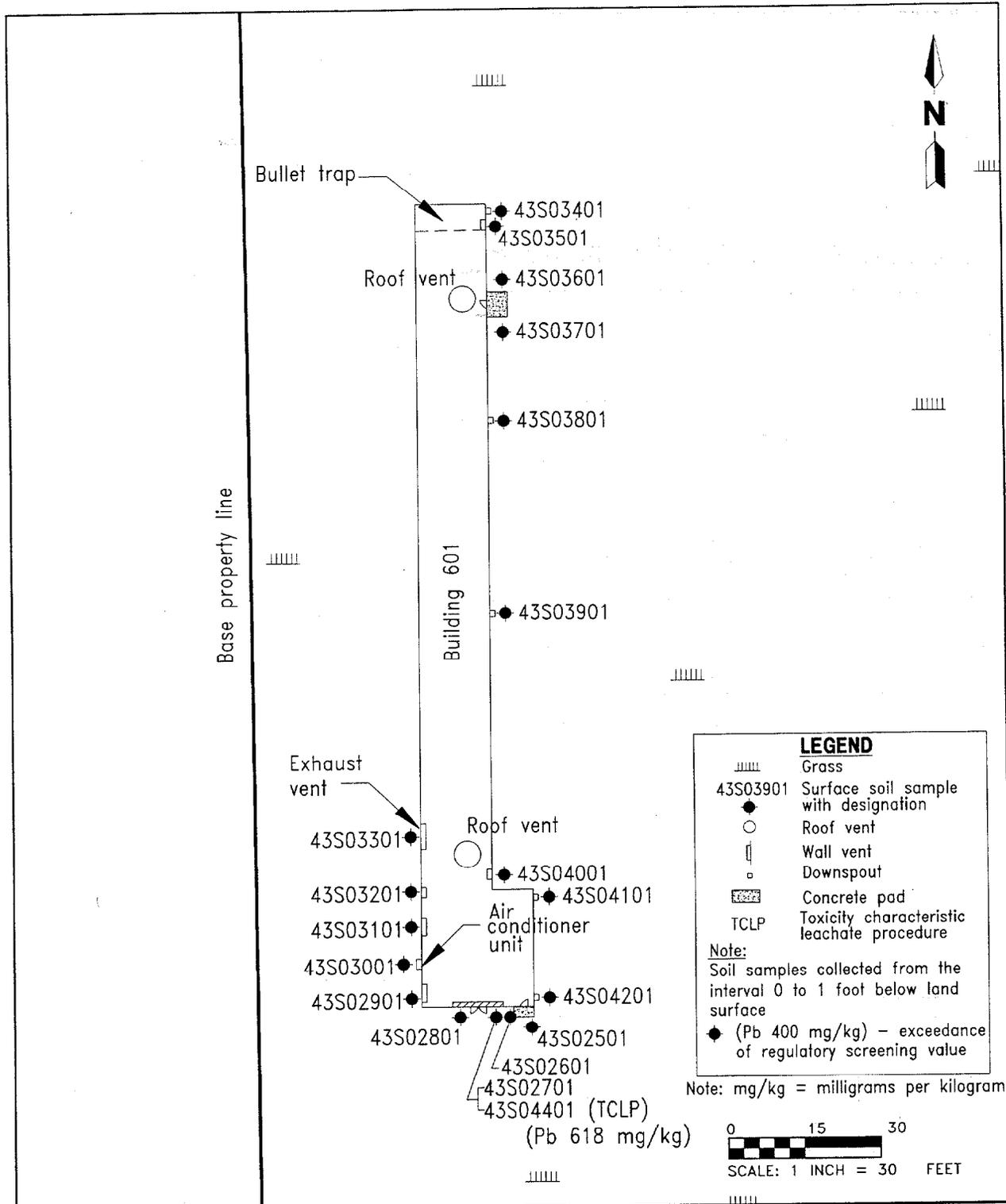


FIGURE 4
SURFACE SOIL SAMPLE LOCATIONS, LEAD EXCEEDANCES OF REGULATORY CRITERIA, AND TCLP SAMPLE LOCATION AT BUILDING 601, FORMER INDOOR RIFLE AND PISTOL RANGE, HERNDON ANNEX, STUDY AREA 43



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are 43S02501 through 43S04201. The soil samples collected for analysis were noted to consist of dry sand. The samples were submitted for CLP analysis of inorganic lead by USEPA Method 3050/6010, in accordance with USEPA Level IV DQOs.

1.3 SA 43, RESULTS. The results of site screening investigations at SA 43 are discussed below. Analytical results from the surface soil collected from SA 43 are presented in Appendix A, Summary of Surface Soil Analytical Results, Total Lead and Toxicity Characteristic Leachate Procedure (TCLP) Lead. Exceedances of background or regulatory guidance concentrations (shown in bold and shade on the table in Appendix A) are displayed in chemical boxes near their respective explorations on Figures 2, 3 and 4.

Of the 42 surface soil samples collected, 34 samples contained lead concentrations greater than the reported detection limit. Eighteen surface soil samples exceeded the background screening value for lead for Main Base and Herndon Annex (14.5 mg/kg), including samples from two locations (three samples total) at the North Grinder skeet range, seven locations (eight samples total) at Building 229, and nine locations (10 samples total) at Building 601.

Only two surface soil samples exhibited lead concentrations that exceeded both background and regulatory screening guidance levels. They were 43S01501 at Building 229, Main Base and 43S02701 at Building 601, Herndon Annex.

Sample 43S01501D (432 mg/kg) at Building 229 on Main Base slightly exceeded the USEPA lead screening guidance concentration. However, the corresponding field sample for duplicate sample 43S01501D reported a lead concentration of 228 mg/kg. The average concentration at this location was 330 mg/kg, which is below the regulatory screening level.

Sample 43S02701 (618 mg/kg) near Building 601 at Herndon Annex exceeded the SCG (500 mg/kg) and USEPA lead screening guidance (400 mg/kg). This sample was collected in front of an overhead door on the south side of the building (Figure 4). A second sample in front of the door (43S02801) and samples 43S02601 and 43S02601D were all collected within 8 feet of 43S02701 and had lead concentrations well below the guidance values. (Sample 43S02801 contained 126 mg/kg lead, and the average lead concentration at location 43S02601 was 41.9.)

Because of Orlando Partnering Team (OPT) concerns regarding these two samples, ABB-ES was directed to resample at the two sample locations where screening criteria were exceeded (43S01501 and 43S02701) and to submit the additional samples for TCLP analysis for lead. The two additional samples (Figures 3 and 4, and Appendix A) are 43S04301 and 43S04401, respectively. The TCLP analysis revealed that the lead concentrations at these two sample locations was 2,540 J (estimated) milligrams per liter (mg/l) and 115 J mg/l, which is below the TCLP regulatory limit of 5,000 mg/l.

Regulatory guidance levels for lead were not exceeded in any surface soil samples collected from locations at the North Grinder Landfill Skeet Range. Laboratory data collected during the site screening program were evaluated to determine if the SAs are suitable for a Finding of Suitability to Lease or Finding of

Suitability to Transfer (FOST). Surface soil and subsurface soil samples were collected for analyses as a part of this program. No groundwater, surface water, or sediment data were evaluated as part of this investigation.

Analytical results for soil were compared to screening criteria, which included background screening values as presented in the Background Sampling Report (ABB-ES, 1995c), SCG for Florida (Florida Department of Environmental Protection [FDEP], 1995), and USEPA Soil Lead Guidance (USEPA, 1994).

Background screening values for inorganics in surface soil, subsurface soil, and groundwater are equivalent to two times the average of detected concentrations of inorganic analytes. Rationale for establishment of screening values is summarized in the Background Sampling Report (ABB-ES, 1995c).

1.4 SA 43, CONCLUSIONS AND RECOMMENDATIONS. Although approximately half of the surface soil samples collected in this SA exceeded the background screening concentration for lead, only two surface soil samples exceeded regulatory guidance levels (one at Building 601 and one at Building 229). Resampling at these locations for TCLP analysis resulted in a finding that these locations did not exceed the TCLP regulatory limit. These occurrences do not appear to represent a significant environmental concern, due to the isolated nature of the occurrences, and the relatively low values detected.

Based on information available and evaluation of site screening data for this SA, ABB-ES makes the recommendations below.

- a classification of 1/White for the North Grinder Landfill Skeet Range, with an FOST and no requirement for further evaluation. Buildings located near the skeet range have been classified 7/Gray (Building 212), 2/Blue (Buildings 214 and 232), and 6/Red (Building 234). Their classifications are unaffected by the results of this screening investigation.
- a reclassification of the area directly surrounding the pistol ranges (Building 229 on Main Base and Building 601 on Herndon Annex) from 7/Gray to 3/Light Green, with an FOST and no requirement for further evaluation. It should be noted that, as directed by the OPT, the buildings themselves were not evaluated as part of this screening investigation. The buildings are appropriate for an FOST with the stipulation that future use remains the same as their former use, i.e., firing ranges. In the event that a building reuse plan is proposed, environmental conditions of the buildings themselves must be evaluated.

The undersigned members of the OPT concur with the findings and recommendations of the preceding investigation.

STUDY AREA 43

Nancy Rodriguez
U.S. Environmental Protection Agency Region IV

12/10/96
Date

John W. Mitchell
Florida Department of Environmental Protection

12/10/96
Date

Wayne J. Howell
U.S. Department of the Navy

12/10/96
Date

REFERENCES

- ABB Environmental Services, Inc. (ABB-ES), 1995a, Site Screening Plan, Groups I through V Study Areas and Miscellaneous Additional Sites, Addendum 1, Naval Training Center (NTC), Orlando, Florida: prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina.
- ABB-ES, 1995b, Technical Memorandum, U.S. Air Force Records Search, NTC Orlando, Orlando, Florida: prepared for SOUTHNAVFACENGCOM, Charleston, South Carolina, September (Final).
- ABB-ES, 1995c, Background Sampling Report, NTC Orlando, Orlando, Florida: prepared for SOUTHNAVFACENGCOM, Charleston, South Carolina, August (Final).
- Florida Department of Environmental Protection, 1995, Soil Cleanup Goals for Sites in Florida, Tallahassee, Florida, September.
- U.S. Environmental Protection Agency, 1994, Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities, Office of Solid Waste and Emergency Response (OSWER) Directive No. 9355.4-12, July.

APPENDIX A
SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
TOTAL LEAD AND TOXICITY CHARACTERISTIC LEACHATE PROCEDURE LEAD
STUDY AREA 43

Appendix A
 Summary of Surface Soil Analytical Results
 Total Lead and TCLP Lead
 Study Area 43

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Sample_ID	Lab_ID	Sampling Date	Total Lead, mg/kg
Background Screening ¹			14.5
SCG ²			500
OSWER Guidance Value ³ for Residential Soil			400
43S00101	G8945001	14-Dec-95	3.5
43S00201	G8945002	14-Dec-95	2.5
43S00301	G8945003	14-Dec-95	8.7
43S00401	G8945004	14-Dec-95	6.7
43S00501	G8945005	14-Dec-95	333
43S00601	G8945006	14-Dec-95	186
43S00601D	G8945007	14-Dec-95	155
43S00701	G8947001	14-Dec-95	9.7 J
43S00801	G8947002	14-Dec-95	6.4 U
43S00901	G8947003	14-Dec-95	7.6 J
43S01001	G8947004	14-Dec-95	27.8 J
43S01101	G8947005	14-Dec-95	11.1 J
43S01201	G8947006	14-Dec-95	13 J
43S01301	G8947007	14-Dec-95	6.8 J
43S01401	G8947008	14-Dec-95	6.5 U
43S01501	G8947009	14-Dec-95	228 J
43S01501D	G8947020	14-Dec-95	432 J
43S01601	G8947010	14-Dec-95	174 J
43S01701	G8947011	14-Dec-95	6.4 U
43S01801	G8947012	14-Dec-95	33.8 J
43S01901	G8947013	14-Dec-95	172 J
43S02001	G8947014	14-Dec-95	11.3 J
43S02101	G8947015	14-Dec-95	84.2 J
43S02201	G8947016	14-Dec-95	6.3 U
43S02301	G8947017	14-Dec-95	31.4 J
43S02401	G8947018	14-Dec-95	13.5 J
43S02401D	G8947019	14-Dec-95	7.1 J
43S02501	G8946001	14-Dec-95	13.9 J
43S02601	G8946002	14-Dec-95	40.7 J
43S02601D	G8946003	14-Dec-95	43 J
43S02701	G8946004	14-Dec-95	618 J
43S02801	G8946005	14-Dec-95	126 J
43S02901	G8946006	14-Dec-95	13.7 J
43S03001	G8946007	14-Dec-95	6.5 U
43S03101	G8946008	14-Dec-95	14.7 J
43S03201	G8946009	14-Dec-95	6.5 U
43S03301	G8946010	14-Dec-95	56.8 J
43S03401	G8946011	14-Dec-95	15.9 J
43S03501	G8946012	14-Dec-95	22.3 J
43S03601	G8946013	14-Dec-95	69.6 J
43S03701	G8946014	14-Dec-95	36.2 J
43S03801	G8946015	14-Dec-95	9.2 J
43S03901	G8946016	14-Dec-95	7 J
43S04001	G8946017	14-Dec-95	6.4 U
43S04101	G8946018	14-Dec-95	9.6 J
43S04201	G8946019	14-Dec-95	6.6 U

Appendix A
 Summary of Surface Soil Analytical Results
 Total Lead and TCLP Lead
 Study Area 43

Environmental Site Screening Report
 Naval Training Center, Orlando
 Orlando, FL

Sample_ID	Lab_ID	Sampling Date	Total Lead, mg/kg
Background Screening ¹			14.5
SCG ²			500
OSWER Guidance Value ³ for Residential Soil			400
43S04201D	G8946020	14-Dec-95	6.80 J
			TCLP Lead, ug/L
TCLP regulatory limit			5000
43S04301 (same location as 43S01501)	MB155001	17-Jun-96	2540 J
43S04401 (same location as 43S02701)	MB155002	17-Jun-96	115 J

NOTES:

¹ The background screening value is twice the average of detected concentrations for soil lead..

² SCG = Soil Cleanup Goals for Florida, Residential Land Use (Florida Department of Environmental Protection memorandum, September 29, 1995)

³ Risk-based concentration (as per USEPA Region III) is not available for lead.
 The value indicated is from "Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites" (OSWER directive 9355-4-12).

TCLP = Toxicity Characteristic Leachate Procedure. TCLP analysis was done on additional samples collected at or near locations with total lead concentrations exceeding the regulatory guidance value (S043 at S015, S044 at S027).

ND = Not determined.

D = Field duplicate sample.

J = Reported concentration is an estimated quantity.

mg/kg = milligrams per kilogram.

ug/L = microgram per liter.

OSWER = Office of Solid Waste and Emergency Response.

USEPA = U.S. Environmental Protection Agency.

Bold/shaded values indicate exceedance of regulatory guidance and background.

Total lead results expressed in milligrams per kilogram (mg/kg) soil dry weight.

TCLP lead results expressed in micrograms per liter (ug/L).