U.S. Army Corps
of Engineers

FINAL CORRECTIVE ACTION PLAN - PART B
FORMER BUILDING 728
EPD FACILITY NO. 9025035 AND 9025049

at

HUNTER ARMY AIRFIELD
SAVANNAH, GEORGIA

under

Contract No. DACA21-93-D-0049
Delivery Order No. 24

December 1997

Submitted to:
U.S. Army Corps of Engineers
Savannah, Georgia

Presented by:
Metcalf & Eddy, Inc.
Atlanta, Georgia

DOCUMENT 5

The following Final Corrective Action Plan- Part B (CAP-Part-B) is subject to release under the Freedom of Information Act (FOIA). Requests for the document must be referred to Commander, U.S. Army Corps of Engineers, PM-H, P. O. Box 889, Savannah, GA 31402-0889.

This Final CAP-Part B was prepared in accordance with the Statement of Work (SOW) prepared by the United States Army Corps of Engineers (USACE) for the investigation of former Building 728 at Hunter Army Airfield. This document was prepared under the supervision of David Wilderman, P.G., Project Manager.

This document was reviewed and approved by:

David M. Wilderman, P.G.

Project Manager
Title

12.4.97
Date

Building 728

Georgia Department of Natural Resources

Environmental Protection Division

Land Protection Branch

Underground Storage Tank Management Program
4244 International Parkway, Suite 104, Atlanta, Georgia 30354
Lonice C. Barrett, Commissioner
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CORRECTIVE ACTION PLAN
PART B

Facility Name: Hunter Army Airfield
Street Address: Former Building 728 and Northern Fuel Battery
City: Savannah   County: Chatham
Facility ID: 9025035 and 9025049* (See note below)

Submitted by UST Owner/Operator:
Name: Mr. John Spears (AFZP-DEV)
Company: Directorate of Public Works
Address: 1557 Frank Cochran Drive
City: Ft. Stewart State: Georgia
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Prepared by:
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I. PLAN CERTIFICATION:

A. UST Owner/Operator

I hereby certify that the information contained in this plan and in all the attachments is true, accurate, and complete, and the plan satisfies all criteria and requirements of Rule 391-3-15-.09 of the Georgia Rules for Underground Storage Tank Management.

Name: John Spears, Chief Environmental

Signature: ______________ Date: ______________

B. Professional Engineer or Professional Geologist

Name: David M. Wilderman, P.G.

Signature: [signature]

Date: 12.4.97

Georgia Stamp or Seal

*NOTE: On April 2, 1996, the installation submitted a request to the Underground Storage Tank Management Program (Attention: Ms. Debbie McClanahan) to combine two sites (facility identification numbers 9-025035 and 9-025049) at Hunter Army Airfield. Ms. Peggy McGee approved this revision on the telephone, prior to the submittal, based on the site specific conditions.

Building 728

Check all boxes below that apply. Attach supporting documentation, i.e., narrative, figures, tables, maps, boring/well logs, etc., for all items checked. Supporting documentation should be three-hole punched and prepared in conformity with the guidance document "Underground Storage Tank (UST) Release: Corrective Action Plan - Part B (CAP-B) Content," GUST-7B.

II. SITE INVESTIGATION REPORT

A. Horizontal and Vertical Extent of Contamination: See Supporting Documentation, Section II.A.

■ Soil ■ Groundwater ■ Free product ■ Surface water

B. Local and Site Hydrogeology: See Supporting Documentation, Section II.B.

- ■ Documentation of Local Groundwater Conditions
- ■ Stratigraphic Boring Logs **(see Appendix A)**
- ■ Stratigraphic Cross Sections (see **Figures 10 and 11)**
- ■ Referenced or Documented Calculations of Relevant Aquifer Parameters
- ■ Direction of Groundwater Flow:
  - ■ Table of Monitoring Well Data **(Table 6)**
  - ■ Potentiometric Map **(Figure I2)**
  - ■ Flow Net Superimposed on a Base map **(Figure 12)**

III. REMEDIAL ACTION PLAN:

A. Corrective Action Completed or In-Progress: See Supporting Documentation, Section III.A.

- ■ Recovery/Removal of Free Product (Non-aqueous Phase Hydrocarbons)
- ■ Remedial/Treatment of Contaminated Backfill Material & Native Soils
- ☐ Other (specify) ____________________

____

B. Objectives of Corrective Action: See Supporting Documentation, Section III.B.

Remove Free Product that Exceeds One-Eighth Inch

Remediate Groundwater Contamination that Exceeds:

- ■ Maximum Contaminant Levels (MCLs)

OR

B. Objectives of Corrective Action (continued):

- ☐ In-stream Water Quality Standards

- ■ Remediate Soil Contamination that Exceeds:
  - ■ Threshold Values Listed in Table A

    OR

  - ☐ Threshold Values Listed in Table B

    OR

  - ☐ Alternate Threshold Levels (ATLs) (Reference CAP A App. I)

- ☐ Provide Risk-Based Corrective Action (Reference CAP B App. I)
  - ☐ Remediate Soil and/or Groundwater Contamination that Exceeds Alternate Concentration Limits (ACLs) and Monitor Residual Contaminants

    OR

  - ☐ Monitor Soil and/or Groundwater Contamination that Exceeds Levels in Rule - .09(3) But is Less than ACLs

C. Design and Operation of Corrective Action Systems: See Supporting Documentation, Section III.C.

■ Soil ■ Groundwater ■ Free Product ☐ Surface Water

D. Implementation: See Supporting Documentation Section, III.D.

Includes, as a minimum, the following:

- Milestone schedule for site remediation **(See Figure 14)**
- Inspection and preventive maintenance schedule for all specialized remediation equipment
- Monitoring/sampling and reporting plan for measuring interim progress and project completion
- Plan to decommission equipment/wells and close site

IV. PUBLIC NOTICE:

- ☐ Certified Letters to Adjacent, and Potentially Affected Property Owners and Local Officials
- ■ Legal Notice in Newspaper, as approved by EPD **See Appendix F**
- ☐ Other EPD-approved Method (specify)

V. CLAIM FOR REIMBURSEMENT (For GUST Trust Fund sites only)*

- ☐ GUST Trust Fund Application (GUST-36), must be attached if applicable
- ☐ Cost Proposal
  - ☐ Non-Reimbursable Costs

    OR
  - ☐ Reimbursable Costs
    - ☐ Total Project Costs
      - ☐ Costs incurred to date, per GUST-92
      - ☐ Estimated costs to complete corrective action, per GUST-92
    - ☐ Invoices and Proofs-of-Payment for Costs Incurred To-Date
- ☐ Proposed Schedule for Reimbursement
  - ☐ Lump Sum Payment Upon Completion of Corrective Action

    OR
  - ☐ Interim Payments With Final Payment Upon Completion

*Note: Ft. Stewart is a Federal Installation and is not eligible for funding through the GUST Trust Fund.

SUPPORTING DOCUMENTATION
FINAL CORRECTIVE ACTION PLAN - PART B
EPA FACILITY ID: 9025035 and 9025049

FORMER BUILDING 728
HUNTER ARMY AIRFIELD
SAVANNAH, GEORGIA
CONTRACT NO. DACA 21-93-D-0049
DELIVERY ORDER NO. 0024

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LIST OF ACRONYMS

ATL	Alternate Threshold Level
bls	below land surface
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAP	Corrective Action Plan
cm	centimeters
cm/sec	centimeters per second
COC	Chain-of-Custody
DNR	Department of Natural Resources
DOT	Department of Transportation
DRO	Diesel Range Organics
EPA	Environmental Protection Agency
EPD	Environmental Protection Division (State of Georgia, Department of Natural Resources)
ft/day	feet per day
ft/ft	feet per feet
GRO	Gasoline Range Organics
GUST	Georgia Underground Storage Tank
HA	Hand Auger
HAAF	Hunter Army Airfield
HSA	Hollow Stem Auger
IWQS	Instream Water Quality Standard
K	Hydraulic Conductivity
MCL	Maximum Contaminant Level
M&E	Metcalf & Eddy, Inc.
mg/kg	milligrams per kilogram
msl	mean sea level
MTBE	methyl tert-butyl ether
MW	Monitoring Well
OVA	Organic Vapor Analyzer
PAH	Polynuclear Aromatic Hydrocarbons
PRG	Preliminary Remediation Goal
PRS	Potential Receptor Survey
PVC	Polyvinyl chloride
RBCA	Risk-Based Corrective Action
RCRA	Resource Conservation and Recovery Act
SB	Soil Boring
SCFM	Standard cubic feet per minute
sec	second
SI	Site Investigation
SIP	Site Investigation Plan
SPH	Separate Phase Hydrocarbons

LIST OF ACRONYMS (Continued)

STL	Soil Threshold Level
SWE	Surface Water/Sediment
SVE	Soil Vapor Extraction
TOC	Top of Casing
TPH	Total Petroleum Hydrocarbons
µg/L	micrograms per liter
UST	Underground storage tank
USACE	United States Army Corps of Engineers

LIST OF REFERENCES

Burroughs Quadrangle, Georgia, 7.5 Minute Series Topographic Map, 1988.

Clarke, John S., Hacke, Charles M. and Peck, Michael F., 1990, Geology and Ground Water Resources of the Coastal Area of Georgia, Department of Natural Resources, Bulletin 113, 106p.

Fetter, C.W., 1994, Applied Hydrogeology, Third Edition, Prentice - Hall, Inc., Englewood Cliffs, New Jersey, p. 145, 249.

Garden City Quadrangle, Georgia, 7.5 Minute Series Topographic Map, 1980.

Georgia Department of Natural Resources, Environmental Protection Division, February 1995, Underground Storage Tank Management, Chapter 391-3-15.

Georgia Department of Natural Resources, Environmental Protection Division, 1995, GUST-CAPB.FOR.

Isle of Hope Quadrangle, Georgia, 7.5 Minute Series Topographic Map, 1988.

Metcalf & Eddy, August 1996, Final Corrective Action Plan - Part A Phase I Site Investigation of the Airport Hydrant System (Building 728) Facility ID: 9025035 and 9025049, Hunter Army Airfield.

Savannah Quadrangle, Georgia 7.5 Minute Series Topographic Map, 1978.

State of Georgia, 1995, Georgia Underground Storage Tank Act, Section 12-13-1 et seq.

U.S. Army Corps of Engineers, Savannah District, August 23, 1996, Scope of Work, CAP Part B Investigation at Building 728, Hunter Army Airfield, Georgia.

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INTRODUCTION

Metcalf & Eddy, Inc. (M&E) was retained by the U.S. Army Corps of Engineers (USACE) to conduct a subsurface investigation of former Building 728 at Hunter Army Airfield (HAAF). The investigation was conducted in accordance with the USACE scope of work (USACE, 1996). Information presented in the following sections of this Corrective Action Plan (CAP) - Part B Supporting Documentation is arranged in the order referenced in the Georgia Environmental Protection Division (EPD) "GUST-CAPB.FOR" form, dated February 1995. The section titles in this Supporting Documentation are identical to the section titles on the form for simplicity of reference. All information required by the EPD is presented herein. A scaled site plan showing the investigation area is provided on **Figure 1**.

SECTION II.A. Horizontal and Vertical Extent of Contamination

M&E began an initial site investigation at former Building 728 in September 1994. Soil and groundwater samples were collected from soil borings and groundwater monitoring wells installed in proximity to former Building 728 during the investigation. Chemical analytical results of the samples and related investigation findings were presented in a Corrective Action Plan- Part A (CAP-Part A) (M&E, 1996). A Site Investigation Plan (SIP), provided as Section III of the CAP-Part A, outlined procedures for further investigation to define the extent of soil and groundwater contamination. The SIP also included provisions for sampling and analyzing surface water and sediment in the nearby drainage canal. Although review comments from the EPD have not, to date, been received for the CAP-Part A, the Installation initiated the activities outlined in the SIP and performed fieldwork from February 1997 to April 1997. The resulting assessment data is discussed in the following sections.

Soil

Two soil borings (SB149 and SB150), 13 well borings (MW55 through MW67), and 14 hand auger borings (HA135 through HA148) were advanced to further define the extent of subsurface contamination at the former Building 728 site from February 24 through March 4, 1997. **Figure 2** illustrates the sampling locations. Two soil samples were collected at each soil and well boring location. One soil sample was collected from each hand auger location. Samples were analyzed for volatile organic hydrocarbons (benzene, toluene, ethylbenzene, xylene and methyl tert-butyl ether-BTEX/MTBE), polynuclear aromatic hydrocarbons (PAHs), total petroleum hydrocarbons - gasoline range organics (TPH-GRO), and total petroleum hydrocarbons-diesel range organics (TPH-DRO) by EPA methods 8020, 8100, Modified 8015, and Modified 8100, respectively. Geologic boring logs prepared during the investigation are provided in **Appendix A**.

Petroleum hydrocarbons were identified in soil in the former Building 728 area. Hydrocarbon compounds detected at concentrations above the Table A, Column 1 soil threshold levels include: benzene, toluene, ethyl benzene, and xylene. **Table 1** lists petroleum constituents and concentrations identified in soil samples. Benzene was detected in soil at a concentration of 0.0058 mg/kg at HA142. Benzene was not identified at any other location at a concentrations above the laboratory detection limits. However, the laboratory detection limit for benzene exceeded the soil threshold level (STL) listed in Table A of Georgia Rule 391-3-15.09 (0.005 mg/kg) at 27 of 29 boring locations due to matrix interferences. Matrix interferences during soil sample laboratory analysis made the accurate quantification of benzene concentrations nearly impossible. Moreover, the low soil threshold level of 0.005 mg/kg was often below the lowest quantifiable sample concentration.

Several PAH constituents listed in Table A and B of Georgia Rule were also detected in soil samples at concentrations above the STL. However, the PAH concentrations are not considered significant when compared to risk based screening levels developed by EPD (Hazardous Sites Response Act) and EPA. PAH concentrations listed in **Table 1**, were an order of magnitude below risk reduction standards developed by EPD for residential scenarios.

Alternate Threshold Levels (ATLs) were calculated for constituents detected in soil that exceeded the STLs listed in Chapter 391-3-15, Table A, Column 1. The ATLs were lower than the Table A screening criteria for all hydrocarbon compounds identified in soil samples. Therefore, ATLs are not considered applicable for use as preliminary remediation goals (PRG's) at former Building 728. The higher concentrations of petroleum hydrocarbons were typically detected near the groundwater table (4 to 6 feet below land surface - bls). **Figure 3** illustrates petroleum hydrocarbon concentrations in soil. Soil sampling locations which exhibit hydrocarbon concentrations greater than STLs are illustrated on **Figure 4**. Analytical data is provided in **Appendix B**.

Groundwater

M&E installed 13 permanent monitoring wells during the CAP-Part A fieldwork. Eleven shallow monitoring wells (MW55 through MW65) and two deep wells (MW66 and MW67) were installed in proximity to the former Building 728 area from February 24 through March 1, 1997 as part of the CAP-Part B fieldwork. The new wells were located to further define the extent of contamination previously identified in the CAP- Part A investigation. Shallow monitoring wells were finished at depths ranging from 12 to 15 feet bls and were constructed with a 10-foot section of well screen placed to bracket the water table. Deep monitoring wells were finished from 40 to 42 feet bls and were constructed with 5-foot screen sections at the base of each well to determine groundwater quality at depth. Monitoring well schematics, development sheets, and photographs are provided in **Appendix C**.

Groundwater samples were collected at the former Building 728 site from 11 of the 13 new monitoring wells (two wells, MW59 and MW62, contained free product and were not sampled) along with 11 of 13 existing monitoring wells (MW-8 contained free product and MW-4 had been destroyed) on March 31 and April 1, 1997. The samples were submitted for laboratory analysis by EPA methods 8020 and 8100 (BTEX/MTBE and PAHs, respectively).

Dissolved petroleum hydrocarbons were identified in groundwater around the former Building 728 area. Benzene exceeded the federal drinking water maximum contaminant level (MCL) of 5 μg/L (also listed in Georgia Rule 391-3-6) in 10 of the 20 shallow wells. Benzene was not identified in either of the deep wells. **Table 2** summarizes petroleum constituents identified in groundwater samples. Analytical laboratory reports are provided in **Appendix B**.

The presence of soluble petroleum hydrocarbons in groundwater has been defined around the former Building 728 area. The more elevated concentrations were typically detected northwest of the former Building 728 area. **Figure 5** illustrates petroleum hydrocarbon concentrations in groundwater. A contour map of benzene concentrations in groundwater is provided on **Figure 6**.

Seven wells (MW01, 02, 03, 09, 55, 56 and 57) were sampled for RCRA metals analysis (EPA Method 6010/7000). RCRA metals analyses were performed because of the reported waste oil underground storage tanks (USTs) near former Building 728. Concentrations of chromium, lead, and selenium in wells MW01, MW02, MW03, MW55, MW56, and MW57 exceeded MCLs. Chromium was identified in 3 of the 7 wells above the MCL of 100 μg/l at concentrations ranging from 110 μg/l to 200 μg/l. The 15 μg/l lead MCL was exceeded at 6 of the 7 wells in concentrations ranging from 34 μg/l to 260 μg/l. Selenium concentrations marginally exceeded the 50 μg/l MCL at 2 of the 7 wells at concentrations of 62 μg/l and 68 μg/l. The source of elevated metals in groundwater is unknown. **Figure** 7 illustrates concentrations of metals in groundwater samples which exceed their respective MCLs. Photographs of well development water, provided in **Appendix C**, show no visible evidence of suspended sediment. However, suspended sediments invisible to the unaided eye may affect laboratory analytical results.

Surface Water

M&E attempted to collect three surface water samples (SWE01, SWEO2, and SWE03) from the nearby drainage canal and buried culvert. Sampling locations SWE01 and SWE02 were in the underground culvert and SWE03 was in the canal. **Figure 8** provides an illustration of surface water sampling locations and associated hydrocarbon concentrations. Only two locations contained water for sampling (SWE01 and SWE03). Surface water samples were analyzed for the same parameters as groundwater samples. Surface water flows from southeast (SWE01) to northwest (SWE03) in the ditch/culvert. Drainage from the former Building 728 area then flows northwest toward Springfield Canal. BTEX constituents were identified in both surface water samples but neither exceed the Georgia Instream Water Quality Standard (IWQS). No PAH constituents were detected in the surface water. **Table 3** lists petroleum constituents and concentrations identified in the surface water samples. Analytical laboratory reports are provided in **Appendix B**.

M&E also attempted to collect three sediment samples (SWE01, SWEO2, and SWE03) from the same surface water sampling locations. However, no sediment existed in the drainage culvert, and therefore the only sediment sample collected was from the open drainage canal. The sample was analyzed for the same parameters as previously mentioned for soil samples. No BTEX constituents were detected in the sediment samples, but three PAH constituents were detected above STLs. PAH concentrations exceeding STL ranged from 0.89 to 1.4 mg/kg compared to the screening criteria of 0.66 mg/kg. When compared to risk based screening levels developed by EPD (Hazardous Sites Response Act) and EPA for the protection of human health, the PAH concentrations are not considered to be significant. The PAH concentrations, listed in **Table 1**, were an order-of-magnitude below risk reduction standards developed by EPD for residential (most conservative) scenarios and two orders-of-magnitude below soil standards for industrial settings (actual site conditions). Similarly, these PAH concentrations were below soil screening levels used by EPA at RCRA and CERCLA sites. Sediment remediation is therefore not considered because the PAH concentrations present no threat to human health. Petroleum hydrocarbon concentrations in surface water and the one sediment sample are provided on **Figure 8**. **Table 4** lists petroleum constituents and concentrations identified in sediment samples. Analytical data is provided in **Appendix B**.

Free Product

M&E identified separate phase hydrocarbons (SPH) in one monitoring well during the CAP- Part A investigation. Approximately 1.3 feet of SPH was identified in MW08, located on the northwest side of the former Northern Fuel Battery. No other wells installed during the CAP Part-A investigation contained SPH. M&E has operated a belt skimming SPH recovery system in MW08 since March 1996. Approximately 375 gallons of SPH (as of August 1997) have been recovered by continuously operating the automated belt skimmer system. Product recovery operations will continue at MW08 until product recovery volumes approach zero and/or less than 1/8 of an inch.

Separate phase hydrocarbons were identified on March 31, 1997 in wells MW59 and MW62 at thicknesses of 0.15 foot and 0.81 foot, respectively. These wells were installed during the CAP-Part B investigation to define the extent of SPH in proximity to MW08. Based on the locations of these monitoring wells and surrounding shallow monitoring wells, the SPH appears to be confined to the northwest corner of the former Northern Fuel Battery. No other monitoring wells installed during the CAP-Part B investigation contained SPH. Petroleum absorbent socks were inserted into the wells to begin removing free product in May, 1997. Each sock is replaced on a monthly basis. The spent socks are containerized in DOT-approved 55-gallon drums until proper disposal is arranged. Currently, all recovered free product is being recycled by Industrial Waste Services, Inc. of Jacksonville, Florida.

SECTION II.B. Local and Site Hydrogeology

Local Groundwater Conditions

Two potable water supply wells have been identified within a 0.5-mile radius of the site. Fourteen potable wells were identified within a 2-mile radius. **Figure 9** illustrates the locations of potable wells within 2 miles of the site. Although the former Building 728 site is located in the high or average groundwater pollution susceptibility area, all wells in use within the 2-mile radius are screened at a minimum depth of 146 feet bls, and they are hydraulically separated from the shallow aquifer by several interbedded clay layers at depth. The closest of these public wells (Hunter 1) is located approximately 350 feet south (upgradient) of former Building 728 and is cased to a depth of 259 feet bls. Information on the location of potable wells identified during M&E's well survey is provided in **Table 5**. Documented reports of investigations conducted throughout the coastal plain area on groundwater resources indicate three major aquifers exist in the study area: the shallow aquifer, Brunswick aquifer, and the upper and lower Floridan aquifers (Clarke et al, 1990). Separating the shallow aquifer from the deeper aquifers are two confining units. The upper confining unit, Miocene unit A, ranges in thickness from about 20 feet to 90 feet with a vertical hydraulic conductivity of 5.3×10^{-5} to 1.3×10^{-4} feet/day (Clarke et al, 1990). The Miocene A unit is encountered approximately 60 feet bls. The lower confining unit, Miocene unit B, ranges in thickness from about 10 feet to 50 feet with a vertical hydraulic conductivity of 6.7×10^{-5} feet/day to 1.3×10^{-2} feet/day (Clarke et al, 1990). This unit lies directly beneath the Miocene A unit in the Savannah area.

The nearest private residential area, Staley Heights, is located approximately 0.36 miles north of former Building 728, across Lynes Parkway. A drive-by visual survey of the Staley Heights residential area conducted by M&E on December 20, 1995 indicated no private potable wells are present. Moreover, potable water is supplied to this area by the City of Savannah municipal water system.

Local Geology

The local geology has been documented by the installation of 26 monitoring wells around the former Building 728 area and nearby subsurface investigations at other UST sites. Depth of drilling was generally 14 to 15 feet bls with two deeper borings continuing to a depth of 40 to 42 feet bls.

The lithology encountered was predominantly a dark gray to dark brown, very fine to medium grained sand, with variable silt and clay content. Generally, the samples with higher silt and clay content were within a few feet of the surface. Less silt and clay content was noted with depth. At a depth of about 33 feet, grain size increases from fine to coarse grained sand and broken shells were noted at 38 feet. An area of higher fines and organics contents was noted to exist toward the southeast portion of the site. Soil samples were collected from each monitoring well location **(Figure 2)** for grain size distribution, liquid limit, and plasticity index analyses. Approximately 92 percent of the samples contained less than 21 percent fines which prevented Atterburg limits testing. Moisture content averaged about 27.9 percent but ranged from 13.4 to 75.7 percent. In addition, three shelby tube samples (undisturbed soil) were collected for further geotechnical analyses including falling head permeability, effective porosity, grain size analysis with hydrometer, liquid and plastic limits, and moisture content. The results of these analyses are discussed later in this section. Geotechnical data is presented in **Appendix D**. **Figure 2** illustrates cross-section locations and **Figure 10** and **Figure 11** show cross sections A-A' and B-B', respectively, across the former Building 728 site.

All monitoring wells (new and existing except MW08) were gauged on March 31, 1997. Groundwater in the study area is under water table conditions and is encountered between 3.02 to 7.05 feet bls, averaging 5.04 feet bls. **Table 6** lists screen intervals, water levels, and elevation information for all wells used in this investigation. **Figure 12** shows the potentiometric surface at the site. Groundwater flow is to the northwest with an approximate gradient of 0.006.

Calculations of Relevant Aquifer Parameters

A total of three shelby tube samples were collected during the CAP-Part B investigation. Eight slug tests (slug-out) were also performed. The shelby tube samples were collected from monitoring well borings MW58 (10-12ft), MW59 (2-4ft) and MW67 (6-8 ft). The results of the shelby tube analysis are presented in **Appendix D**. The analyses indicate the hydraulic conductivities (K) of the samples range from 2.30 x 10^{-7} feet/sec to 1.74 x 10^{-4} feet/sec. The average K of the two shelby tube samples collected within the saturated zone was 1.15 x 10^{-4} feet/sec; typical of medium-grained sand.

Slug tests were conducted on six shallow monitoring wells (MW55, 56, 57, 63, 64, and 65) and two deep monitoring wells (MW66 and MW67). The Hvorslev slug test method was used to calculate the formation hydraulic conductivity. The following equation was used:

$$K = \frac{r^2 \ln(L_e / R)}{2L_e T_o}$$

(Fetter, 1994)

where:

K = hydraulic conductivity (feet/sec)

r = radius of well casing (feet)

R = radius of the borehole (feet)

L_e = length of saturated well screen (feet)

T_o = time for the water level to rise or fall to 37 percent of the initial change (sec)

The average hydraulic conductivity calculated for the shallow monitoring wells is 5.48×10^{-4} feet/sec and the average hydraulic conductivity calculated for the deep monitoring wells is 7.55×10^{-5} feet/sec. The aquifer analysis calculations are provided in **Appendix D**.

Seepage velocity across the former Building 728 site can be calculated by using the following equation:

$$V_x = -\frac{Ki}{n_e}$$

(Fetter, 1994)

where:

V_x = average linear velocity or seepage velocity (feet/sec)

K = hydraulic conductivity (feet/sec)

i = hydraulic gradient (feet)

n_e = effective porosity

The average seepage velocity calculated for the shallow and deep monitoring wells is 8.5×10^{-6} feet/sec and 2.5×10^{-6} feet/sec, respectively. Calculations for seepage velocity are also provided in **Appendix D**.

SECTION III.A. Corrective Action Completed or In-Progress

Recovery/Removal of Free Product

Free product recovery was initiated in March 1996 from monitoring well MW08 at the former Building 728 site. An automated belt skimmer device continues to be used to recover free product. The device removes product from the well by continuously rotating a belt of hydrocarbon absorbent material through the product layer in the well and extracting the absorbed product from the belt at the surface. The recovered fuel flows by gravity to a temporary above ground storage vessel. The skimmer operates on a timed cycle which allows the system to shutdown to allow free product to accumulate in MW08. After approximately 90 minutes, the belt skimmer begins a recovery cycle. The recovery cycle operates approximately 90 minutes before shutting down again. As of August 1997, approximately 375 gallons of free product had been recovered. The recovered fuel is stored in a 270 gallon above ground tank until disposal is arranged. The product is periodically removed by Industrial Water Services for recycling. A manifest documenting the proper disposal of recovered free product transported off site is provided in **Appendix E**.

Adsorbent socks are also utilized for the product recovery from MW59 and MW62. Recovery efforts began in May, 1997 and the socks are changed monthly. Disposal of the spent socks is arranged by HAAF personnel.

Remedial/Treatment of Contaminated Backfill Material & Native Soils

M&E reported in the CAP-Part A that a total of 2,623.91 tons of contaminated soil was removed, transported, and incinerated as part of the June 1994 tank removal exercise at the former Northern Fuel Battery and Building 728. No other soil remedial activities have been performed since that time.

SECTION III.B. Objectives of Corrective Action

The objectives of corrective action at this site are to remediate petroleum hydrocarbons that exist in the subsurface at concentrations which pose a potential threat to human health and the environment. The first step in evaluating a compound's potential threat significance is to compare the concentrations of that chemical to existing soil threshold levels, MCLs, IWQS, or other applicable standards. This evaluation is coupled with the assessment of potentially affected populations or habitats/wildlife. Some State regulations, such as the need for free product removal to less than one-eighth of an inch, require compliance regardless of the presence (or lack thereof) of potential receptors.

M&E conducted an evaluation of the surrounding land use, groundwater use, and sensitive receptors during the CAP-Part A stage of this investigation. The results of that investigation, summarized in section II.D.4 of the CAP-Part A, indicated that no human receptors to groundwater contamination were identified within a two mile radius of the site. This finding is further supported by additional geologic data collected during the CAP-Part B investigation which indicates two confining zones separate the shallow aquifer from deeper potable water-producing zones of the Floridan Aquifer. In addition, no contamination was identified in water samples collected from the two on-site deep wells which are screened approximately 35 feet bls.

A Potential Receptor Survey (PRS), conducted in accordance with the EPD CAP-Part B Guidance Document, Appendix I, was completed by M&E as part of this investigation. The survey included identifying potential receptors such as public and private wells, surface water/drainage pathways, underground utilities, and basements in adjacent buildings. In addition, consideration was given to future site use and any associated potential receptors. The PRS indicated that the only likely potential point of human exposure is the open drainage ditch located 300 feet northwest of the former Northern Fuel Battery. The man-made surface water drainage feature eventually empties into Springfield Canal which flows southwest and joins the Little Ogeechee River more than 3 miles downstream of the site. Interviews with HAAF personnel indicate the open drainage ditch is not used by Base personnel for any recreational purposes.

Therefore, the potential for human exposure to water in the ditch is remote. A visual survey of the site and adjacent areas indicate that no buildings exist within the documented contamination plume thereby making the potential for human exposure to hydrocarbon vapors unlikely. The former Building 728 area has been completely razed except for the railroad tracks and rail bed.

M&E evaluated several remedial alternatives for feasibility and cost-effectiveness. The focus of the remedial evaluation was to:

1. Remove free product to thicknesses less than one-eighth of an inch,
2. Remediate soil containing hydrocarbons at concentrations greater than State STLs.
3. Protect surface water from being adversely impacted by groundwater and meet Georgia IWQS.

The following sections provide a detailed discussion of applicable remedial technologies, by media type, and their associated selection rationale.

Remove Free Product that Exceeds One-Eighth Inch

M&E will continue to operate the product recovery system at MW08 and change adsorbent socks at MW59 and MW62 until the proposed remedial system is installed or free product thickness is less than one-eighth inch. The recommended remedial method will be capable of removing free product from areas identified as having a measurable thicknesses of SPH during this investigation. The product recovery technologies considered for this site are discussed below.

Free product remedial technologies considered for this site range from simple absorption using passive bailers/absorbent socks, to active, automated dual fluid (water and product) pumping systems. The conditions at the site lend themselves to a great number of remedial options over a wide range of costs. Several of the most applicable options are presented in **Table** 7.

One of the most effective remedial technologies for removing product at this site is the groundwater extraction and recovery option (pump and treat) outlined in **Table** 7. This technology allows rapid removal of both product and contaminated groundwater. The active nature of this type of recovery will accelerate product collection as compared with passive options (which create no hydraulic capture zone) and shorten the overall operational lifetime of the remediation system. However, this method would create a cone of depression in the groundwater table that would "smear" the floating product over a vertical column of soil thereby decreasing liquid product recovery. Moreover, the pump and treat technology generates a great deal of water which requires costly treatment prior to discharge. M&E therefore proposes a more selective free product scavenging system that concentrates product recovery with only minor extraction of groundwater.

The lithology, being porous and containing limited organic material, is conducive to product transport under the subtle influence of a total fluids recovery system. In addition, a large number of recovery wells will not be required because the product plume is relatively compact. Additional hydraulic control of the product plume will be achieved by installing vapor extraction wells upgradient of the product plume which will increase the hydraulic gradient toward the product recovery wells.

The proposed product recovery system for former Building 728 is a "total fluids" system where both groundwater and product will be containerized together in an above ground tank. The minimal volume of product identified at the site, estimated to be less than 1000 gallons, could be combined with recovered groundwater for economical off-site recovery/ disposal. M&E anticipates that between 8,000 and 20,000 gallons of product and contaminated groundwater will be removed by the system before product recovery is complete. The cost associated with the temporary storage of fluids, transportation, and recycling at an approved petroleum recycling company (approximately $16,000) is less than the cost of on-site separation of fluids and groundwater treatment. Total fluids recovery equipment is also inherently more simple, less expensive, and easier to maintain. Details on the conceptual design of the pumping and recovery system are provided in Section III.C.

Remediate Groundwater Contamination That Exceeds Maximum Contaminant Levels (MCLs)

M&E evaluated treatment technologies to meet groundwater MCLs for hydrocarbons. The main focus of the groundwater treatment system will be to reduce contaminant concentrations to levels that protect the surface water quality in the nearby drainage ditch. The remediation system will be designed to treat groundwater to acceptable levels prior to reaching the drainage ditch.

Several groundwater remedial technologies were reviewed for applicability to former Building 728. A number of groundwater treatment remedial methods could be employed at this site because of the relatively shallow, permeable, unconfined nature of the groundwater plume. **Table 8** presents a brief summary of applicable groundwater remedial technologies. Advantages and disadvantages of each system are presented in the table.

The Georgia IWQS for benzene (71.28 ppb) was exceeded at five groundwater monitoring well locations. Concentrations of benzene exceeded the MCL of 5 ppb at 10 wells. Several PAH compounds were also identified in groundwater above their respective IWQS of 0.031 µg/l.

However, no contaminants were identified in surface water samples from the nearby drainage ditch above IWQS. A risk of exposure assessment, discussed in preceding paragraphs, identified no contaminant receptors downgradient of the study area.

Benzene is the primary target compound for remediation at this site. Again, remediation will be performed to preserve the existing water quality in the nearby drainage ditch. M&E recommends that an air sparging system be constructed between the plume and the buried drainage culvert/ open drainage ditch. This remedial technology would effectively meet the objectives for groundwater remediation by:

- increasing the dissolved oxygen available to naturally-occurring microbes which metabolize hydrocarbons,

- introducing air into the groundwater which would increase contaminant volatilization, and
- assist in slowing the migration of contaminated groundwater toward the ditch because of the small mound created by rising air from the sparge system.

Details of the proposed sparging system design are provided in Section III. C.

Remediate Soil Contamination That Exceeds Threshold Values Listed in Table A

Soil containing residual product and elevated concentrations of hydrocarbons is a continuing source of groundwater contamination at former Building 728. Rainwater percolating through shallow, unconfined soil can leach hydrocarbon contaminants and contribute to the groundwater contamination plume. The objectives of the soil remediation system will be to reduce levels of petroleum hydrocarbons in soils associated with the product plume to below Table A threshold values listed in Georgia Rule 391-3-15.

Analytical results indicate the laboratory detection limit for 42 of 44 soil samples exceeded the benzene criteria established in Table A of 391-3-15.09 due to matrix interferences, making it difficult to determine the actual concentration of benzene in the sample and whether or not benzene was present above the STL. Many of the analytical results were, however, close to the STL. Thus, a qualitative interpretation of the contaminant zone was performed. The extent of contamination in soil was estimated, and three general areas of soil contamination were defined. These areas were discussed in previous sections of this CAP-Part B.

A number of treatment technologies were considered to remove hydrocarbons from soil to acceptable levels listed in Georgia Rule (STLs). The conditions at the site lend themselves to a great number of remedial options over a wide range of costs. Among the technologies evaluated, soil excavation, soil vapor extraction, in-situ enhanced biologic reaction, and passive soil remediation were considered to be the most feasible alternatives. Several of the most applicable options are presented in **Table 9**.

The total fluids recovery system designed for removing product and contaminated groundwater will effectively reduce the volume of soil containing higher concentrations of hydrocarbons near the water table. However, potentially significant quantities of residual hydrocarbons will remain in the soil column both above and below the water table. Left in place, these hydrocarbons will eventually leach into the groundwater through rainwater percolation and contribute to the dissolved petroleum plume.

Operating a soil vapor extraction system in conjunction with the total fluids recovery system will assist both active contaminant recovery (fluid removal) and natural biodegradation processes.

The total fluids recovery system will create several small depressions in the water table near recovery wells. A low vacuum soil vapor extraction system operating in the same area would remove volatile contaminants entrained in soil above the water table and from the small drawdown cones created by the total fluids system. Air drawn into the affected area by the soil vapor extraction system would also aid in naturally occurring biologic processes that depend on oxygen to metabolize hydrocarbons.

The soil vapor extraction system proposed in this CAP-Part B will be installed in close proximity to the total fluids recovery system; near MW08. This is the largest area of soil contamination identified during the SI. Details of the proposed system design are provided in Section III.C. of this CAP-Part B. Two smaller areas of soil contamination were identified upgradient of the MW08 area. These areas are located on the eastern fence boundary and in proximity to the former USTs at Building 728 (near the rail spur). **Figure 3** provides an illustration of the extent of petroleum hydrocarbons in soil. M&E anticipates that these two areas will have little impact on the most likely downgradient receptor (surface water drainage ditch) and therefore has proposed a natural attenuation remedial approach for residual contaminants. Analytical results presented in **Figure 4** indicate contamination in soil consists primarily of PAHs. Review of **Figure 5** indicates that concentrations of PAHs and BTEX are slightly elevated downgradient of the two smaller impacted soil areas. Contaminant concentrations in these two areas are, however, significantly below levels detected in downgradient wells, some of which contain SPH. Also, any contaminant that becomes mobile in groundwater will flow toward the active remediation system discussed in the CAP-Part B. Residual concentrations remaining in subsurface soil does not pose a threat to human health or the environment because no completed pathway for exposure exists. Therefore, natural attenuation is recommended in these two small areas impacted by petroleum hydrocarbons.

SECTION III.C. Design and Operation of Corrective Action Systems

The following conceptual corrective action system design is provided to remediate soil and groundwater in accordance with objectives outlined in Section III.B of this CAP Part-B. The remedial systems should be capable of meeting the objectives for product recovery, groundwater treatment, and soil treatment.

Free Product Recovery

Free product and contaminated groundwater will be recovered using a total fluids recovery system deployed in the three existing wells that contain product. Three additional shallow (12' deep) wells will be installed to extend the product recovery system's influence over the affected area. Small suction lift pumps are recommended to remove product and contaminated groundwater from the wells. The system will operate continuously by using suction to lift the fluid from the water table to the recovery tank. Alternatively, the system will be capable of operating periodically by cycling between pumping and non-pumping periods as product thickness decreases in the wells. Intakes installed in each well will be placed approximately 0.25 feet below the static water table to create a constant gentle gradient toward the recovery well. Each intake pipe will be equipped with a foot valve to prevent recovered product and groundwater from flowing back into the well once it has been removed. Flexible hoses will be used to allow adjustment of the intake elevation to accommodate for different pumping requirements or changes in water table level. All piping will be installed in shallow burial chases (larger diameter poly-vinyl chloride "PVC" piping) because the site is vacant and the system is temporary. The outer piping will be pitched back to the well for drainage purposes. An illustration of the proposed layout to the system is provided in **Figure 13**.

All recovered fluids will be stored in a 2000 gallon above ground tank equipped with a tank full sensor. The sensor will be capable of disrupting power to the recovery system when fluid levels in the tank reach 90% of total capacity. The sensor will also trigger a visual indicator (flashing light) indicating the system has been shut down.

Groundwater Treatment System

The groundwater treatment system will be comprised of nine air sparging wells oriented in an east-west lateral directly south of the underground drainage culvert. The culvert is located to the north of the former Northern Fuel Battery. The east-west orientation of the air sparging line was selected to create an oxygenation zone between the suspected source area and the drainage ditch. The proposed layout of the air sparging system is provided on **Figure 13**. The wells will be installed on 30- foot centers along the east-west air supply lateral. This spacing allows for a 15 foot radius cone of diffusion for each well. The air sparging wells will be installed to a total depth of 30 feet bls. Each well will be equipped with 5 feet of 0.010-inch slotted screen and will be constructed in essentially the same manner as the deep wells installed during the CAP-Part B investigation. Field pilot testing and air diffusion calculations will be performed prior to system design to assure that the proper spacing is used to maximize treatment area and minimize costs associated with well installation and system operation.

Soil Treatment System

A soil vapor recovery system will be installed in proximity to the product plume. Seven soil vapor extraction (SVE) wells are proposed to remove volatile hydrocarbons from the subsurface and draw clean air into the soil column to stimulate natural biodegradation processes. The layout of the proposed system is provided in **Figure 13**. The SVE well spacing was selected to establish a perimeter around the south, east, and west borders of contaminated soil. Field SVE tests will also be performed prior to finalizing the design to confirm adequate coverage by the SVE system. Each extraction well will extend approximately 5 feet below land surface and will be constructed with a 1- foot section of 2-inch diameter, 0.010-inch slotted PVC screen. The remainder of the well will be constructed of solid PVC. A 2-foot thick seal of hydrated bentonite pellets will be placed above the screen section. Bentonite grout will then be used to complete the well to grade.

A 2-inch diameter PVC pipe lateral will connect all the vent wells to the blower. Valves will be installed at each well so the extraction vacuum can be adjusted to optimize product recovery and soil treatment. A vacuum blower capable of producing adequate vacuum (water) and flow rates will be connected to the lateral. Again, field testing will be performed to develop performance criteria for the blower. The blower will be installed in a treatment compound near the product recovery equipment (**Figure 13**). The soil vapor extraction system will be equipped with a condensation trap to remove excess moisture from the air stream prior to passing through the blower. The proposed system will discharge vapor directly to the air through a 12 foot tall stand pipe. Verification of system discharge concentrations will be performed following SVE field testing. Post treatment may be required if direct discharge is not acceptable to state and local authorities.

SECTION III.D. Implementation

Milestone Schedule

M&E has prepared a remedial system implementation schedule for the product recovery, contaminated soil, and air sparging systems. A Gantt chart showing milestone activities and anticipated durations is provided in **Figure 14**.

Inspection and Preventative Maintenance Schedule

Preventative maintenance required for the product recovery, soil vapor extraction, and air sparging systems will be performed in accordance with the maintenance schedule provided on the Gantt chart. M&E anticipates conducting initial startup tests and system calibration directly following the completion of system installation. Weekly site visits will be conducted for the first month of operation. The visitation schedule will be reduced to monthly following the first month of operation. Selected personnel from HAAF will also be trained on system operation and adjustment procedures so that more frequent visits can be easily conducted if required.

The systems will be operated in accordance with manufacturers specifications. Anticipated system adjustments/ servicing include:

- coordinating the removal of recovered product by a licensed waste hauler
- adjusting the intake levels in the product recovery wells to minimize groundwater withdrawal
- adjusting the influent air flow rate to the air sparging system to maximize dissolved oxygen concentrations in groundwater
- checking system voltages for proper operation

- inspecting all piping for evidence of any leaks

Monitoring/Sampling and Reporting Plan

Eight groundwater monitoring wells will be tested on a quarterly basis to assess the impact of the air sparging system on concentrations of hydrocarbons in groundwater. Dissolved oxygen levels will be field analyzed at each well to determine if a correlation can be made between contaminant concentrations and oxygen levels. In addition, methane and carbon dioxide readings will be obtained from each location to check for evidence of biodegradation. The wells proposed for the quarterly sampling program include one upgradient well (MW01), six sparge area wells (MW06, MW11, MW60, MW61, MW63, and MW64), and one downgradient well (MW65). In addition, one surface water sample will be collected from the open drainage ditch during each quarterly visit. This sample will be collected in proximity to the SWE03 sampling location used during the CAP-Part B investigation.

An effluent soil vapor extraction system sample will be collected monthly for the first quarter of operation then quarterly thereafter. The sample will be analyzed for BTEX and PAH components and total petroleum hydrocarbons to determine the removal rate of contaminants in soil vapor. Quarterly results of soil vapor samples will be graphed over time to determine the effectiveness of the system and to estimate total mass removal.

The monitoring data will be validated and submitted to the EPD for review quarterly. Figures and tables will be used where appropriate to illustrate trends in data. A summary of estimated system effectiveness will be provided in each quarterly report.

Closure Plan

The remediation system will no longer be needed once the objectives of corrective action have been achieved. The quarterly monitoring is scheduled to last for a two year period at which time the remedial system's effectiveness will be reviewed. The removal of all measurable product is a primary remediation goal. Direct measurement of product in the recovery wells and review of product recovery rates over time will determine if the remedial goal has been reached. Ten soil samples will be collected upon system installation and annually thereafter from areas where soil contamination was confirmed prior to initiating remedial activities to evaluate the effects of the system on hydrocarbon concentrations. A total of six soil boring locations will be selected from within the soil vapor extraction area. Additional confirmation samples will be collected from two soil boring locations at each of the two smaller areas of soil contamination. Two samples will be collected from each boring location. Each sample will be collected from the same depth as those collected during the CAP-Part B investigation. Laboratory analysis will be performed for BTEX and PAH compounds following EPA methods 8020 and 8100. The analytical results will be compared to previous analyses and Georgia STLs to evaluate the effects of both active recovery and natural attenuation of contaminants in these areas. Soil remediation will be considered complete where concentrations of contaminants are within STL values, below background concentrations, or have reached the asymptotic limits of practical removal.

Groundwater samples will be collected from eight of the onsite wells on a quarterly basis. Analytical results of these samples will be compared to applicable remedial criteria to evaluate the effectiveness of the remedial system. Specific remedial goals for each contaminant of concern in groundwater are provided in **Table 10**.

Concentration reductions of PAH components in groundwater samples to within one order of magnitude of the remedial goal will be considered satisfactory for the protection of surface water.

Concentrations of benzene in groundwater must be at or below the remedial goal prior to terminating the operation of the remedial system. However, if four successive quarters of data indicate that groundwater concentrations are approaching an asymptotic limit, alternate remedial goals may be proposed to the State.

SECTION IV Public Notice

The site is located within the boundaries of HAAF, with the closest property boundary being 0.28 mile away. Although no private property is contiguous in the area, public notification of the Corrective Action Plan will be provided by Ft. Stewart Environmental Branch personnel. A copy of the public notice published in *The Savannah Morning News* concurrently with the submittal of this document is provided in **Appendix F**.

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TABLES

TABLE 1

SUMMARY OF CONSTITUENTS DETECTED IN SOIL SAMPLES
CAP PART-B FORMER BUILDING 728, HUNTER ARMY AIRFIELD

SITE:	SOIL	HA135	HA136	HA137	HA138	HA138	HA139
SAMPLE ID:	THRESHOLD	HA13501	HA13601	HA13701	HA13801	HA16001	HA13901
DATE:	LEVELS [1]	3/4/97	3/4/97	3/4/97	3/4/97	3/4/97	3/4/97
DEPTH (ft):		3.5	3.5	3.5	3.5	3.5	3.5
UNITS:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
						Duplicate	
CONSTITUENT:							
VOLATILE ORGANICS (8020)							
Benzene	**0.005**	< 0.032*	< 1.2 *	< 0.006 *	< 1.2 *	< 0.028 *	< 2.2 *
Ethylbenzene	**0.37**	0.32 J	[12 J]	< 0.006	[5.5 J]	[0.77 J]	[15 J]
Toluene	**0.4**	0.088 J	< 1.2 J *	< 0.006	< 1.2	0.17 J	[4.2 J]
Xylene (total)	**20**	0.032 J	1.6 J	< 0.006	3.1 J	0.62 J	6.8 J
PAH (8100)							
Acenaphthene	**NA**	< 0.42	< 0.40	< 0.40	1.70	< 0.76	< 0.38
Benzo(a)pyrene	**0.66 [a]**	< 0.42	< 0.40	< 0.40	[0.79]	[0.81]	< 0.38
Benzo(b,k)fluoranthene [2]	**0.66 [a]**	< 0.42	< 0.40	< 0.40	[1.2]	[1.1]	< 0.38
Benzo(ghi)perylene	-	< 0.42	< 0.40	< 0.40	< 0.76	< 0.76	< 0.38
Chrysene + Benzo(a)anthracene [2]	**0.66 / 0.66 [a]**	< 0.42	< 0.40	< 0.40	< 0.76 *	< 0.76 *	< 0.38
Fluoranthene	**NA**	< 0.42	< 0.40	< 0.40	2.80	2.60	< 0.38
Fluorene	**NA**	< 0.42	< 0.40	< 0.40	1.60	2.00	< 0.38
Indeno(1,2,3-cd)pyrene +Dibenzo(a,h)anthracene [2]	**0.66 / 0.66 [a]**	< 0.42	< 0.40	< 0.40	< 0.76 *	< 0.76 *	< 0.38
Naphthalene	**NA**	< 0.42	< 0.40	< 0.40	1.70	1.00	< 0.38
Phenanthrene + Anthracene [2]	**NA**	< 0.42	< 0.40	< 0.40	2.70	3.40	< 0.38
Pyrene	**NA**	< 0.42	< 0.40	< 0.40	2.40	2.30	< 0.38
1-Methylnaphthalene	-	< 0.42	< 0.40	< 0.40	1.50	0.91	< 0.38
2-Methylnaphthalene	-	< 0.42	< 0.40	< 0.40	4.00	2.60	0.51
PETROLEUM HYDROCARBONS (8015 M)							
GRO	-	61 J	360 J	< 0.21 J	310 J	140 J	920 J
DRO	-	13 J	13 J	37 J	400 J	490 J	86 J

J - Result is estimated; < - Less than laboratory reporting limits; [ ] - Concentration exceeds Soil Threshold Limit.

* - Detection limit exceeds soil threshold levels due to dilutions and/or matrix interference.

(1) SOIL THRESHOLD LEVELS- GA DNR, EPD Chapter 391-3-15-.09, UST Management, Tables A and B (< 500 feet to a withdrawal point and <500 feet to a surface water body, respectively).

(a) Estimated Quantitation limit; calculated health-based thresholds is less the laboratory detection limit.

(-) -Level is not listed   NA - Not Applicable; Health-based threshold level exceeds the expected soil concentration under free product conditions

(2) PAH compounds co-elute and can not be individually confirmed.

TABLE 1, continued

SUMMARY OF CONSTITUENTS DETECTED IN SOIL SAMPLES
CAP PART-B FORMER BUILDING 728, HUNTER ARMY AIRFIELD

SITE:	SOIL	HA140	HA141	HA142	HA143	HA144	HA145
SAMPLE ID:	THRESHOLD	HA14001	HA14101	HA14201	HA14301	HA14401	HA14501
DATE:	LEVELS [1]	3/4/97	3/4/97	3/4/97	3/4/97	3/4/97	3/4/97
DEPTH (ft):		3.5	3.5	3.5	3.5	3.5	3.5
UNITS:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
CONSTITUENT:							
VOLATILE ORGANICS (8020)							
Benzene	**0.005**	**< 0.0062 ***	**< 0.0061 ***	**[0.0058]**	**< 0.0062 ***	**< 0.66 ***	**< 0.0056 ***
Ethylbenzene	**0.37**	< 0.0062	< 0.0061	0.045 J	< 0.0062	**[13 J]**	0.085
Toluene	**0.4**	< 0.0062	< 0.0061	0.0074 J	< 0.0062	**< 0.66 ***	0.014
Xylene (total)	**20**	< 0.0062	< 0.0061	0.061 J	< 0.0062	**[36 J]**	0.038
PAH (8100)							
Acenaphthene	**NA**	< 0.41	< 0.40	0.81	< 0.41	< 0.43	< 0.37
Benzo(a)pyrene	**0.66 [a]**	< 0.41	< 0.40	**[2.8]**	< 0.41	< 0.43	< 0.37
Benzo(b,k)fluoranthene [2]	**0.66 [a]**	< 0.41	< 0.40	**[6.1]**	< 0.41	< 0.43	< 0.37
Benzo(ghi)perylene	**-**	< 0.41	< 0.40	1.4	< 0.41	< 0.43	< 0.37
Chrysene + Benzo(a)anthracene [2]	**0.66 / 0.66 [a]**	< 0.41	< 0.40	**[5.0]**	< 0.41	0.47	< 0.37
Fluoranthene	**NA**	< 0.41	< 0.40	7.2	< 0.41	0.75	0.71
Fluorene	**NA**	< 0.41	< 0.40	0.79	< 0.41	< 0.43	< 0.37
Indeno(1,2,3-cd)pyrene +Dibenzo(a,h)anthracene [2]	**0.66 / 0.66 [a]**	< 0.41	< 0.40	**[2.8]**	< 0.41	< 0.43	< 0.37
Naphthalene	**NA**	< 0.41	< 0.40	< 0.38	< 0.41	< 0.43	< 0.37
Phenanthrene + Anthracene [2]	**NA**	< 0.41	< 0.40	4.9	< 0.41	0.87	< 0.37
Pyrene	**NA**	< 0.41	< 0.40	6	< 0.41	0.57	0.69
1-Methylnaphthalene	**-**	< 0.41	< 0.40	< 0.38	< 0.41	< 0.43	< 0.37
2-Methylnaphthalene	**-**	< 0.41	< 0.40	0.39	< 0.41	0.82	< 0.37
PETROLEUM HYDROCARBONS (8015 M)							
GRO	**-**	< 0.22 J	< 0.22 J	2.6 J	< 0.22 J	410 J	2.1 J
DRO	**-**	< 12 J	< 12 J	87 J	< 12 J	56 J	< 11 J

J - Result is estimated   < - Less than laboratory reporting limits   [ ] - Concentration exceeds Soil Threshold Limit

* - Detection limit exceeds soil threshold levels due to dilutions and/or matrix interference.

(1) SOIL THRESHOLD LEVELS- GA DNR, EPD Chapter 391-3-15-.09, UST Management, Tables A and B (< 500 feet to a withdrawal point and <500 feet to a surface water body, respectively).

(a) Estimated Quantitation Limit; calculated health-based thresholds is less the laboratory detection limit.

(-) -Level is not listed   NA - Not Applicable; Health-based threshold level exceeds the expected soil concentration under free product conditions

(2) PAH compounds co-elute and can not be individually confirmed.

TABLE 1, continued

SUMMARY OF CONSTITUENTS DETECTED IN SOIL SAMPLES
CAP PART-B FORMER BUILDING 728, HUNTER ARMY AIRFIELD

SITE:	SOIL	HA146	HA147	HA148	MW55	MW55	MW56
SAMPLE ID:	THRESHOLD	HA14601	HA14701	HA14801	WB5501	WB5502	WB5601
DATE:	LEVELS [1]	3/4/97	3/4/97	3/4/97	2/24/97	2/24/97	2/24/97
DEPTH (ft):		3.5	3.5	3.5	4	10	4
UNITS:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
CONSTITUENT:							
VOLATILE ORGANICS (8020)							
Benzene	**0.005**	**< 0.0056 ***	**< 0.0058 ***	**< 0.006 ***	**< 0.29 ***	**< 0.0062 ***	**< 0.021 ***
Ethylbenzene	**0.37**	< 0.0056	< 0.0058	< 0.006	**[12 J]**	< 0.0062	**[1.9]**
Toluene	**0.4**	< 0.0056	< 0.0058	< 0.006	**< 6.0**	< 0.0062	**< 0.44 ***
Xylene (total)	**20**	< 0.0056	< 0.0058	< 0.006	15 J	< 0.0062	1.2
PAH (8100)							
Acenaphthene	**NA**	< 0.38	< 0.38	< 0.40	< 0.80	< 0.41	< 1.8 J
Benzo(a)pyrene	**0.66 [a]**	< 0.38	< 0.38	< 0.40	**< 0.8 ***	< 0.41	**< 1.8 ***
Benzo(b,k)fluoranthene [2]	**0.66 [a]**	< 0.38	< 0.38	< 0.40	**< 0.8 ***	< 0.41	**< 1.8 ***
Benzo(ghi)perylene	-	< 0.38	< 0.38	< 0.40	< 0.80	< 0.41	< 1.8
Chrysene + Benzo(a)anthracene [2]	**0.66 / 0.66 [a]**	< 0.38	< 0.38	< 0.40	**< 0.8 ***	< 0.41	**< 1.8 ***
Fluoranthene	**NA**	< 0.38	< 0.38	< 0.40	< 0.80	< 0.41 J	< 1.8 J
Fluorene	**NA**	< 0.38	< 0.38	< 0.40	< 0.80	< 0.41 J	< 1.8
Indeno(1,2,3-cd)pyrene +Dibenzo(a,h)anthracene [2]	**0.66 / 0.66 [a]**	< 0.38	< 0.38	< 0.40	**< 0.8 ***	< 0.41	**< 1.8 ***
Naphthalene	**NA**	< 0.38	< 0.38	< 0.40	< 0.80	< 0.41	< 1.8
Phenanthrene + Anthracene [2]	**NA**	< 0.38	< 0.38	< 0.40	< 0.80	< 0.41 J	2 J
Pyrene	**NA**	< 0.38	< 0.38	< 0.40	< 0.8 J	< 0.41 J	< 1.8
1-Methylnaphthalene	-	< 0.38	< 0.38	< 0.40	< 0.8 J	< 0.41	< 1.8 J
2-Methylnaphthalene	-	< 0.38	< 0.38	< 0.40	1 J	< 0.41	2 J
PETROLEUM HYDROCARBONS (8015 M)							
GRO	-	< 0.2 J	< 0.21 J	< 0.21 J	1200 J	< 0.22	78 J
DRO	-	12 J	< 12 J	< 12 J	230 J	< 12	330 J

J - Result is estimated < - Less than laboratory reporting limits [ ] - Concentration exceeds Soil Threshold Limit

* - Detection limit exceeds soil threshold levels due to dilutions and/or matrix interference.

(1) SOIL THRESHOLD LEVELS- GA DNR, EPD Chapter 391-3-15-.09, UST Management, Tables A and B (< 500 feet to a withdrawal point and <500 feet to a surface water body, respectively).

(a) Estimated Quantitation Limit; calculated health-based thresholds is less the laboratory detection limit.

(-) -Level is not listed NA - Not Applicable; Health-based threshold level exceeds the expected soil concentration under free product conditions

(2) PAH compounds co-elute and can not be individually confirmed.

TABLE 1, continued

SUMMARY OF CONSTITUENTS DETECTED IN SOIL SAMPLES
CAP PART-B FORMER BUILDING 728, HUNTER ARMY AIRFIELD

SITE:	SOIL	MW56	MW57	MW57	MW57	MW58	MW58
SAMPLE ID:	THRESHOLD	WB5602	WB5701	WB8001	WB5702	WB5801	WB5802
DATE:	LEVELS [1]	2/24/97	2/25/97	2/25/97	2/25/97	2/25/97	2/25/97
DEPTH (ft):		10	4	4	10	6	10
UNITS:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				Duplicate			
CONSTITUENT:							
VOLATILE ORGANICS (8020)							
Benzene	**0.005**	**< 0.056 ***	**< 0.006 ***	**< 0.0058 ***	**< 0.0064 ***	**< 6.2 ***	**< 0.0064 ***
Ethylbenzene	**0.37**	[2]	< 0.006	< 0.0058	< 0.0064	[31 J]	< 0.0064
Toluene	**0.4**	**< 1.2 ***	< 0.006	< 0.0058	< 0.0064	**< 6.2 ***	< 0.0064
Xylene (total)	**20**	1.5	< 0.006	< 0.0058	0.02	6.8 J	< 0.0064
PAH (8100)							
Acenaphthene	**NA**	5.5 J	< 0.39	< 0.38	< 0.42	< 0.40	< 0.42
Benzo(a)pyrene	**0.66 [a]**	[10 J]	< 0.39	< 0.38	< 0.42	< 0.40	< 0.42
Benzo(b,k)fluoranthene [2]	**0.66 [a]**	[19 J]	< 0.39	< 0.38	< 0.42	< 0.40	< 0.42
Benzo(ghi)perylene	**-**	4.8 J	< 0.39	< 0.38	< 0.42	< 0.40	< 0.42
Chrysene + Benzo(a)anthracene [2]	**0.66 / 0.66 [a]**	[16 J]	< 0.39	< 0.38	< 0.42	< 0.40	< 0.42
Fluoranthene	**NA**	33 J	< 0.39	< 0.38	< 0.42	< 0.40	< 0.42
Fluorene	**NA**	8 J	< 0.39	< 0.38	< 0.42	< 0.40	< 0.42 J
Indeno(1,2,3-cd)pyrene +Dibenzo(a,h)anthracene [2]	**0.66 / 0.66 [a]**	[4.4 J]	< 0.39	< 0.38	< 0.42	< 0.40	< 0.42
Naphthalene	**NA**	< 3.8 J	< 0.39	< 0.38	< 0.42	< 0.4 J	< 0.42
Phenanthrene + Anthracene [2]	**NA**	48 J	< 0.39	< 0.38	< 0.42	< 0.40	< 0.42
Pyrene	**NA**	39 J	< 0.39 J	< 0.38 J	< 0.42 J	< 0.4 J	< 0.42 J
1-Methylnaphthalene	**-**	< 3.8 J	< 0.39	< 0.38	< 0.42	< 0.40	< 0.42
2-Methylnaphthalene	**-**	< 3.8 J	< 0.39	< 0.38	< 0.42	< 0.40	< 0.42
PETROLEUM HYDROCARBONS (8015 M)							
GRO	**-**	86	< 0.21 J	< 0.21 J	0.4 J	2000 J	0.27 J
DRO	**-**	280 J	< 12	< 12	< 12	15 J	17 J

J - Result is estimated < - Less than laboratory reporting limits [ ] - Concentration exceeds Soil Threshold Limit

* - Detection limit exceeds soil threshold levels due to dilutions and/or matrix interference.

(1) SOIL THRESHOLD LEVELS- GA DNR, EPD Chapter 391-3-15-.09, UST Management, Tables A and B (< 500 feet to a withdrawal point and <500 feet to a surface water body, respectively).

(a) Estimated Quantitation Limit; calculated health-based thresholds is less the laboratory detection limit.

(-) -Level is not listed NA - Not Applicable; Health-based threshold level exceeds the expected soil concentration under free product conditions

(2) PAH compounds co-elute and can not be individually confirmed.

TABLE 1, continued

SUMMARY OF CONSTITUENTS DETECTED IN SOIL SAMPLES
CAP PART-B FORMER BUILDING 728, HUNTER ARMY AIRFIELD

SITE:	SOIL	MW59	MW59	MW60	MW60	MW60	MW61
SAMPLE ID:	THRESHOLD	WB5901	WB5902	WB6001	WB6002	WB8101	WB6101
DATE:	LEVELS [1]	2/26/97	2/26/97	2/26/97	2/26/97	2/26/97	2/26/97
DEPTH (ft):		6	10	2	15	15	6
UNITS:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg Duplicate	mg/kg
CONSTITUENT:							
VOLATILE ORGANICS (8020)							
Benzene	**0.005**	**< 60 ***	**< 0.0062 ***	**< 0.0058 ***	**< 0.007 ***	0.0036 J	**< 0.0066 ***
Ethylbenzene	**0.37**	[330 J]	0.01	< 0.0058	< 0.007	< 0.0066	< 0.0066
Toluene	**0.4**	[500 J]	0.013	< 0.0058	< 0.007	< 0.0066	< 0.0066
Xylene (total)	**20**	[1500 J]	0.016	< 0.0058	0.052	0.028	< 0.0066
PAH (8100)							
Acenaphthene	**NA**	4.8 J	< 0.41	< 0.38	< 0.46	< 0.43 J	< 0.44
Benzo(a)pyrene	**0.66 [a]**	**< 4.0 ***	< 0.41	< 0.38	< 0.46	< 0.43	< 0.44
Benzo(b,k)fluoranthene [2]	**0.66 [a]**	[9 J]	< 0.41	< 0.38	< 0.46	< 0.43	< 0.44
Benzo(ghi)perylene	**-**	< 4.0	< 0.41	< 0.38	< 0.46	< 0.43	< 0.44
Chrysene + Benzo(a)anthracene [2]	**0.66 / 0.66 [a]**	[7.2 J]	< 0.41	< 0.38	< 0.46	< 0.43	< 0.44
Fluoranthene	**NA**	20 J	< 0.41	< 0.38	< 0.46	< 0.43	< 0.44
Fluorene	**NA**	5.1 J	< 0.41 J	< 0.38 J	< 0.46	< 0.43	< 0.44
Indeno(1,2,3-cd)pyrene +Dibenzo(a,h)anthracene [2]	**0.66 / 0.66 [a]**	**< 4.0 ***	< 0.41	< 0.38	< 0.46	< 0.43	< 0.44
Naphthalene	**NA**	4.1 J	< 0.41	< 0.38	< 0.46	< 0.43	< 0.44
Phenanthrene + Anthracene [2]	**NA**	24 J	< 0.41	< 0.38	< 0.46	< 0.43	< 0.44
Pyrene	**NA**	14 J	< 0.41 J	< 0.38 J	< 0.46 J	< 0.43 J	< 0.44 J
1-Methylnaphthalene	**-**	4.1 J	< 0.41	< 0.38	< 0.46	< 0.43	< 0.44
2-Methylnaphthalene	**-**	12 J	< 0.41	< 0.38	< 0.46	< 0.43	< 0.44
PETROLEUM HYDROCARBONS (8015 M)							
GRO	**-**	10000 J	1.3 J	< 0.2 J	0.28 J	0.24 J	< 0.24 J
DRO	**-**	1800 J	< 12	18 J	< 14 J	< 13 J	< 13

J - Result is estimated   < - Less than laboratory reporting limits   [ ] - Concentration exceeds Soil Threshold Limit

* - Detection limit exceeds soil threshold levels due to dilutions and/or matrix interference.

(1) SOIL THRESHOLD LEVELS- GA DNR, EPD Chapter 391-3-15-.09, UST Management, Tables A and B (< 500 feet to a withdrawal point and <500 feet to a surface water body, respectively).

(a) Estimated Quantitation Limit; calculated health-based thresholds is less the laboratory detection limit.

(-) -Level is not listed   NA - Not Applicable; Health-based threshold level exceeds the expected soil concentration under free product conditions

(2) PAH compounds co-elute and can not be individually confirmed.

TABLE 1, continued

SUMMARY OF CONSTITUENTS DETECTED IN SOIL SAMPLES
CAP PART-B FORMER BUILDING 728, HUNTER ARMY AIRFIELD

SITE:	SOIL	MW61	MW62	MW62	MW63	MW63	MW64
SAMPLE ID:	THRESHOLD	WB6102	WB6201	WB6202	WB6301	WB6302	WB6401
DATE:	LEVELS [1]	2/26/97	2/27/97	2/27/97	2/26/97	2/26/97	2/27/97
DEPTH (ft):		15	6	15	2	15	4
UNITS:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
CONSTITUENT:							
VOLATILE ORGANICS (8020)							
Benzene	**0.005**	[0.005 J]	< 60 *	< 0.0061 *	< 0.0058 *	0.0036 J	< 0.0061 *
Ethylbenzene	**0.37**	< 0.0061	[1100 J]	0.05 J	< 0.0058	< 0.0066	< 0.0061
Toluene	**0.4**	< 0.0061	< 60 *	< 0.0061	< 0.0058	< 0.0066	< 0.0061
Xylene (total)	**20**	< 0.0061	[1300 J]	0.043 J	< 0.0058	< 0.0066	< 0.0061
PAH (8100)							
Acenaphthene	**NA**	< 0.40	13 J	< 0.40	< 0.38	< 0.43	< 0.40
Benzo(a)pyrene	**0.66 [a]**	< 0.40	< 7.8 *	< 0.40	< 0.38	< 0.43	< 0.40
Benzo(b,k)fluoranthene [2]	**0.66 [a]**	< 0.40	< 7.8 J *	< 0.40	< 0.38	< 0.43	< 0.40
Benzo(ghi)perylene	**-**	< 0.40	< 7.8	< 0.40	< 0.38	< 0.43	< 0.40
Chrysene + Benzo(a)anthracene [2]	**0.66 / 0.66 [a]**	< 0.40	[11 J]	< 0.40	< 0.38	< 0.43	< 0.40
Fluoranthene	**NA**	< 0.40	16 J	< 0.40	< 0.38	< 0.43	< 0.40
Fluorene	**NA**	< 0.40	< 7.8 J	< 0.40	< 0.38	< 0.43 J	< 0.40
Indeno(1,2,3-cd)pyrene +Dibenzo(a,h)anthracene [2]	**0.66 / 0.66 [a]**	< 0.40	< 7.8 *	< 0.40	< 0.38	< 0.43	< 0.40
Naphthalene	**NA**	< 0.40	15 J	< 0.40	< 0.38	< 0.43 J	< 0.40
Phenanthrene + Anthracene [2]	**NA**	< 0.40	16 J	< 0.40	< 0.38	< 0.43	< 0.40
Pyrene	**NA**	< 0.4 J	13 J	< 0.40	< 0.38 J	< 0.43 J	< 0.40
1-Methylnaphthalene	**-**	< 0.40	12 J	< 0.40	< 0.38	< 0.43	< 0.40
2-Methylnaphthalene	**-**	< 0.40	26 J	< 0.40	< 0.38	< 0.43	< 0.40
PETROLEUM HYDROCARBONS (8015 M)							
GRO	**-**	< 0.22 J	43000 J	2.2 J	< 0.2 J	0.3 J	< 0.22 J
DRO	**-**	< 12	5700 J	17	< 12	< 13	< 12

J - Result is estimated   < - Less than laboratory reporting limits   [ ] - Concentration exceeds Soil Threshold Limit

* - Detection limit exceeds soil threshold levels due to dilutions and/or matrix interference.

(1) SOIL THRESHOLD LEVELS- GA DNR, EPD Chapter 391-3-15-.09, UST Management, Tables A and B (< 500 feet to a withdrawal point and <500 feet to a surface water body, respectively).

(a) Estimated Quantitation Limit; calculated health-based thresholds is less the laboratory detection limit.

(-) -Level is not listed   NA - Not Applicable; Health-based threshold level exceeds the expected soil concentration under free product conditions

(2) PAH compounds co-elute and can not be individually confirmed.

TABLE 1, continued

SUMMARY OF CONSTITUENTS DETECTED IN SOIL SAMPLES
CAP PART-B FORMER BUILDING 728, HUNTER ARMY AIRFIELD

SITE:	SOIL	MW64	MW65	MW65	MW66	MW66	MW67
SAMPLE ID:	THRESHOLD	WB6402	WB6501	WB6502	WB6601	WB6602	WB6701
DATE:	LEVELS [1]	2/27/97	2/28/97	2/28/97	2/27/97	2/27/97	2/28/97
DEPTH (ft):		15	4	15	6	15	6
UNITS:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
CONSTITUENT:							
VOLATILE ORGANICS (8020)							
Benzene	**0.005**	**< 0.0062 ***	**< 0.0056 ***	**< 0.0066 ***	**< 0.006 ***	**< 0.0061 ***	**< 0.006 ***
Ethylbenzene	**0.37**	< 0.0062	< 0.0056	< 0.0066	< 0.006	< 0.0061	< 0.006
Toluene	**0.4**	< 0.0062	< 0.0056	< 0.0066	< 0.006	< 0.0061	< 0.006
Xylene (total)	**20**	< 0.0062	< 0.0056	< 0.0066	< 0.006	< 0.0061	< 0.006
PAH (8100)							
Acenaphthene	**NA**	< 0.41	< 0.38	< 0.43	< 0.40	< 0.40	< 0.39
Benzo(a)pyrene	**0.66 [a]**	< 0.41	< 0.38	< 0.43	< 0.40	< 0.40	< 0.39
Benzo(b,k)fluoranthene [2]	**0.66 [a]**	< 0.41	< 0.38	< 0.43	< 0.40	< 0.40	< 0.39
Benzo(ghi)perylene	**-**	< 0.41	< 0.38	< 0.43	< 0.40	< 0.40	< 0.39
Chrysene + Benzo(a)anthracene [2]	**0.66 / 0.66 [a]**	< 0.41	< 0.38	< 0.43	**[0.69]**	< 0.40	< 0.39
Fluoranthene	**NA**	< 0.41	< 0.38	< 0.43	< 0.40	< 0.40	< 0.39
Fluorene	**NA**	< 0.41	< 0.38	< 0.43	< 0.40	< 0.40	< 0.39
Indeno(1,2,3-cd)pyrene +Dibenzo(a,h)anthracene [2]	**0.66 / 0.66 [a]**	< 0.41	< 0.38	< 0.43	< 0.40	< 0.40	< 0.39
Naphthalene	**NA**	< 0.41	< 0.38	< 0.43	< 0.40	< 0.40	< 0.39
Phenanthrene + Anthracene [2]	**NA**	< 0.41	< 0.38	< 0.43	< 0.40	< 0.40	< 0.39
Pyrene	**NA**	< 0.41	< 0.38	< 0.43	< 0.40	< 0.40	< 0.39
1-Methylnaphthalene	**-**	< 0.41	< 0.38	< 0.43	< 0.40	< 0.40	< 0.39
2-Methylnaphthalene	**-**	< 0.41	< 0.38	< 0.43	< 0.40	< 0.40	< 0.39
PETROLEUM HYDROCARBONS (8015 M)							
GRO	-	< 0.22 J	< 0.2 J	< 0.23 J	< 0.21 J	< 0.22 J	< 0.21 J
DRO	-	< 12	< 11	< 13	< 12	< 12	< 12

J - Result is estimated   < - Less than laboratory reporting limits   [ ] - Concentration exceeds Soil Threshold Limit

* - Detection limit exceeds soil threshold levels due to dilutions and/or matrix interference.

(1) SOIL THRESHOLD LEVELS- GA DNR, EPD Chapter 391-3-15-.09, UST Management, Tables A and B (< 500 feet to a withdrawal point and <500 feet to a surface water body, respectively).

(a) Estimated Quantitation Limit; calculated health-based thresholds is less the laboratory detection limit.

(-) - Level is not listed   NA - Not Applicable; Health-based threshold level exceeds the expected soil concentration under free product conditions

(2) PAH compounds co-elute and can not be individually confirmed.

TABLE 1, continued

SUMMARY OF CONSTITUENTS DETECTED IN SOIL SAMPLES
CAP PART-B FORMER BUILDING 728, HUNTER ARMY AIRFIELD

SITE:	SOIL	MW67	MW67	SB149	SB149	SB149	SB150	SB150
SAMPLE ID:	THRESHOLD	WB8201	WB6702	SB14901	SB14902	SB16001	SB15001	SB15002
DATE:	LEVELS [1]	2/28/97	2/28/97	3/1/97	3/1/97	3/1/97	3/1/97	3/1/97
DEPTH (ft):		6	15	6	10	10	6	10
UNITS:	mg/kg	mg/kg	mg/kg Duplicate	mg/kg	mg/kg	mg/kg Duplicate	mg/kg	mg/kg
CONSTITUENT:								
VOLATILE ORGANICS (8020)								
Benzene	**0.005**	**< 0.006 ***	**< 0.0061 ***	**< 0.0063 ***	**< 0.49 ***	**< 0.5 ***	**< 1.2 ***	**< 0.48 ***
Ethylbenzene	**0.37**	< 0.006	< 0.0061	0.024	**< 0.49 ***	**[1]**	**[15 J]**	**< 0.48 ***
Toluene	**0.4**	< 0.006	< 0.0061	< 0.0063	**< 0.49 ***	**< 0.5 ***	**< 1.2 ***	**< 0.48 ***
Xylene (total)	**20**	< 0.006	< 0.0061	0.012	0.69	1.6	7.9 J	0.76
PAH (8100)								
Acenaphthene	**NA**	< 0.39	< 0.40	< 0.42	< 0.40	< 0.41	0.84	< 0.40
Benzo(a)pyrene	**0.66 [a]**	< 0.39	< 0.40	< 0.42	< 0.40	< 0.41	0.56	< 0.40
Benzo(b,k)fluoranthene [2]	**0.66 [a]**	< 0.39	< 0.40	< 0.42	**[0.73]**	0.46	**[1.5]**	0.47
Benzo(ghi)perylene	**-**	< 0.39	< 0.40	< 0.42	< 0.40	< 0.41	< 0.42	< 0.40
Chrysene + Benzo(a)anthracene [2]	**0.66 / 0.66 [a]**	< 0.39	< 0.40	< 0.42	0.47	**[0.75]**	**[0.96]**	**[0.83]**
Fluoranthene	**NA**	< 0.39	< 0.40	< 0.42	2.10	1.4	3.6	1.00
Fluorene	**NA**	< 0.39	< 0.40	< 0.42	0.81	0.6	1.1	0.53
Indeno(1,2,3-cd)pyrene +Dibenzo(a,h)anthracene [2]	**0.66 / 0.66 [a]**	< 0.39	< 0.40	< 0.42	< 0.40	< 0.41	< 0.42	< 0.40
Naphthalene	**NA**	< 0.39	< 0.40	< 0.42	< 0.40	< 0.41	< 0.42	< 0.40
Phenanthrene + Anthracene [2]	**NA**	< 0.39	< 0.40	< 0.42	< 0.40	< 0.41	4.9	< 0.40
Pyrene	**NA**	< 0.39	< 0.40	< 0.42	1.80	1.1	3	0.66
1-Methylnaphthalene	-	< 0.39	< 0.40	< 0.42	< 0.40	< 0.41	0.59	< 0.40
2-Methylnaphthalene	-	< 0.39	< 0.40	< 0.42	0.88	0.81	1.6	0.84
PETROLEUM HYDROCARBONS (8015 M)								
GRO	-	< 0.21 J	< 0.22 J	1.2 J	35 J	68 J	730 J	24
DRO	-	< 12	< 12	13	110	100	160	110

J - Result is estimated < - Less than laboratory reporting limits [ ] - Concentration exceeds Soil Threshold Limit

* - Detection limit exceeds soil threshold levels due to dilutions and/or matrix interference.

(1) SOIL THRESHOLD LEVELS- GA DNR, EPD Chapter 391-3-15-.09, UST Management, Tables A and B (< 500 feet to a withdrawal point and <500 feet to a surface water body, respectively).

(a) Estimated Quantitation Limit; calculated health-based thresholds is less the laboratory detection limit.

(-) -Level is not listed NA - Not Applicable; Health-based threshold level exceeds the expected soil concentration under free product conditions

(2) PAH compounds co-elute and can not be individually confirmed.

TABLE 2

SUMMARY OF CONSTITUENTS DETECTED IN GROUNDWATER SAMPLES
CAP PART-B FORMER BUILDING 728, HUNTER ARMY AIRFIELD

SITE:		MW01	MW02	MW03	MW03	MW05	MW06
SAMPLE ID:	EPA	MW0102	MW0202	MW0302	MW10002	MW0502	MW0602
DATE:	MCL [1]	3/31/97	3/31/97	3/31/97	3/31/97	3/31/97	4/1/97
UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
					Duplicate		
CONSTITUENT:							
VOLATILE ORGANICS (8020)							
Benzene	5	< 1	< 1	4.2	4.2	< 1	[24]
Ethyl benzene	700	< 1	< 1	5.3	4.9	< 1	54
Toluene	1,000	< 1	< 1	< 1	< 1	< 1	6.4
Xylene (total)	10,000	< 2	< 2	< 2	2.8	< 2	27
PAH (8310)							
Acenaphthene	-	< 1	< 1	< 1	< 1	< 1	5
Anthracene	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	1.1
Benzo(a)anthracene	-	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	0.26
Benzo(a)pyrene	0.2	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	0.13
Benzo(g,h,i)perylene	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b)fluoranthene	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)fluoranthene	-	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	0.051
Chrysene	-	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	0.26
Dibenzo(a,h)anthracene	-	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036
Fluoranthene	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.9
Fluorene	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	3.9
Indeno(1,2,3-cd)pyrene	-	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	0.035
Naphthalene	-	< 1	< 1	1.5	1.2	< 1	20
Phenanthrene	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	7
Pyrene	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2.7
1-Methylnaphthalene	-	< 1	< 1	1.1	< 1	< 1	14
2-Methylnaphthalene	-	< 1	< 1	< 1	< 1	< 1	5.2
RCRA METALS						NA	NA
Arsenic	50	[50.0 J]	25.0	6.1 J	9.8 J		
Barium	2000	380	770	340	380		
Cadmium	5	2.5 J	< 5 *	< 5 *	< 5 *		
Chromium	100	[110]	[200]	53	70		
Lead	15	[60]	[130]	[34]	[40]		
Mercury	2	0.11 J	0.52	0.26	0.25		
Selenium	50	4.8 J	[68 J]	< 50 J *	7.7 J		

(1) - USEPA Maximum Contaminant Level, Drinking Water Regulations and Health Advisories, October 1996
J - Result is estimated   < - Less than laboratory reporting limits   [ ] - Concentration exceeds MCL
(-) No MCL is listed   * - Detection limit exceeds MCL
NA - Not Analyzed

TABLE 2, continued

SUMMARY OF CONSTITUENTS DETECTED IN GROUNDWATER SAMPLES
CAP PART-B FORMER BUILDING 728, HUNTER ARMY AIRFIELD

SITE:		MW09	MW10	MW11	MW12	MW13	MW14
SAMPLE ID:	**EPA**	MW0902	MW1002	MW1102	MW1202	MW1302	MW1402
DATE:	**MCL [1]**	3/31/97	3/31/97	4/1/97	4/1/97	4/1/97	4/1/97
UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CONSTITUENT:							
VOLATILE ORGANICS (8020)							
Benzene	**5**	< 1	< 1	[1700]	[56J]	1.4	< 1
Ethyl benzene	**700**	< 1	< 1	380	40J	< 1	< 1
Toluene	**1,000**	< 1	< 1	600	28J	< 1	< 1
Xylene (total)	**10,000**	< 2	< 2	2300	< 50J	< 2	< 2
PAH (8310)							
Acenaphthene	-	< 1	< 1	< 1	< 1	< 1	< 1
Anthracene	-	< 0.2	< 0.2	< 0.2	0.31	< 0.2	< 0.2
Benzo(a)anthracene	-	< 0.031	< 0.031	< 0.031	0.12	< 0.031	< 0.031
Benzo(a)pyrene	**0.2**	< 0.031	< 0.031	< 0.031	0.11	< 0.031	< 0.031
Benzo(g,h,i)perylene	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b)fluoranthene	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)fluoranthene	-	< 0.031	< 0.031	< 0.031	0.032	< 0.031	< 0.031
Chrysene	-	< 0.031	< 0.031	< 0.031	0.22	< 0.031	< 0.031
Dibenzo(a,h)anthracene	-	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036
Fluoranthene	-	< 0.5	< 0.5	< 0.5	1.4	< 0.5	< 0.5
Fluorene	-	< 0.5	< 0.5	< 0.5	0.56	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	-	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031
Naphthalene	-	< 1	< 1	6.7	17J	1	< 1
Phenanthrene	-	< 0.2	< 0.2	< 0.2	1.5	< 0.2	< 0.2
Pyrene	-	< 0.5	< 0.5	< 0.5	1.2	< 0.5	< 0.5
1-Methylnaphthalene	-	< 1	< 1	< 1	5.8	< 1	< 1
2-Methylnaphthalene	-	< 1	< 1	1.7	4.9	< 1	< 1
RCRA METALS			NA	NA	NA	NA	NA
Arsenic	**50**	7.2 J					
Barium	**2000**	100					
Cadmium	**5**	< 5 *					
Chromium	**100**	2.4 J					
Lead	**15**	1.7 J					
Mercury	**2**	< 0.2 *					
Selenium	**50**	4.2 J					

(1) - USEPA Maximum Contaminant Level, Drinking Water Regulations and Health Advisories, October 1996
J - Result is estimated < - Less than laboratory reporting limits [ ] - Concentration exceeds MCL
(-) No MCL is listed * - Detection limit exceeds MCL
NA - Not Analyzed

TABLE 2, continued

SUMMARY OF CONSTITUENTS DETECTED IN GROUNDWATER SAMPLES
CAP PART-B FORMER BUILDING 728, HUNTER ARMY AIRFIELD

SITE:		MW55	MW56	MW57	MW58	MW60	MW61
SAMPLE ID:	**EPA**	MW5501	MW5601	MW5701	MW5801	MW6001	MW6101
DATE:	**MCL [1]**	3/31/97	3/31/97	3/31/97	3/31/97	4/1/97	4/1/97
UNITS:	**ug/L**	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CONSTITUENT:							
VOLATILE ORGANICS (8020)							
Benzene	**5**	< 1	[17]	[24]	[41J]	[1400]	[910J]
Ethyl benzene	**700**	< 1	9.1	40	16J	280	170J
Toluene	**1,000**	< 1	3.3	49	11J	290	< 25J
Xylene (total)	**10,000**	< 2	34	170	94J	1600	760J
PAH (8310)							
Acenaphthene	-	< 1	< 1	< 1	< 1	6.2	< 5
Anthracene	-	< 0.2	1.2	< 0.2	< 0.2	< 0.2	< 1
Benzo(a)anthracene	-	< 0.031	0.41	< 0.031	< 0.031	< 0.031	< 0.16
Benzo(a)pyrene	**0.2**	< 0.031	[0.2]	< 0.031	< 0.031	< 0.031	< 0.16
Benzo(g,h,i)perylene	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2.6
Benzo(b)fluoranthene	-	< 0.2	0.21	< 0.2	< 0.2	< 0.2	< 1
Benzo(k)fluoranthene	-	< 0.031	0.12	< 0.031	< 0.031	< 0.031	< 0.16
Chrysene	-	< 0.031	0.54	< 0.031	< 0.031	< 0.031	< 0.16
Dibenzo(a,h)anthracene	-	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036	< 0.18
Fluoranthene	-	< 0.5	3.9	< 0.5	< 0.5	< 0.5	< 2.6
Fluorene	-	< 0.5	1.2	< 0.5	< 0.5	2.4	< 2.6
Indeno(1,2,3-cd)pyrene	-	< 0.031	0.075	< 0.031	< 0.031	< 0.031	< 0.16
Naphthalene	-	< 1	2.3	1.1	3.4	56	47J
Phenanthrene	-	< 0.2	2.3	< 0.2	< 0.2	1	< 1
Pyrene	-	< 0.5	3.6	< 0.5	< 0.5	< 0.5	< 2.6
1-Methylnaphthalene	-	< 1	< 1	< 1	< 1	16	< 5
2-Methylnaphthalene	-	< 1	< 1	1.7	1.2	16	16
RCRA METALS							
Arsenic	**50**	48	24	4.8	NA	NA	NA
Barium	**2000**	200	140	520			
Cadmium	**5**	< 5 *	0.67 J	< 5 *			
Chromium	**100**	58	26	[160]			
Lead	**15**	[52]	[260]	[130]			
Mercury	**2**	0.12 J	0.19 J	0.52			
Selenium	**50**	< 20 J	< 20 J	[62 J]			

(1) - USEPA Maximum Contaminant Level, Drinking Water Regulations and Health Advisories, October 1996
J - Result is estimated   < - Less than laboratory reporting limits   [ ] - Concentration exceeds MCL
(-) No MCL is listed   * - Detection limit exceeds MCL
NA - Not Analyzed

TABLE 2, continued

SUMMARY OF CONSTITUENTS DETECTED IN GROUNDWATER SAMPLES
CAP PART-B FORMER BUILDING 728, HUNTER ARMY AIRFIELD

SITE:		MW63	MW64	MW65	MW66	MW66	MW67
SAMPLE ID:	EPA	MW6301	MW6401	MW6501	MW6601	MW10201	MW6701
DATE:	MCL [1]	4/1/97	4/1/97	4/1/97	4/1/97	4/1/97	4/1/97
UNITS:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
						Duplicate	
CONSTITUENT:							
VOLATILE ORGANICS (8020)							
Benzene	5	[2400]	[81]	< 1	< 1	< 1	< 1
Ethyl benzene	700	460	36	< 1	< 1	< 1	< 1
Toluene	1,000	300	50	< 1	< 1	< 1	< 1
Xylene (total)	10,000	2000	320	< 2	< 2	< 2	< 2
PAH (8310)							
Acenaphthene	-	3	< 1	< 1	< 1	< 1	< 1
Anthracene	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene	-	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031
Benzo(a)pyrene	0.2	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031
Benzo(g,h,i)perylene	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b)fluoranthene	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Benzo(k)fluoranthene	-	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031
Chrysene	-	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031
Dibenzo(a,h)anthracene	-	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036
Fluoranthene	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	-	0.67	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	-	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031	< 0.031
Naphthalene	-	36J	3.2	< 1	< 1	< 1	< 1
Phenanthrene	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Pyrene	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1-Methylnaphthalene	-	< 1	< 1	< 1	< 1	< 1	< 1
2-Methylnaphthalene	-	8.1	< 1	< 1	< 1	< 1	< 1
RCRA METALS		NA	NA	NA	NA	NA	NA
Arsenic	50						
Barium	2000						
Cadmium	5						
Chromium	100						
Lead	15						
Mercury	2						
Selenium	50						
Silver							

(1) - USEPA Maximum Contaminant Level, Drinking Water Regulations and Health Advisories, October 1996
J - Result is estimated   < - Less than laboratory reporting limits   [ ] - Concentration exceeds MCL
(-) No MCL is listed   * - Detection limit exceeds MCL
NA - Not Analyzed

TABLE 3

SUMMARY OF CONSTITUENTS DETECTED IN SURFACE WATER SAMPLES
CAP PART-B FORMER BUILDING 728, HUNTER ARMY AIRFIELD

SITE:	GA	SWE01	SWE01	SWE03
SAMPLE ID:	INSTREAM	SW0101	SW2001	SW0301
DATE:	WQS [1]	3/4/97	3/4/97	3/4/97
UNITS:	ug/L	ug/L	ug/L Duplicate	
CONSTITUENT:				
VOLATILE ORGANICS (8020)				
Benzene	71.28	6.8	8.1	3.7
Ethyl benzene	28,718	2.1	2.3	1
Toluene	200,000	3.9	4.3	1.2
Xylene (total)	-	7.7	8.8	4.3
PAH (8310)				
Acenaphthene	-	< 1	< 1	< 1
Anthracene	110,000	< 0.2	< 0.2	< 0.2
Benzo(a)anthracene	0.0311	[0.11J]	[0.21]**	< 0.031
Benzo(a)pyrene	0.0311	[0.14J]	[0.38]**	< 0.031
Benzo(g,h,i)perylene	-	< 0.5J	1.4	< 0.5
Benzo(b)fluoranthene	-	< 0.2J	0.21	< 0.2
Benzo(k)fluoranthene	0.0311	[0.066J]	[0.16]**	< 0.031
Chrysene	0.0311	[0.09J]	[0.31]**	< 0.031
Dibenzo(a,h)anthracene	0.0311	< 0.036 *	[0.096]**	< 0.036 *
Fluoranthene	370	< 0.5J	< 0.5	< 0.5
Fluorene	14,000	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.0311	[0.086J]	[0.21]**	< 0.031
Naphthalene	-	< 1	< 1	< 1
Phenanthrene	-	< 0.2	< 0.2	< 0.2
Pyrene	11,000	< 0.5J	< 0.5	< 0.5
1-Methylnaphthalene	-	< 1	< 1	< 1
2-Methylnaphthalene	-	< 1	< 1	< 1
RCRA METALS				
Arsenic	50	5.7 J	5.7 J	5.7 J
Barium	-	17	17	22
Cadmium	0.7 a	< 5 *	< 5 *	< 5 *
Chromium	120 a	< 10	< 10	< 10
Lead	1.3 a	[9]	0.90 J	0.88 J
Mercury	0.012	< 0.2 *	< 0.2 *	< 0.2 *
Selenium	5.0	< 10 *	< 10 *	< 10 *

NA - Not Analyzed
J - Result is estimated   < - Less than laboratory reporting limits   [ ] - Concentration exceeds Water Quality Standard
(1) - Georgia DNR, EPD, CHapter 391-3-6.03, Water Quality Control, Instream Water Quality Standards, Section 5(d)(ii) & (iii) 5/29/94
(a) - at hardness levels less than 100 mg/L
(-) No criteria is listed   * - Detection limit exceeds water quality standard
** - Sample interference in primary HPLC detector, results reported by laboratory from secondary HPLC detector.

TABLE 4

SUMMARY OF CONSTITUENTS DETECTED IN SEDIMENT SAMPLES
CAP PART-B FORMER BUILDING 728, HUNTER ARMY AIRFIELD

SITE: SAMPLE ID: DATE: DEPTH (ft): UNITS:	SOIL THRESHOLD LEVELS [1] mg/kg	SEDIMENT SCCREENING VALUES [3] mg/kg	SWE03 SE0301 3/4/97 0 mg/kg	SWE03 SE2001 3/4/97 0 mg/kg Duplicate
CONSTITUENT:				
VOLATILE ORGANICS (8020)				
Benzene	0.005	-	< 0.0062 *	< 0.0061 *
Ethylbenzene	0.37	-	< 0.0062	< 0.0061
Toluene	0.4	-	< 0.0062	< 0.0061
Xylene (total)	20	-	< 0.0062	< 0.0061
PAH (8100)				
Acenaphthene	NA	0.33	< 0.41	< 0.4
Benzo(a)pyrene	0.66 [a]	-	0.61	0.58
Benzo(b,k)fluoranthene [2]	0.66 [a]	-	[1.3]	[1.3]
Benzo(ghi)perylene	-		0.86	0.46
Chrysene + Benzo(a)anthracene [2]	0.66 / 0.66 [a]	0.33	[1.4]	[0.91]
Fluoranthene	NA	0.33	1.2	1.3
Fluorene	NA	0.33	< 0.41	< 0.4
Indeno(1,2,3-cd)pyrene +Dibenzo(a,h)anthracene [2]	0.66 / 0.66 [a]	0.33	[0.89]	[0.77]
Naphthalene	NA	0.33	< 0.41	< 0.4
Phenanthrene + Anthracene [2]	NA	0.33	[0.68]	[0.61]
Pyrene	NA	0.33	[1.0]	[1.4]
1-Methylnaphthalene	-	-	< 0.41	< 0.4
2-Methylnaphthalene	-	0.33	< 0.41	< 0.4
PETROLEUM HYDROCARBONS (8015 M)				
GRO	-	-	< 0.22	< 0.22
DRO	-	-	16	16

J - Result is estimated   < - Less than laboratory reporting limits   [ ] - Concentration exceeds Soil Threshold Limit

(1) SOIL THRESHOLD LEVELS- GA DNR, EPD Chapter 391-3-15-.09, UST Management, Tables A and B (< 500 feet to a withdrawal point and <500 feet to a surface water body, respectively).

(a) Estimated Quantitation L+A31limit; calculated health-based thresholds is less the laboratory detection limit.

(-) - Level is not listed   NA - Not Applicable; Health-based threshold level exceeds the expected soil concentration under free product conditions

(2) PAH compounds co-elute and can not be individually confirmed.

(3) EPA Region IV Waste Management Division, Sediment Screening Values for Hazardous Waste Sites.

TABLE 5
WATER SUPPLY WELLS WITHIN 2-MILE RADIUS OF FORMER BUILDING 728

Well I.D.	Quad.	Owner	Total Depth	Casing Depth	Distance and Direction from Site	Use
017	36O	Howard Johnson Motel	448	294	9,400 feet NNW	Commercial
125	36O	McCallan	341	146	9,200 feet NNW	Public
302	36O	City of Savannah 25	540	287	5,700 feet NW	Public
112	36O	SCL RR, Shops	508	275	4,100 feet W	Commercial
285	36O	U.S. Army, Hunter 1	504	259	300 feet SW	Public
286	36O	U.S. Army, Hunter 2	555	260	3,800 feet SSE	Public
290	36O	U.S. Army, Hunter 4	300	90	10,800 feet SW	Not Used
287	36O	U.S. Army, Hunter 3	370	324	12,100 feet SW	Public
036	36P	City of Savannah 36	414	252	14,500 feet SSW	Public
033	37Q	Derst Baking Co.	568	258	7,600 feet NNE	Industrial
097	37Q	Reynolds - Manley L1	346	128	7,500 feet NNE	Unused
096	37Q	Reynolds - Manley L2	514	258	7,500 feet NE	Industrial
031	37Q	City of Savannah 09	710	267	10,300 feet ENE	Public
006	37P	City of Savannah 13	1000	270	13,000 feet SSE	Public

Quad: Georgia Grid System.

Sources: Hunter AAF in AT&E, 1993.
GA Geologic Survey, Bulletin 113, 1990.
U.S.G.S. Well Listing, 1996.
City of Savannah, 1996.

TABLE 6 Former Building 728 Area Monitoring Well Summary						
Location	Screen Interval ft, bgs	Water Depth, TOC	TOC Elevation, ft, msl	Water Level Elevation, ft, msl	Surface Elevation, ft, msl	Free Prod. Thickness ft.
CAP-A						
MW01	3.2-13.2	3.35	19.20	15.85	19.5	
MW02	3.8-13.8	5.23	20.51	15.28	20.8	
MW03	2.6-12.6	5.86	20.80	14.94	21.1	
MW04	3.4-13.4	Destroyed	3/97			
MW05	3.3-13.3	5.88	20.37	14.49	20.7	
MW06	2.9-12.9	5.33	20.02	14.69	20.4	
MW08	3.5-13.5	Product	Recovery		19.6	(1.3)*
MW09	3.1-13.1	6.71	20.27	13.56	20.5	
MW10	2.9-12.9	6.34	19.11	12.77	19.4	
MW11	2.3-12.3	6.41	18.89	12.48	19.3	
MW12	2.9-12.9	4.17	18.51	14.34	18.8	
MW13	4.0-14.0	6.06	18.39	12.33	18.7	
MW14	4.0-14.0	7.00	18.76	11.76	19.0	
CAP-B						
MW55	2.0-12.0	3.02	18.32	15.30	18.5	
MW56	1.4-11.4	4.53	19.69	15.16	19.8	
MW57	2.0-12.0	5.15	20.10	14.95	20.3	
MW58	2.0-12.0	4.42	19.21	14.79	19.4	
MW59	2.0-12.0	5.60	19.24	13.64	19.4	0.15
MW60	3.0-13.0	6.93	20.30	13.37	20.4	
MW61	3.0-13.0	6.83	20.34	13.51	20.5	
MW62	3.0-13.0	6.57	19.79	13.22	19.9	0.81
MW63	4.0-14.0	7.05	20.15	13.10	20.3	
MW64	3.0-13.0	5.65	18.98	13.33	19.1	
MW65	3.0-13.0	7.04	18.41	11.37	18.6	
MW66	35.6-40.6	4.12	18.60	14.48	18.8	
MW67	33.0-38.0	6.62	18.82	12.20	19.0	

bgs-below ground surface

TOC-top of casing

msl-mean sea level

Measurements on 3/31/97

* - measured 2/26/96

(p:\hazwaste\hunter5\wellsum.wk1)

Table 7. Remedial Alternatives for Free Product Removal

Remedial Technology	Advantages	Disadvantages
Groundwater extraction, product skimming, and groundwater treatment	Underground operation, fully automated. Hydraulic capture of plume. Single well extraction capability depending on product plume size	Expensive. Equipment requires frequent maintenance. Large cost of recovery per gallon of product because of groundwater treatment.
Product selective extraction using a belt skimmer, floating scavenger or total fluids extraction system*	Effective for smaller plumes or multiple well configurations. Low cost per gallon of recovered Product. No associated waste stream by-product (i.e. contaminated groundwater) requiring treatment other than recovered product. Limits enlargement of the smear zone.	Not effective greater than 15 to 25 feet from well. Minimal hydraulic plume capture to limit spreading. High density of recovery deployment required to remove all Product. Relatively slow, cannot be readily accelerated.
Product extraction using absorbent media in wells	Same as above (belt skimmer) with still lower costs. Inexpensive containerization of spent absorbent materials on-site in drums.	Same as above (belt skimmer) but slower.
Product removal using soil vapor extraction	Effective for removing both volatile and semi-volatile contaminants. Systems are usually simple with few automated parts. Added benefit of drawing oxygen into the subsurface to enhance bioremediation and volatilization of hydrocarbons in groundwater. Relatively rapid reduction of contaminant mass.	Deploying in shallow unconfined conditions (without paved cover) encourages short-circuiting of air flow paths. Off gas treatment can be expensive (if required). Systems require power and design/pilot costs can be substantial. Typically capable of removing all Product although confirmation can be difficult.
Product removal by excavation and absorption/pumping	Straight forward process. Visual confirmation of complete removal usually achieved. Rapid. On-site or off-site treatment options are flexible. No specialized equipment required. Added benefit of removing continuing sources of soil and groundwater contamination and stimulation natural biologic processes that metabolize hydrocarbons. Ability to enhance bioactivity by addition of nutrients.	Initial costs can be expensive. Creates considerable surface disruption. Extension of liability if by-products of product recovery (soil and groundwater) are transported off-site for treatment. Excavation area often grows making cost management difficult unless extent of product is well defined.

*Recommended Alternative

TABLE 8. Remedial Alternatives for Groundwater Treatment

Remedial Technology	Advantages	Disadvantages
Groundwater extraction with above ground air stripping.	Effective removal of volatile and semi-volatile hydrocarbons, wide range of withdraw rates possible. Well documented technology. Typically moderate maintenance costs. Added benefit of creating cone of influence capable of recovering SPH. No off-site transport of treated groundwater if a recharge gallery can be used.	Long term operation likely. Vapor phase treatment from tower may be necessary. Piping for off-site liquid disposal may be required.
Groundwater extraction with above ground carbon absorption.	Effective removal of volatile and semi-volatile hydrocarbons, wide range of withdraw rates possible. Well documented technology. Typically moderate maintenance costs. Added benefit of creating cone of influence capable of recovering SPH. No off-site transport of treated groundwater if a recharge gallery can be used.	Long term operation likely. Off-site disposal or regeneration of spent carbon required. Carbon utilization may become excessive depending on contaminant load.
Groundwater extraction with above ground UV-oxidation.	Same as above but used typically used for lower flow rates.	Effective removal of volatile and semi-volatile hydrocarbons at lower flow rates; very expensive for higher flow rates. Maintenance costs can increase based on the rate at which UV lamps expire or need cleaning.
Total fluids extraction with off site disposal.	Effective removal of all hydrocarbons, wide range of withdraw rates possible. Lower initial costs because little specialized equipment is required. No system discharge permit required.	Off-site disposal of recovered fluids required. Increased site visitation may be required to adjust fluid intake levels in wells in order to maximize product recovery.
In-situ air stripping.	No removal of contaminated groundwater from the subsurface. Effective removal of volatile and semi-volatile hydrocarbons. Subsurface installation allowing above-ground activity without obstruction. Typically low maintenance costs.	Requires either a significant gradient to allow groundwater to pass through treatment cells or extensive deployment of stripping wells. Shallow depth to groundwater may make deployment infeasible. Effective removal of volatile and semi-volatile hydrocarbons. Typically low maintenance costs.
Soil vapor extraction.	Documented effects on soluble contamination exists. Added benefit of removing contaminant source from soil. Effective removal of volatile hydrocarbons from groundwater, less so for semi-volatiles. No removal of contaminated water. Well documented technology. Typically low maintenance costs.	Considerable initial costs for design, testing, and installation. Long term operation. Vapor phase treatment from system may be necessary. Semi-volatile hydrocarbons may not be removed. May only effectively remove shallow contamination.
Air sparging.*	Effective removal of volatile and semi-volatile hydrocarbons. Well documented technology. Typically low maintenance costs. Added benefit of stimulating natural biodegradation processes.	Requires either a significant gradient to allow groundwater to pass through sparging zones or extensive deployment of sparging wells. Size of plume may make deployment infeasible or not cost effective. Up welling of groundwater may influence contaminant transport rate and direction. Effective removal of volatile and semi-volatile hydrocarbons. Typically low maintenance costs.

*Recommended Alternative

Table 9. Remedial Alternatives for Soil Treatment

Remedial Technology	Advantages	Disadvantages
Assisted in-situ Bioremediation	Relatively non-disruptive to surface. Near complete removal of hydrocarbons throughout the saturated and unsaturated zones. Treatment period can be reduced by deploying microbes and nutrients designed specifically for the type of petroleum hydrocarbons	Can be expensive. Initial investment in equipement can be substantial. Shallow depth to water requires numerous injection points because of limited dispersion distances. Equipment requires frequent maintenance.
Natural attenuation	Effective for treating both volatile and semi-volatile contaminants in soil under certain conditions. No treatment equipment required. Periodic monitoring of bioremediation by-products using field meters can reduce monitoring costs.	Must remove all SPH to sustain the bioremediation process. Typically only effective in shallow unconfined conditions (without paved cover) for aerobic biodegredation. Process is slow and depends on the quantity and types of natural microbial populations, their affinity for reducing the petroleum compound, and the availability of nutrients/ air.
Soil vapor extraction*	Effective for removing both volatile and semi-volatile contaminants. Systems are usually simple with few automated parts. Added benefit of drawing oxygen into the subsurface to enhance bioremediation and volatilization of hydrocarbons in groundwater. Relatively rapid reduction of contaminant mass.	Deploying in shallow unconfined conditions (without paved cover) encourages short-circuiting of air flow paths. Off gas treatment can be expensive (if required). Systems require power and design/pilot costs can be substantial. Typically capable of removing soil contaminants to regulatory levels.
Excavation and removal with on-site or off-site disposal	Straight forward process. Visual confirmation of complete removal usually achieved. Ongoing testing during removal conducted for confirmation. Rapid. On-site or off-site treatment options are flexible. No specialized equipment required. Added benefit of removing continuing sources of soil and groundwater contamination (SPH) and stimulation natural biologic processes that metabolize hydrocarbons. Ability to enhance bioactivity by addition of nutrients.	Initial costs can be expensive. Creates considerable surface disruption. Extension of liability if soil is transported off-site for treatment or disposal. Excavation area often grows making cost management difficult unless extent of contaminated soil is well defined.

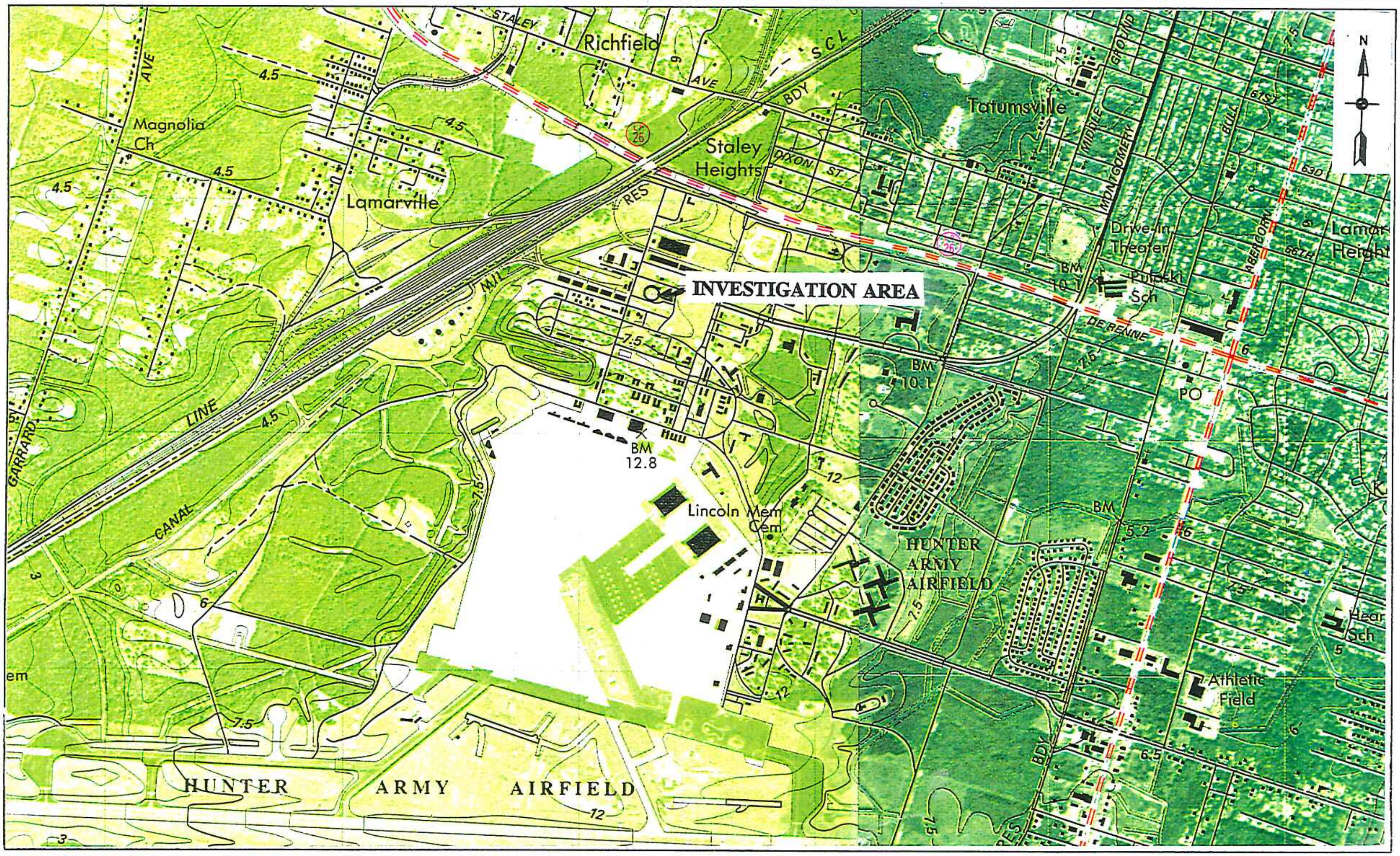
*Recommended Alternative

Table 10. Groundwater Remediation Goals

Contaminant of Concern	Remedial Goal*
Benzene	71.28 μg/l
Ethyl Benzene	700 μg/l
Toluene	1,000 μg/l
Xylene (Total)	10,000 μg/l
Benzo(a)anthracene	0.0311 μg/l
Benzo(a)pyrene	0.0311 μg/l
Benzo(k)fluoranthene	0.0311 μg/l
Chrysene	0.0311 μg/l
Dibenzo(a,h)anthracene	0.0311 μg/l
Indeno(1,2,3-cd)pyrene	0.0311 μg/l

* Source- Georgia Rules and Regulation for Water Quality Control, Chapter 391-3-6

FIGURES



METCALF & EDDY	AIRFIELD LOCATION MAP HUNTER ARMY AIRFIELD SAVANNAH, GEORGIA	
SCALE 1:24000 1000 0 1000 2000 3000 4000 5000 6000 7000 FEET	SOURCE: GARDEN CITY AND SAVANNAH, GA USGS QUADRANGLE MAPS, 1978	FIGURE 1

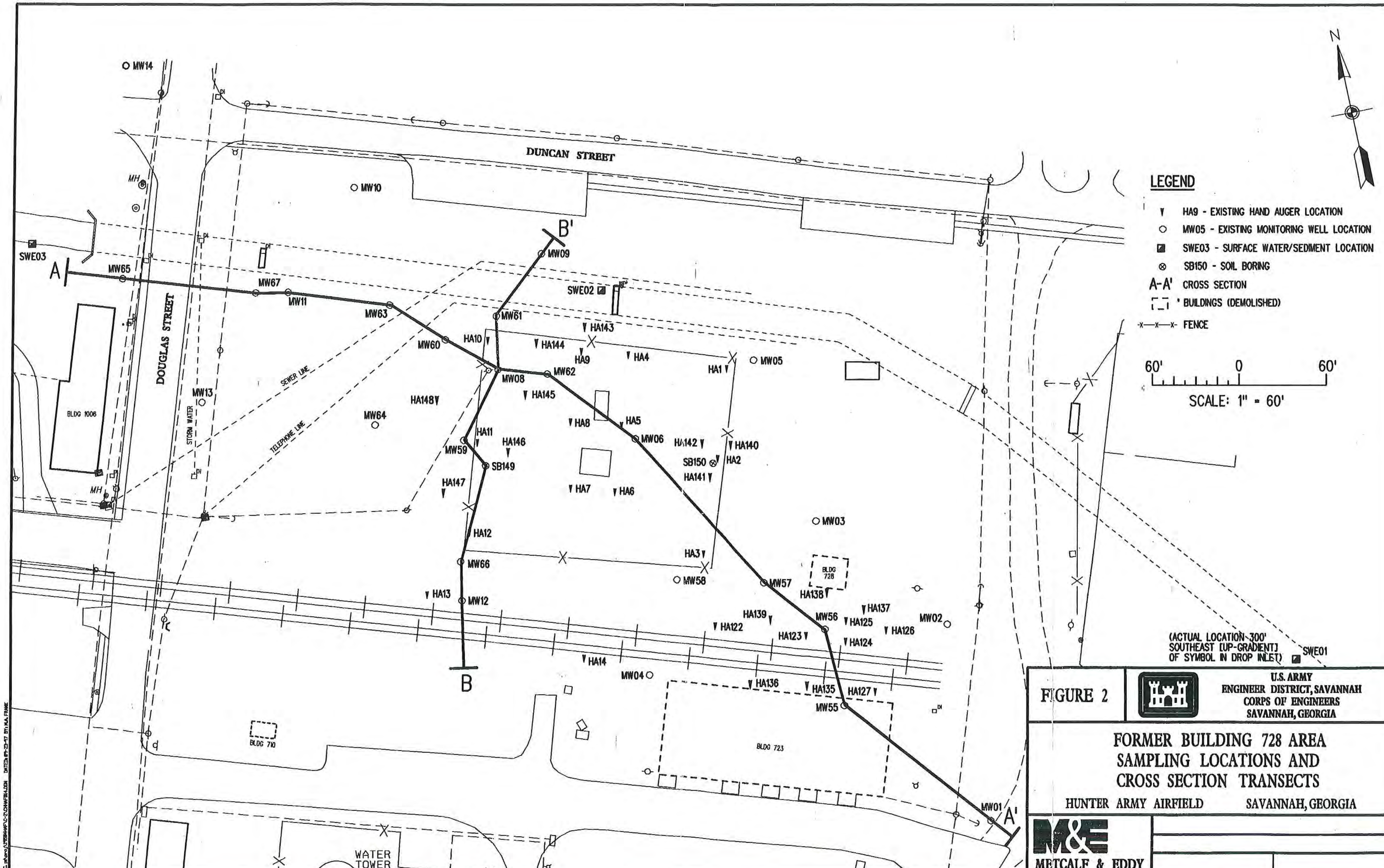
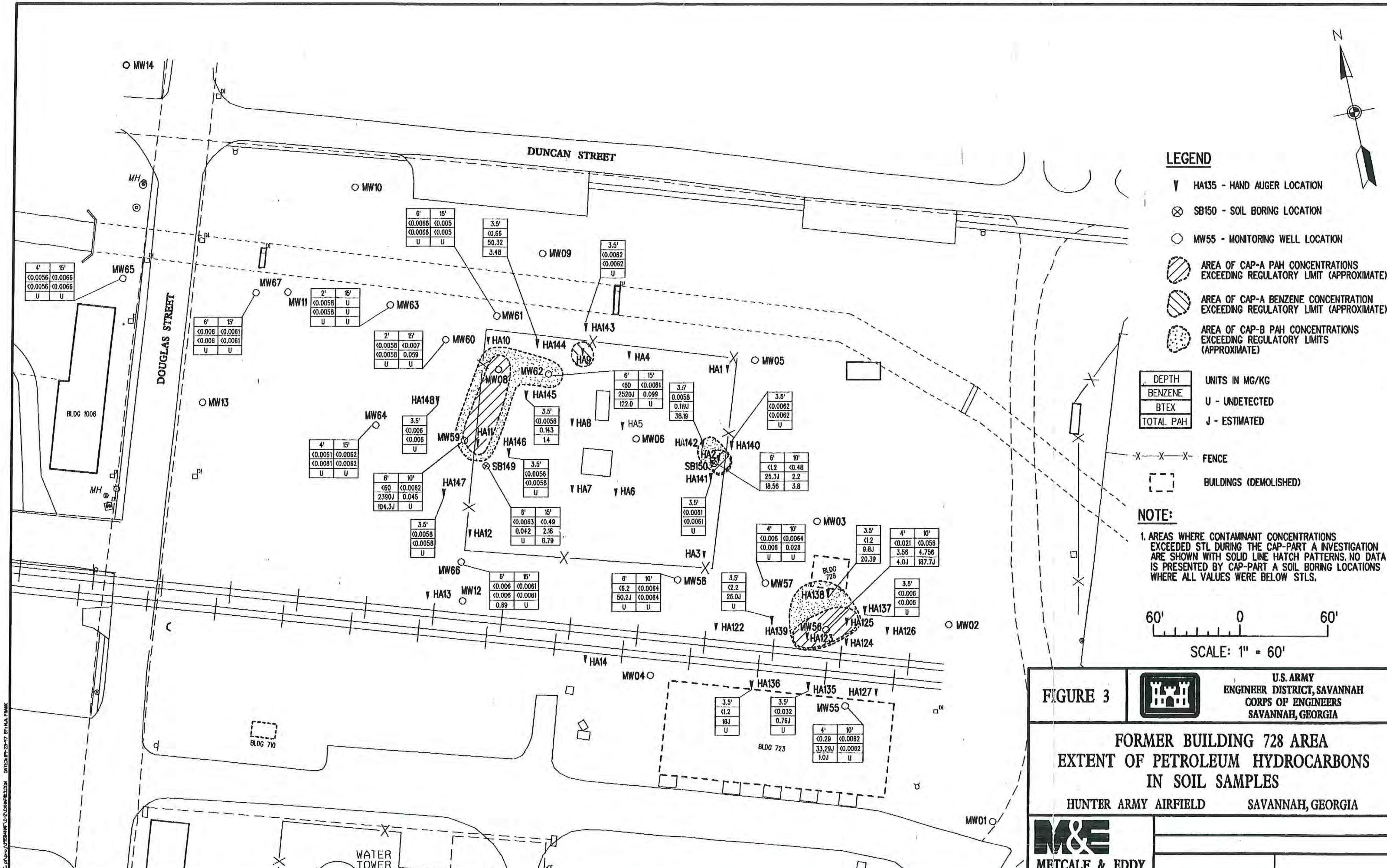


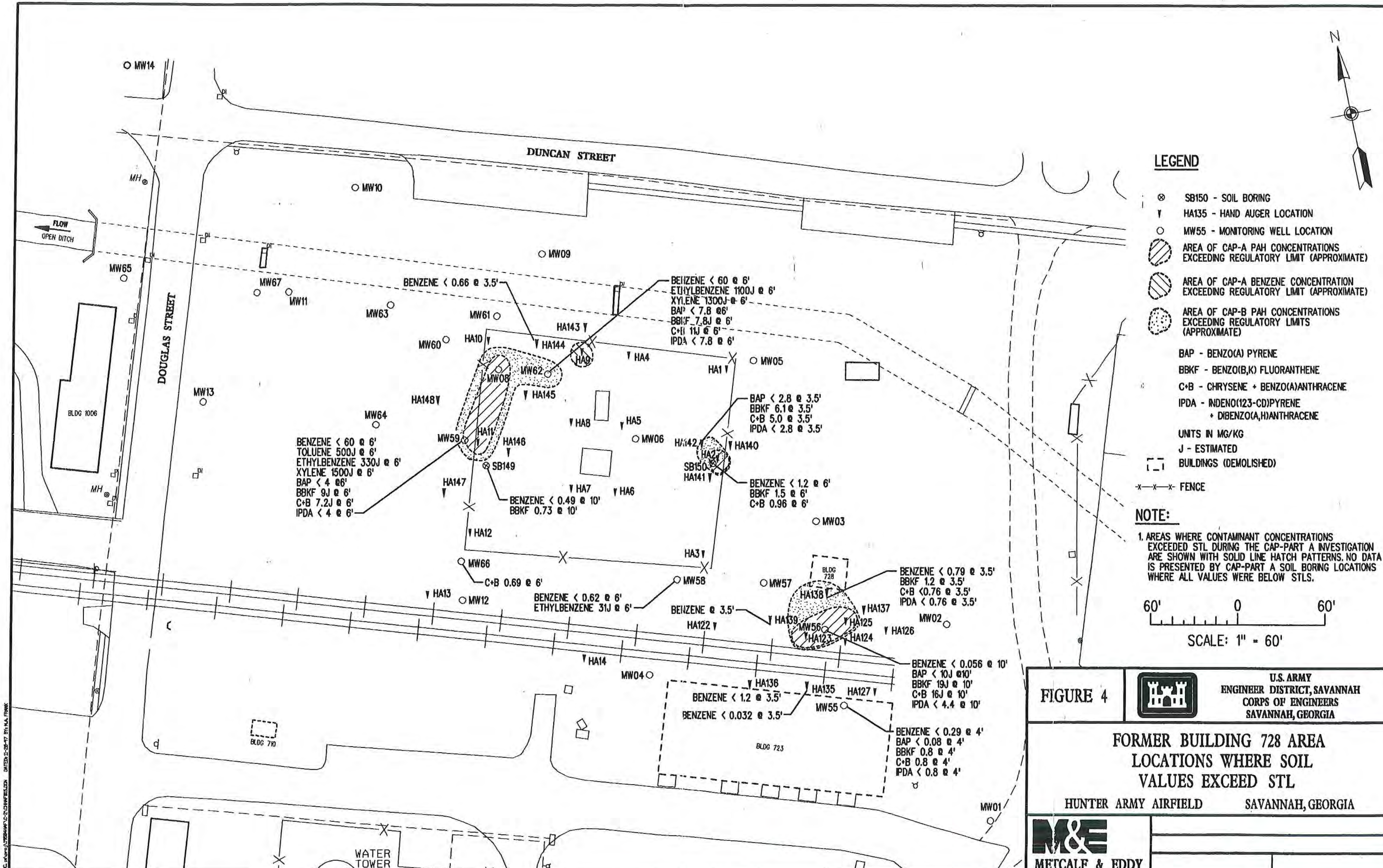
FIGURE 2

FORMER BUILDING 728 AREA SAMPLING LOCATIONS AND CROSS SECTION TRANSECTS

HUNTER ARMY AIRFIELD SAVANNAH, GEORGIA



DUNCAN STREET
DOUGLAS STREET
MW14
MW10
MW09
MW65
MW67
MW11
MW63
MW61
MW60
MW13
MW64
MW59
MW08
MW62
MW05
MW06
MW03
MW58
MW57
MW66
MW12
MW02
MW04
MW55
MW56
MW01
HA10
HA144
HA143
HA9
HA4
HA1
HA145
HA148
HA11
HA146
HA8
HA5
HA142
HA2
HA140
SB150
HA141
SB149
HA147
HA7
HA6
HA12
HA3
HA13
HA138
HA137
HA125
HA126
HA139
HA123
HA124
HA122
HA14
HA136
HA135
HA127
BLDG 1006
BLDG 710
BLDG 723
BLDG 728
WATER TOWER
LEGEND
HA135 - HAND AUGER LOCATION
SB150 - SOIL BORING LOCATION
MW55 - MONITORING WELL LOCATION
AREA OF CAP-A PAH CONCENTRATIONS EXCEEDING REGULATORY LIMIT (APPROXIMATE)
AREA OF CAP-A BENZENE CONCENTRATION EXCEEDING REGULATORY LIMIT (APPROXIMATE)
AREA OF CAP-B PAH CONCENTRATIONS EXCEEDING REGULATORY LIMITS (APPROXIMATE)
DEPTH
BENZENE
BTEX
TOTAL PAH
UNITS IN MG/KG
U - UNDETECTED
J - ESTIMATED
FENCE
BUILDINGS (DEMOLISHED)
NOTE:
1. AREAS WHERE CONTAMINANT CONCENTRATIONS EXCEEDED STL DURING THE CAP-PART A INVESTIGATION ARE SHOWN WITH SOLID LINE HATCH PATTERNS. NO DATA IS PRESENTED BY CAP-PART A SOIL BORING LOCATIONS WHERE ALL VALUES WERE BELOW STLS.
60' 0 60'
SCALE: 1" = 60'
FIGURE 3
U.S. ARMY
ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA
FORMER BUILDING 728 AREA
EXTENT OF PETROLEUM HYDROCARBONS
IN SOIL SAMPLES
HUNTER ARMY AIRFIELD
SAVANNAH, GEORGIA
METCALF & EDDY



DUNCAN STREET
DOUGLAS STREET
FLOW
OPEN DITCH
MW14
MW10
MW09
MW65
MW67
MW11
MW63
MW61
MW60
MW13
MW64
MW59
MW08
MW62
MW05
MW06
MW03
MW66
MW12
MW58
MW57
MW56
MW02
MW04
MW55
MW01
HA10
HA143
HA144
HA9
HA4
HA1
HA145
HA148
HA8
HA5
HA11
HA146
HA147
HA7
HA6
HA142
HA2
HA140
SB150
HA141
SB149
HA12
HA3
HA13
HA138
HA137
HA139
HA125
HA126
HA122
HA123
HA124
HA14
HA136
HA135
HA127
BLDG 1006
BLDG 728
BLDG 710
BLDG 723
WATER TOWER
MH
BENZENE < 0.66 @ 3.5'
BENZENE < 60 @ 6'
ETHYLBENZENE 1100J @ 6'
XYLENE 1300J @ 6'
BAP < 7.8 @6'
BBKF 7.8J @ 6'
C+B 11J @ 6'
IPDA < 7.8 @ 6'
BENZENE < 60 @ 6'
TOLUENE 500J @ 6'
ETHYLBENZENE 330J @ 6'
XYLENE 1500J @ 6'
BAP < 4 @6'
BBKF 9J @ 6'
C+B 7.2J @ 6'
IPDA < 4 @ 6'
BAP < 2.8 @ 3.5'
BBKF 6.1@ 3.5'
C+B 5.0 @ 3.5'
IPDA < 2.8 @ 3.5'
BENZENE < 0.49 @ 10'
BBKF 0.73 @ 10'
BENZENE < 1.2 @ 6'
BBKF 1.5 @ 6'
C+B 0.96 @ 6'
C+B 0.69 @ 6'
BENZENE < 0.62 @ 6'
ETHYLBENZENE 31J @ 6'
BENZENE @ 3.5'
BENZENE < 0.79 @ 3.5'
BBKF 1.2 @ 3.5'
C+B <0.76 @ 3.5'
IPDA < 0.76 @ 3.5'
BENZENE < 0.056 @ 10'
BAP < 10J @10'
BBKF 19J @ 10'
C+B 16J @ 10'
IPDA < 4.4 @ 10'
BENZENE < 1.2 @ 3.5'
BENZENE < 0.032 @ 3.5'
BENZENE < 0.29 @ 4'
BAP < 0.08 @ 4'
BBKF 0.8 @ 4'
C+B 0.8 @ 4'
IPDA < 0.8 @ 4'
N
LEGEND
SB150 - SOIL BORING
HA135 - HAND AUGER LOCATION
MW55 - MONITORING WELL LOCATION
AREA OF CAP-A PAH CONCENTRATIONS EXCEEDING REGULATORY LIMIT (APPROXIMATE)
AREA OF CAP-A BENZENE CONCENTRATION EXCEEDING REGULATORY LIMIT (APPROXIMATE)
AREA OF CAP-B PAH CONCENTRATIONS EXCEEDING REGULATORY LIMITS (APPROXIMATE)
BAP - BENZO(A) PYRENE
BBKF - BENZO(B,K) FLUORANTHENE
C+B - CHRYSENE + BENZO(A)ANTHRACENE
IPDA - INDENO(123-CD)PYRENE + DIBENZO(A,H)ANTHRACENE
UNITS IN MG/KG
J - ESTIMATED
BUILDINGS (DEMOLISHED)
FENCE
NOTE:
1. AREAS WHERE CONTAMINANT CONCENTRATIONS EXCEEDED STL DURING THE CAP-PART A INVESTIGATION ARE SHOWN WITH SOLID LINE HATCH PATTERNS. NO DATA IS PRESENTED BY CAP-PART A SOIL BORING LOCATIONS WHERE ALL VALUES WERE BELOW STLS.
60' 0 60'
SCALE: 1" = 60'
FIGURE 4
U.S. ARMY ENGINEER DISTRICT, SAVANNAH CORPS OF ENGINEERS SAVANNAH, GEORGIA
FORMER BUILDING 728 AREA LOCATIONS WHERE SOIL VALUES EXCEED STL
HUNTER ARMY AIRFIELD
SAVANNAH, GEORGIA
M&E
METCALF & EDDY

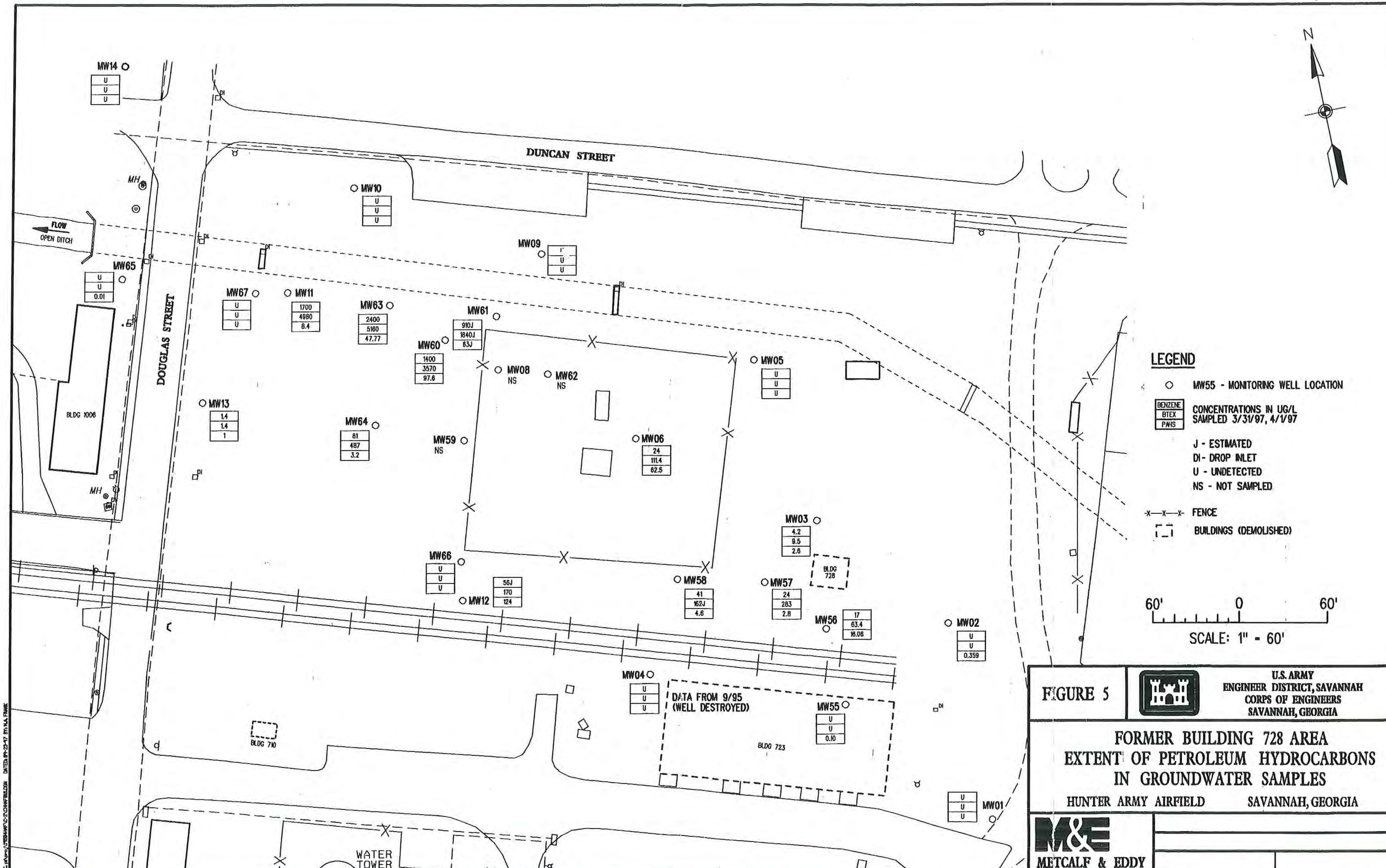


FIGURE 5

U.S. ARMY
ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

FORMER BUILDING 728 AREA
EXTENT OF PETROLEUM HYDROCARBONS
IN GROUNDWATER SAMPLES

HUNTER ARMY AIRFIELD SAVANNAH, GEORGIA

M&E
METCALF & EDDY

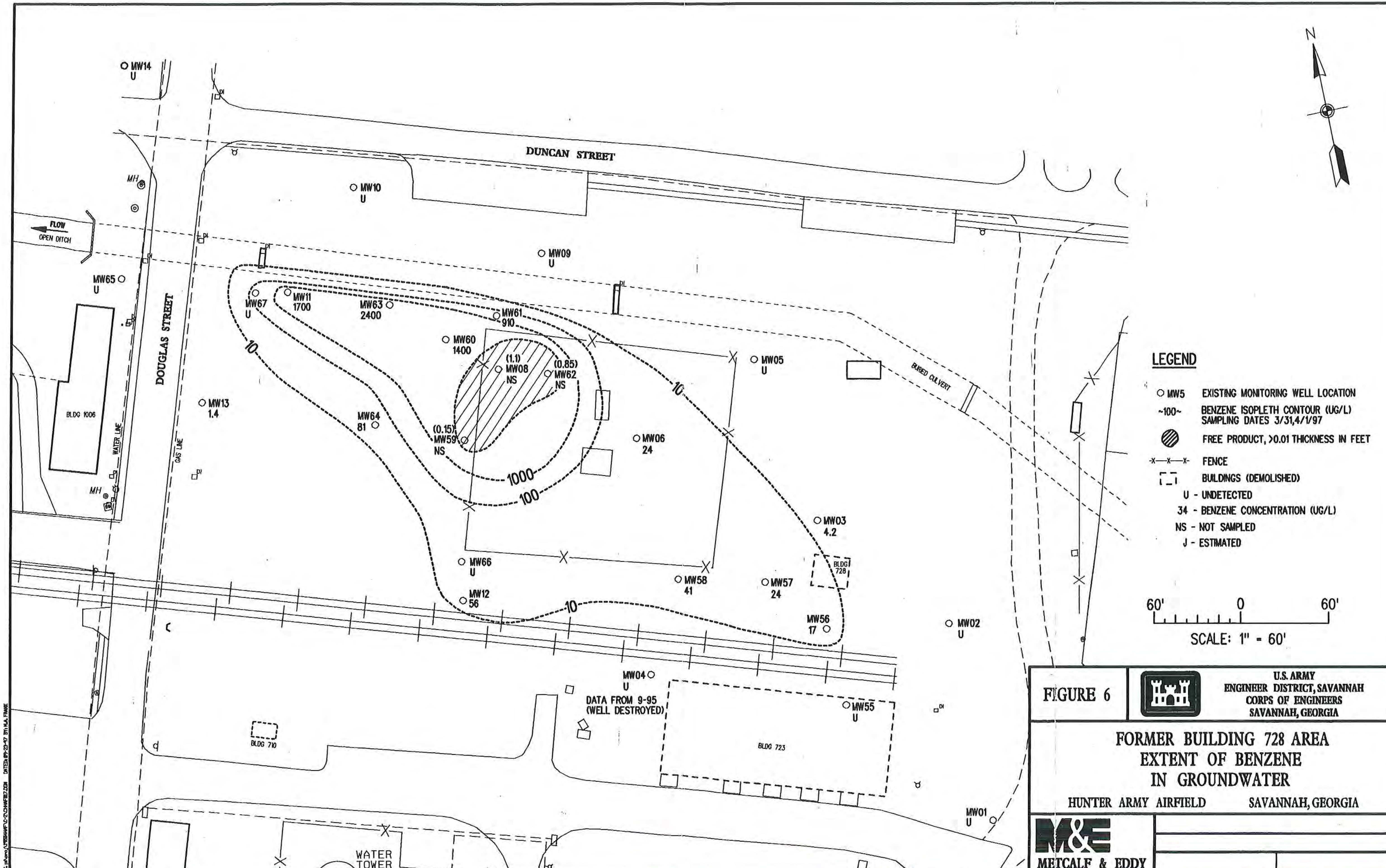


FIGURE 6

FORMER BUILDING 728 AREA EXTENT OF BENZENE IN GROUNDWATER

HUNTER ARMY AIRFIELD SAVANNAH, GEORGIA

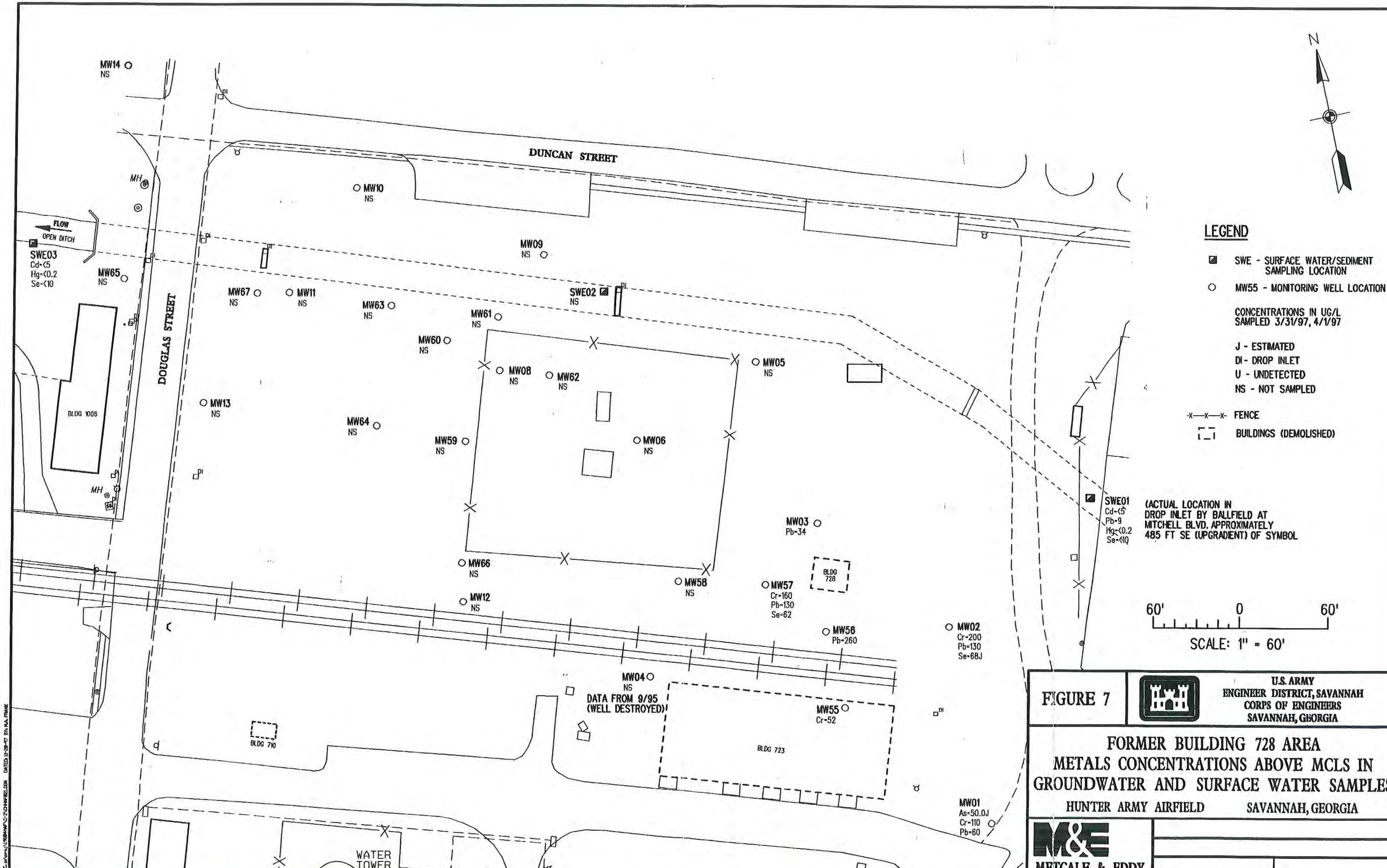
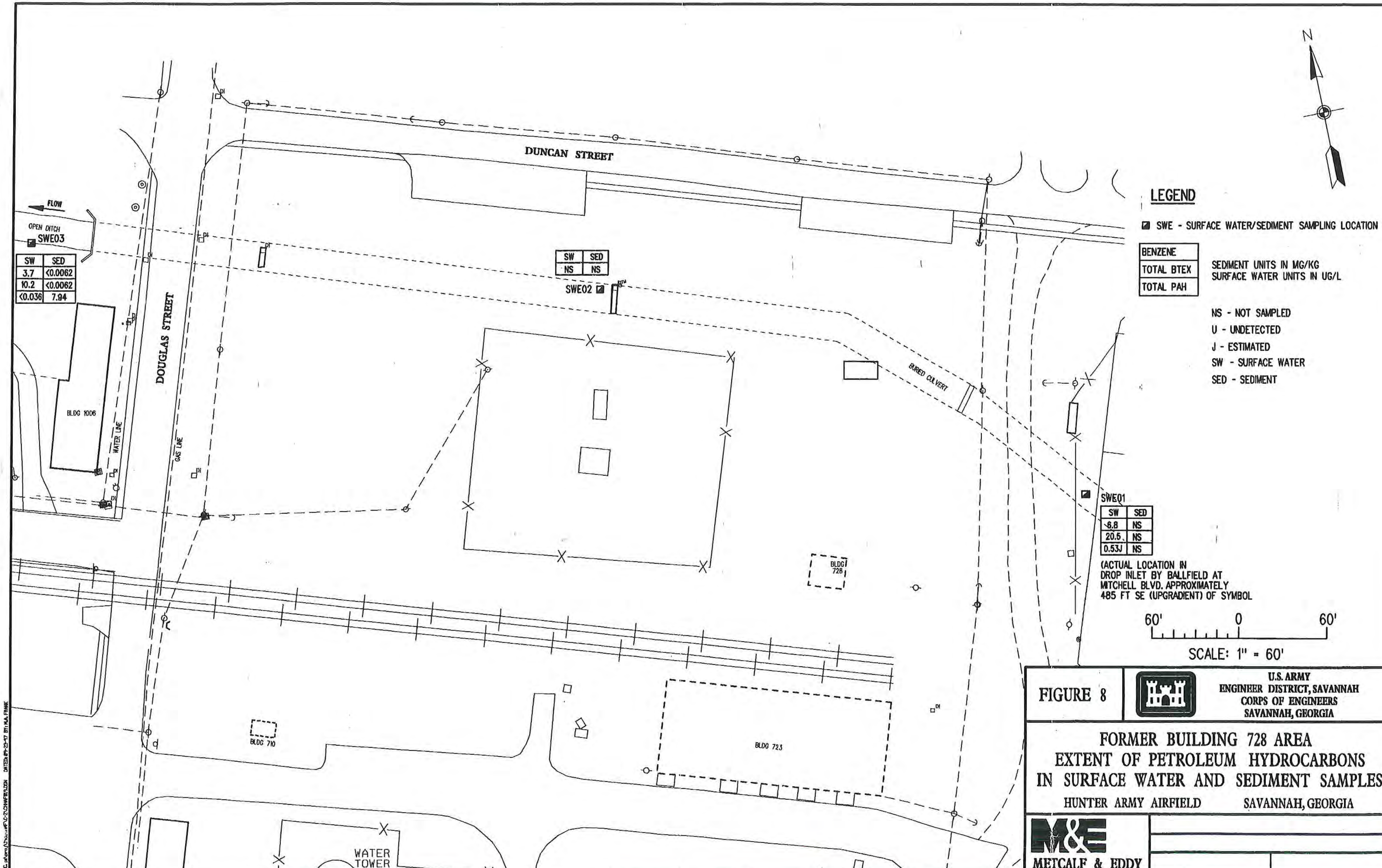


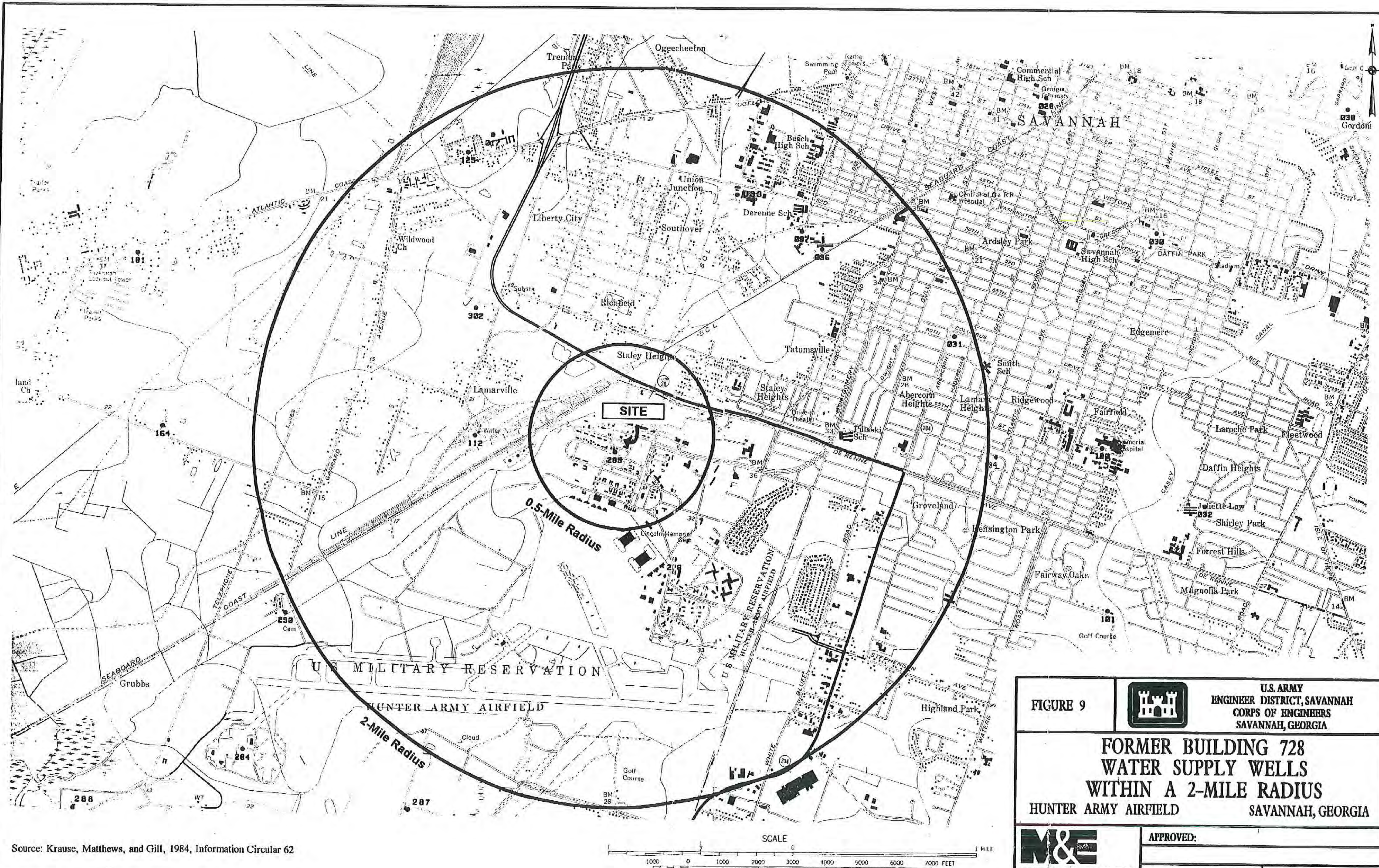
FIGURE 7

U.S. ARMY
ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

FORMER BUILDING 728 AREA
METALS CONCENTRATIONS ABOVE MCLS IN GROUNDWATER AND SURFACE WATER SAMPLES
HUNTER ARMY AIRFIELD SAVANNAH, GEORGIA

METCALF & EDDY


DUNCAN STREET
DOUGLAS STREET
FLOW
OPEN DITCH
SWE03
SW | SED
3.7 | <0.0062
10.2 | <0.0062
<0.036 | 7.94
SWE02
SW | SED
NS | NS
SWE01
SW | SED
6.8 | NS
20.5 | NS
0.53J | NS
(ACTUAL LOCATION IN DROP INLET BY BALLFIELD AT MITCHELL BLVD. APPROXIMATELY 485 FT SE (UPGRADIENT) OF SYMBOL
BURIED CULVERT
WATER LINE
GAS LINE
BLDG 1006
BLDG 728
BLDG 710
BLDG 723
WATER TOWER
N
LEGEND
SWE - SURFACE WATER/SEDIMENT SAMPLING LOCATION
BENZENE
TOTAL BTEX
TOTAL PAH
SEDIMENT UNITS IN MG/KG
SURFACE WATER UNITS IN UG/L
NS - NOT SAMPLED
U - UNDETECTED
J - ESTIMATED
SW - SURFACE WATER
SED - SEDIMENT
60' 0 60'
SCALE: 1" = 60'
FIGURE 8
U.S. ARMY
ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA
FORMER BUILDING 728 AREA
EXTENT OF PETROLEUM HYDROCARBONS
IN SURFACE WATER AND SEDIMENT SAMPLES
HUNTER ARMY AIRFIELD
SAVANNAH, GEORGIA
M&E
METCALF & EDDY



Source: Krause, Matthews, and Gill, 1984, Information Circular 62

FIGURE 9

U.S. ARMY
ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

FORMER BUILDING 728 WATER SUPPLY WELLS WITHIN A 2-MILE RADIUS

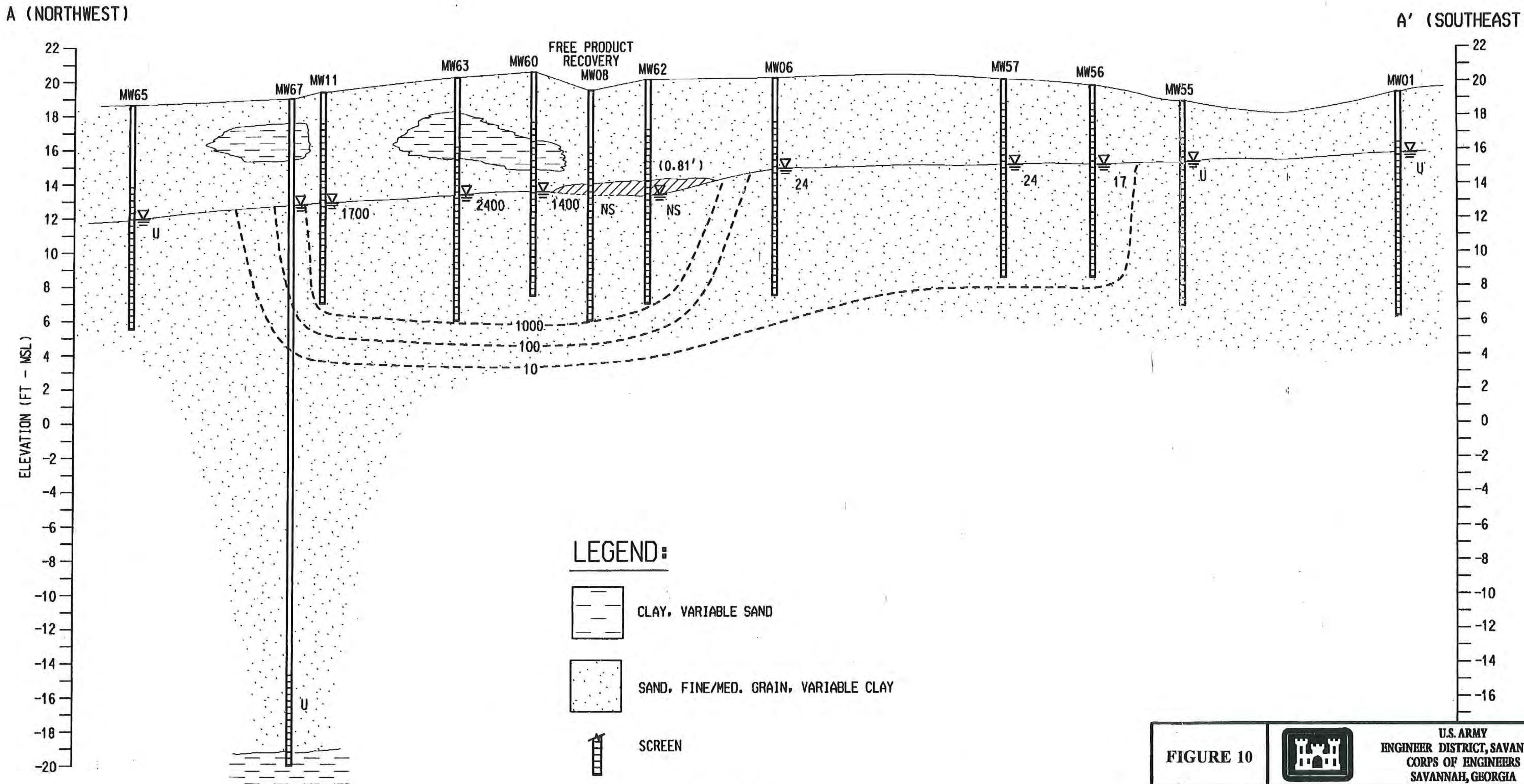
HUNTER ARMY AIRFIELD SAVANNAH, GEORGIA

METCALF & EDDY

APPROVED:

SCALE: DATE:

LOC: p:\proj\17830hef\c\chhef010.DGN DATED: 12-03-97 BY: M.A. FRANK



LEGEND:

CLAY, VARIABLE SAND

SAND, FINE/MED. GRAIN, VARIABLE CLAY

SCREEN

WATER LEVEL 3/31/97

SEPARATE PHASE HYDROCARBONS

NS NOT SAMPLED

U UNDETECTED

2400 BENZENE CONCENTRATION UG/L

--1000-- BENZENE ISOPLETH CONTOUR, UG/L

0 60'
HORIZONTIAL

0 6'
VERTICAL
V.E. = 10X

FIGURE 10

U.S. ARMY
ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

FORMER BUILDING 728
CROSS SECTION A-A'

HUNTER ARMY AIRFIELD SAVANNAH, GEORGIA

M&E
METCALF & EDDY

APPROVED:

SCALE: DATE:

LOC. p:\proj\19504haf\c\cxhaf003.DGN DATED: 11-20-97 BY: M.A. FRANK

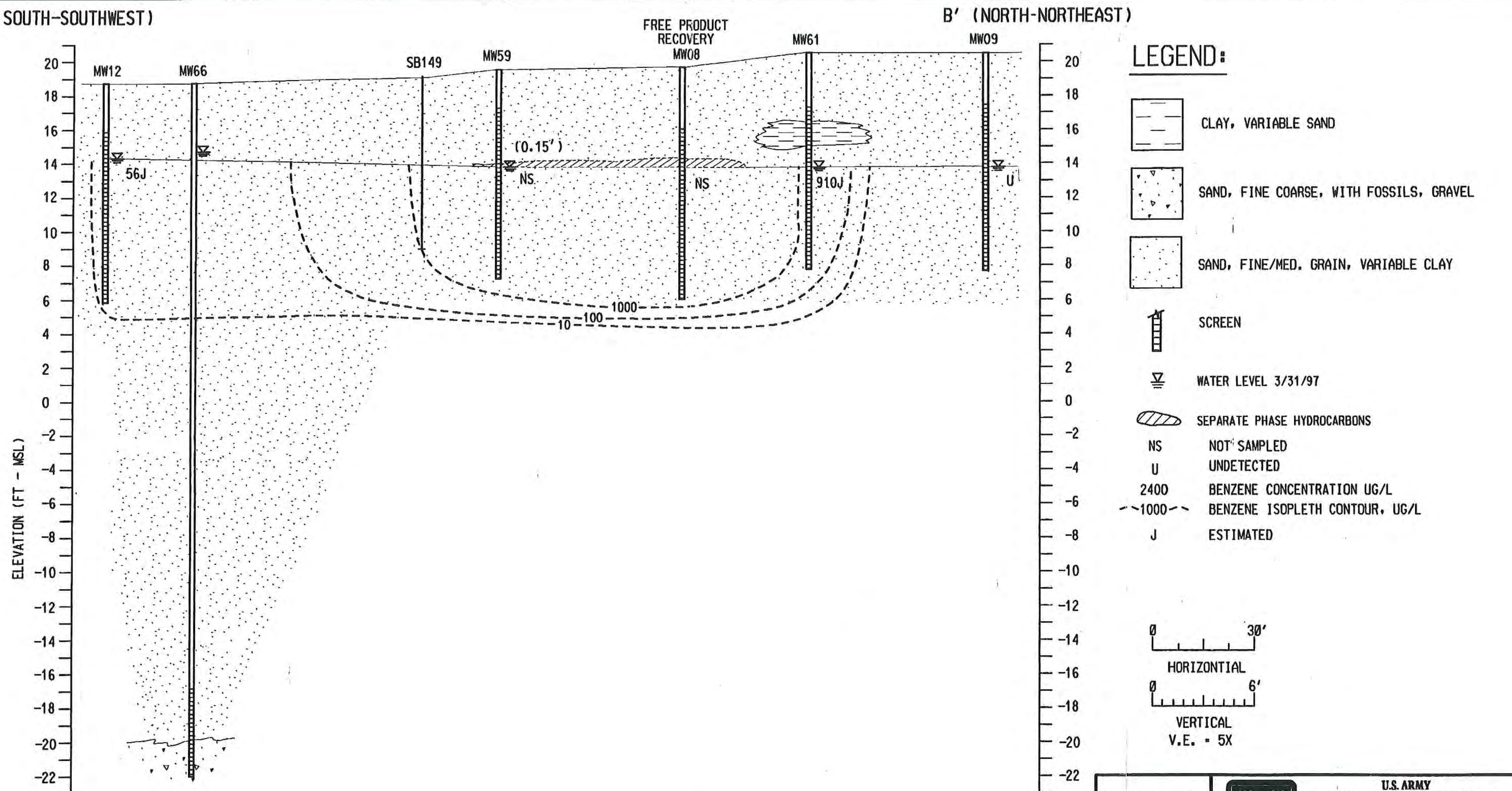


FIGURE 11

U.S. ARMY
ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

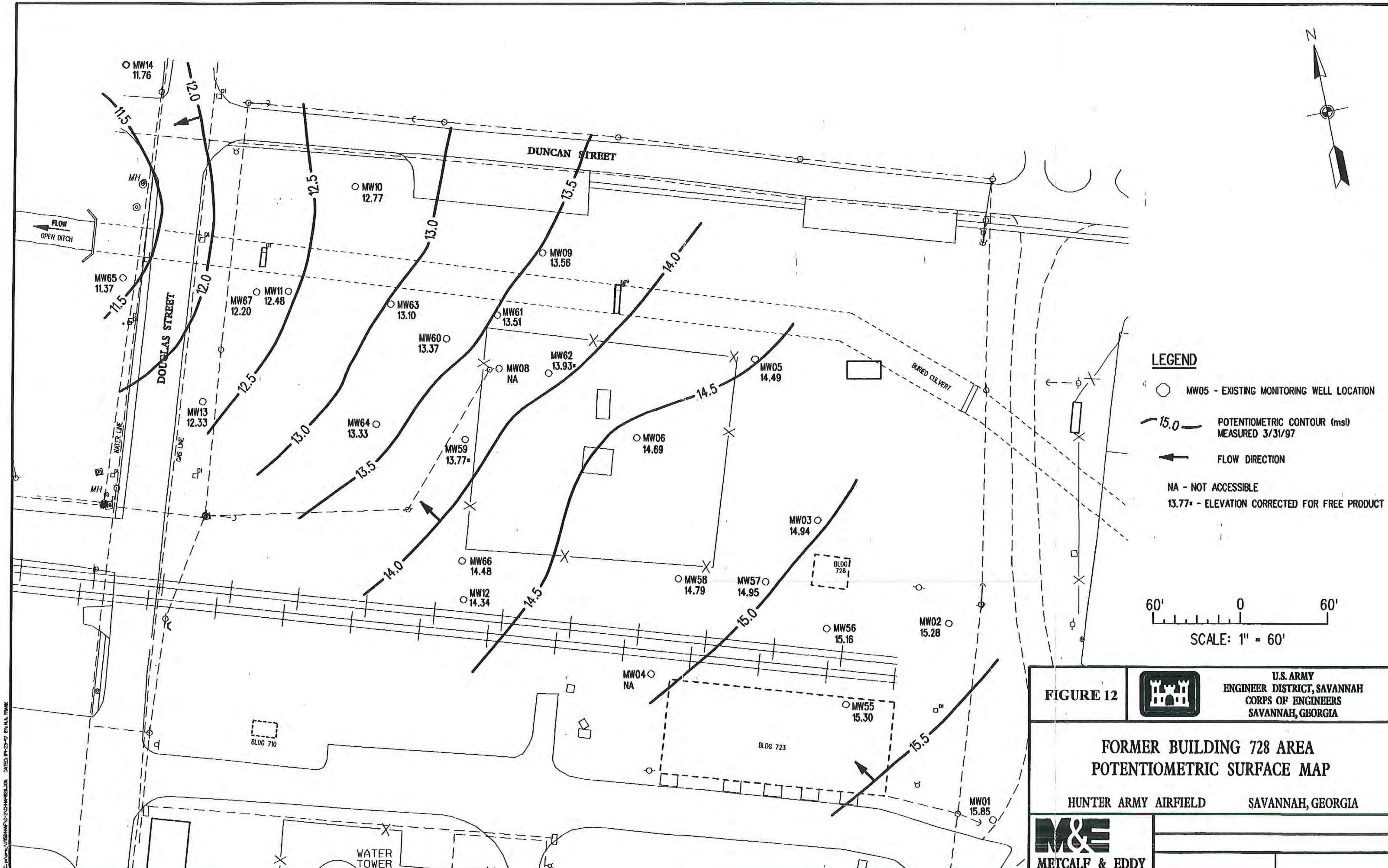
FORMER BUILDING 728
CROSS SECTION B-B'

HUNTER ARMY AIRFIELD SAVANNAH, GEORGIA

METCALF & EDDY

APPROVED:

SCALE: DATE:



N
DUNCAN STREET
DOUGLAS STREET
FLOW
OPEN DITCH
WATER LINE
GAS LINE
BURIED CULVERT
MH
MW14 11.76
MW65 11.37
MW67 12.20
MW11 12.48
MW13 12.33
MW10 12.77
MW63 13.10
MW09 13.56
MW61 13.51
MW60 13.37
MW62 13.93*
MW08 NA
MW64 13.33
MW59 13.77*
MW05 14.49
MW06 14.69
MW03 14.94
MW66 14.48
MW12 14.34
MW58 14.79
MW57 14.95
MW56 15.16
MW02 15.28
MW04 NA
MW55 15.30
MW01 15.85
11.5
12.0
12.5
13.0
13.5
14.0
14.5
15.0
15.5
BLDG 728
BLDG 710
BLDG 723
WATER TOWER
LEGEND
MW05 - EXISTING MONITORING WELL LOCATION
15.0 POTENTIOMETRIC CONTOUR (msl) MEASURED 3/31/97
FLOW DIRECTION
NA - NOT ACCESSIBLE
13.77* - ELEVATION CORRECTED FOR FREE PRODUCT
60' 0 60'
SCALE: 1" = 60'
FIGURE 12
U.S. ARMY ENGINEER DISTRICT, SAVANNAH CORPS OF ENGINEERS SAVANNAH, GEORGIA
FORMER BUILDING 728 AREA
POTENTIOMETRIC SURFACE MAP
HUNTER ARMY AIRFIELD
SAVANNAH, GEORGIA
M&E
METCALF & EDDY

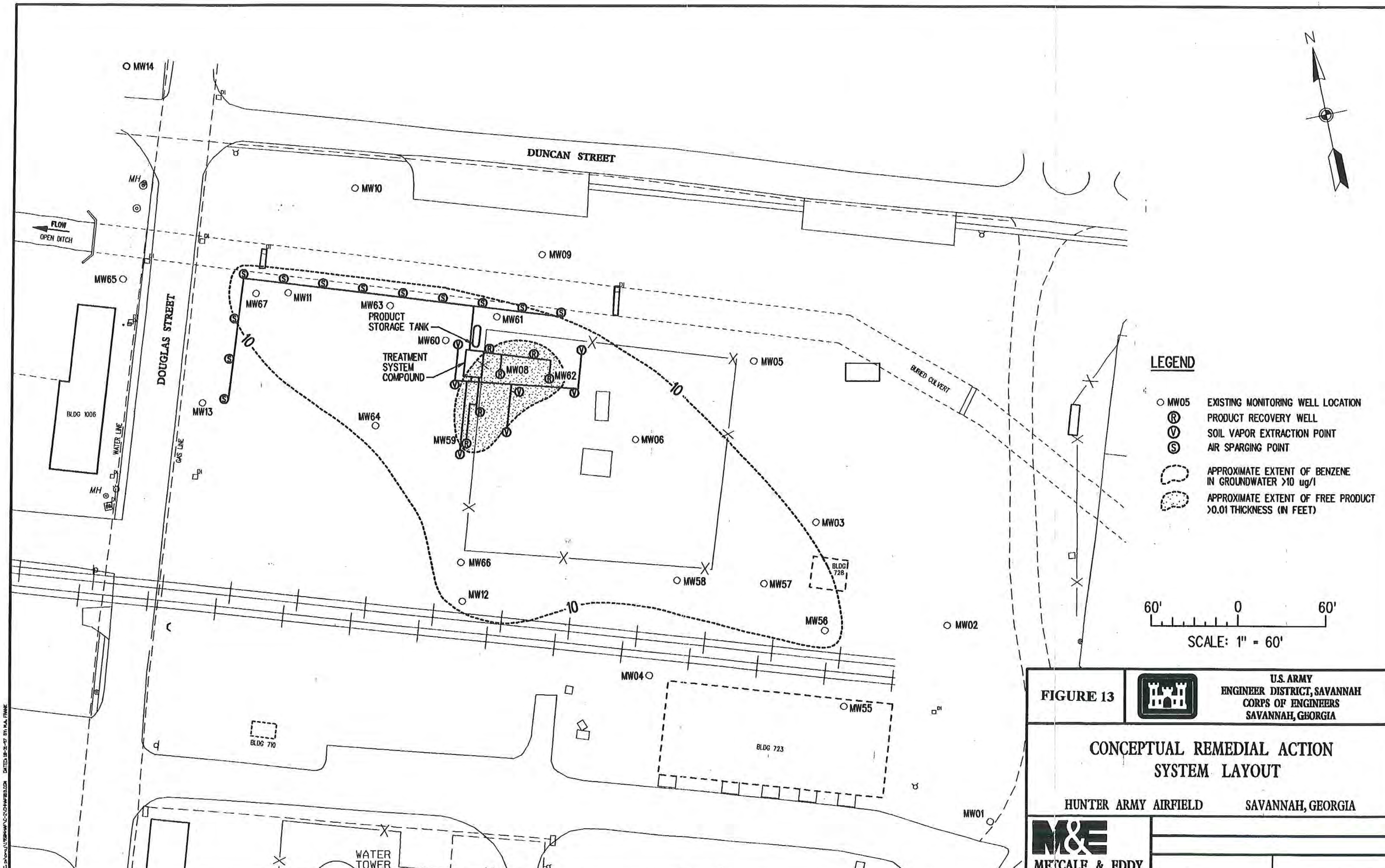
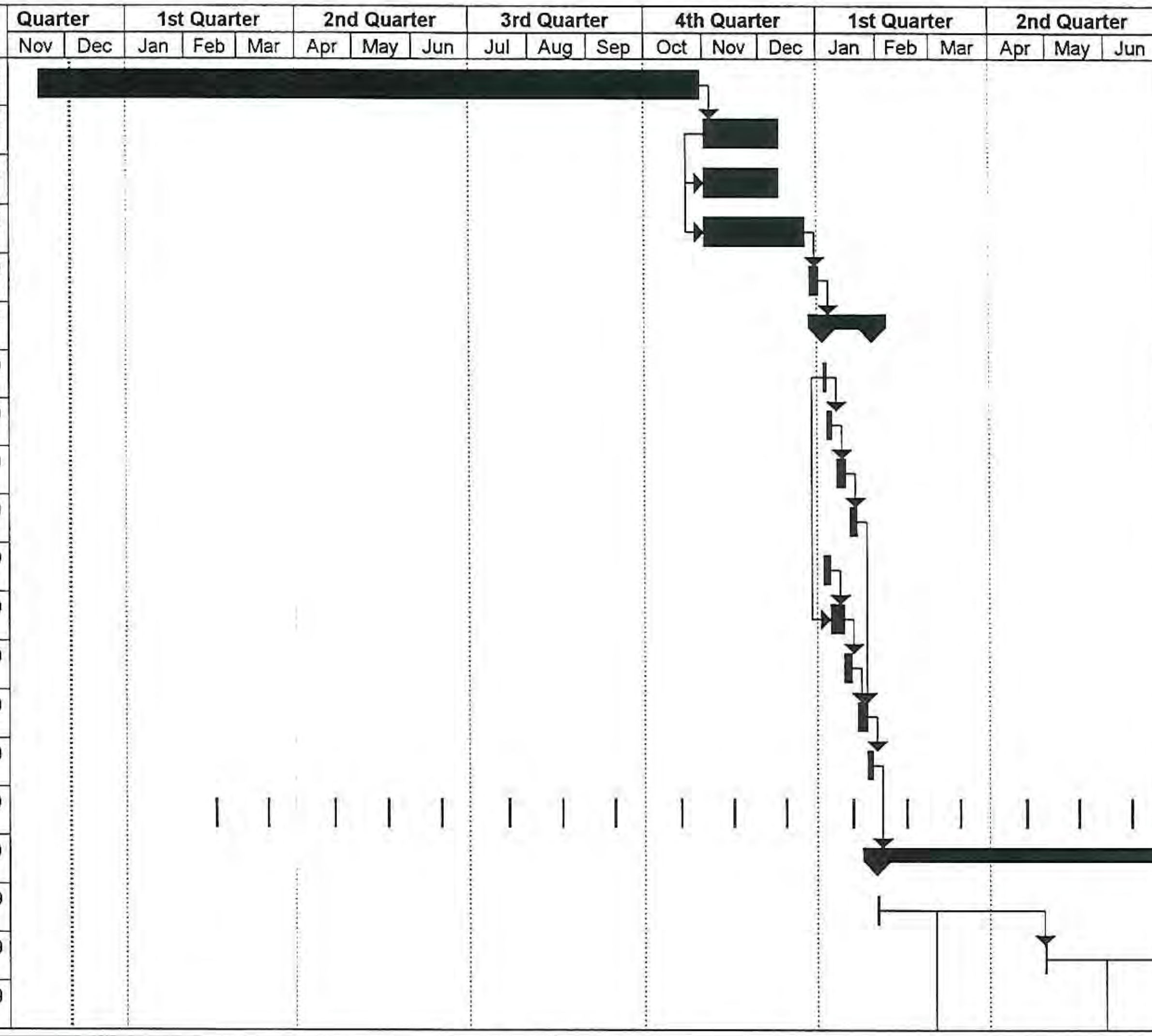


FIGURE 13

CONCEPTUAL REMEDIAL ACTION SYSTEM LAYOUT

FIGURE 14 - Proposed Milestone Schedule
Former Building 728, HAAF
EPD Facility ID: 9-025049

ID	Task Name	Duration	Start	Finish
1	CAP-B review and approval	250d	11/17/97	10/30/98
2	Specifications and plans	30d	11/2/98	12/11/98
3	Permitting	30d	11/2/98	12/11/98
4	Procurement	40d	11/2/98	12/25/98
5	Mobilization for installation	5d	12/28/98	1/1/99
6	**SYSTEM INSTALLATION**	**20d**	**1/4/99**	**1/29/99**
7	Install SPH wells	2d	1/4/99	1/5/99
8	Install SVE wells	3d	1/6/99	1/8/99
9	Install sparge wells	5d	1/11/99	1/15/99
10	Well development	4d	1/18/99	1/21/99
11	Treatment compound con	4d	1/4/99	1/7/99
12	Trenching and plumbing	5d	1/8/99	1/14/99
13	Electrical installation	2d	1/15/99	1/18/99
14	System testing	3d	1/22/99	1/26/99
15	System startup	3d	1/27/99	1/29/99
16	**System maintenance visit**	**546d**	**2/17/98**	**3/21/00**
43	**SYSTEM SAMPLING**	**458d**	**2/1/99**	**11/1/00**
44	1st Quarterly sampling	1d	2/1/99	2/1/99
45	2nd Quarterly sampling	1d	4/30/99	4/30/99
46	3rd Quarterly sampling	1d	8/2/99	8/2/99



Project:
Date: 12/3/97

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress

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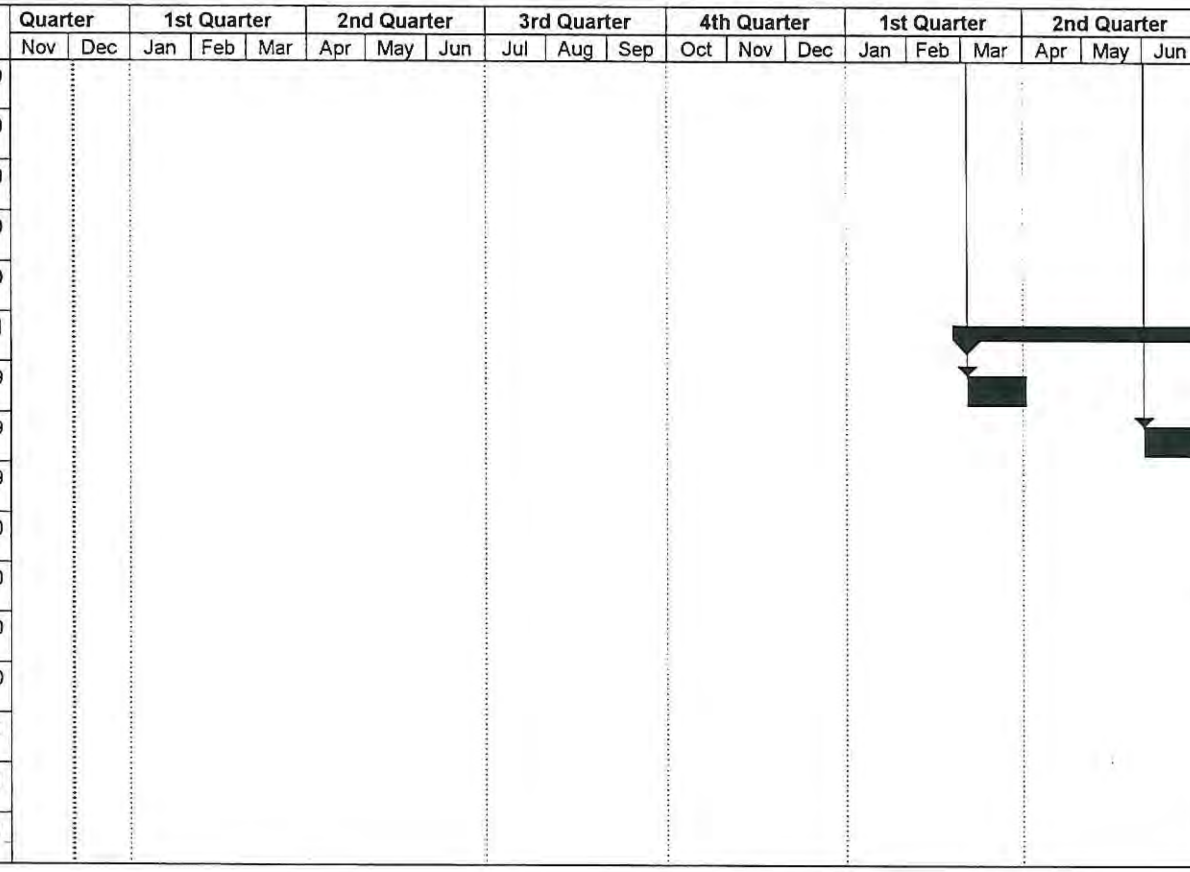
FIGURE 14 - Proposed Milestone Schedule
Former Building 728, HAAF
EPD Facility ID: 9-025049

ID	Task Name	Duration	Start	Finish
47	4th Quarterly sampling	1d	11/2/99	11/2/99
48	5th Quarterly sampling	1d	2/2/00	2/2/00
49	6th Quarterly sampling	1d	5/2/00	5/2/00
50	7th Quarterly sampling	1d	8/1/00	8/1/00
51	8th Quarterly sampling	1d	11/1/00	11/1/00
52	**QUARTERLY REPORTING**	**479d**	**3/4/99**	**1/2/01**
53	Quarterly report #1	22d	3/4/99	4/2/99
54	Quarterly report #2	22d	6/2/99	7/1/99
55	Quarterly report #3	22d	9/2/99	10/1/99
56	Quarterly report #4	22d	12/3/99	1/3/00
57	Quarterly report #5	22d	3/6/00	4/4/00
58	Quarterly report #6	22d	6/2/00	7/3/00
59	Quarterly report #7	22d	9/1/00	10/2/00
60	Quarterly report #8	22d	12/4/00	1/2/01
61	Remedial assessment	22d	1/3/01	2/1/01
62	Prepare recommedations	22d	2/2/01	3/5/01



Project:
Date: 12/3/97

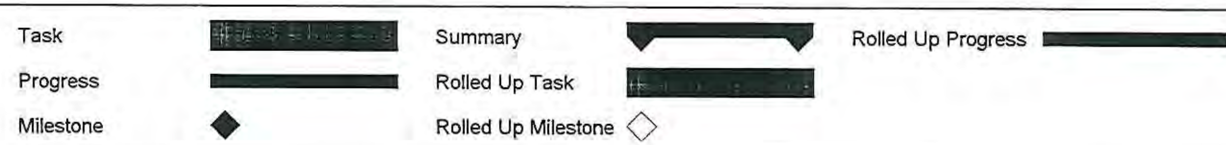


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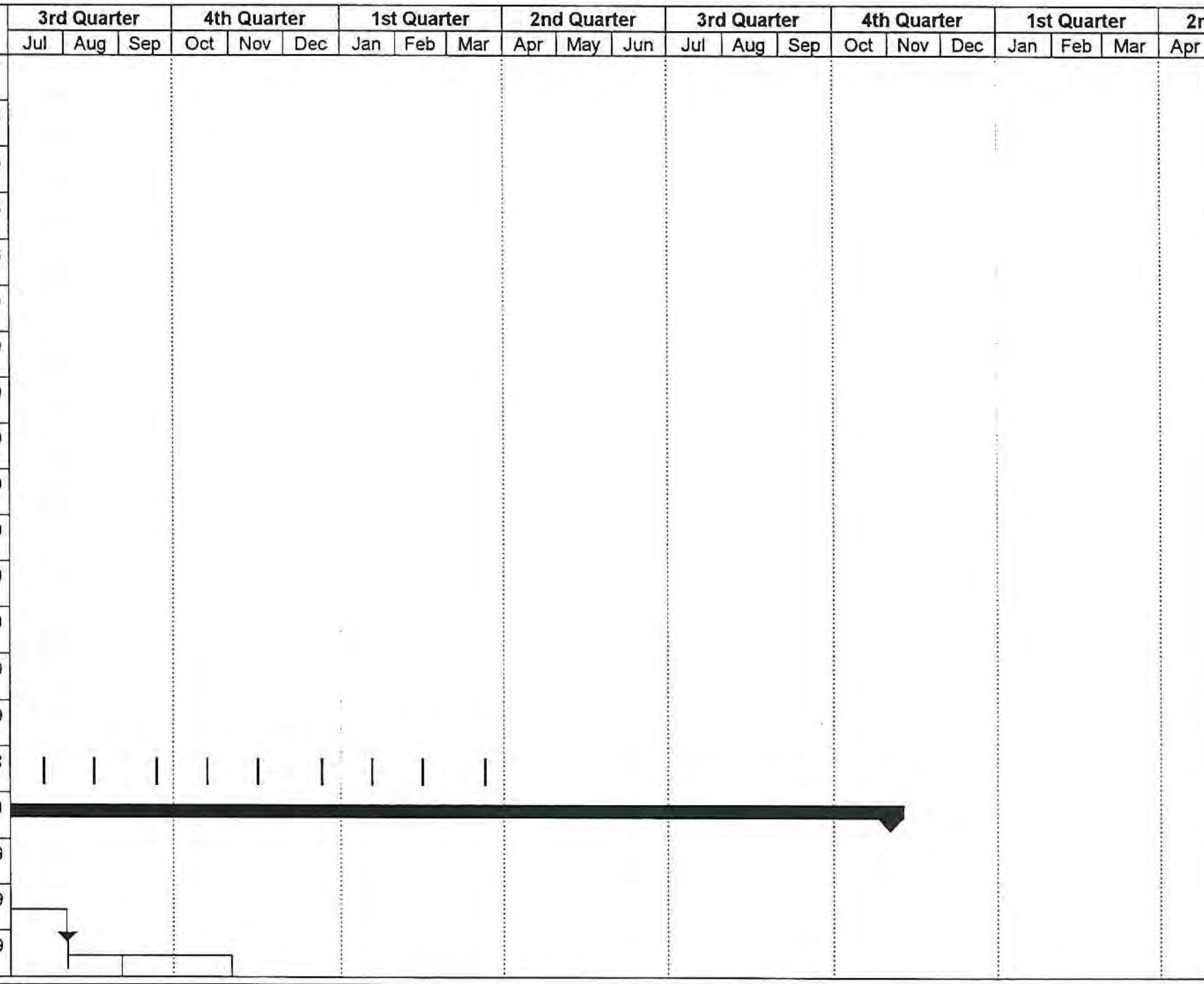
FIGURE 14 - Proposed Milestone Schedule
Former Building 728, HAAF
EPD Facility ID: 9-025049

ID	Task Name	Duration	Start
1	CAP-B review and approval	250d	11/17/97
2	Specifications and plans	30d	11/2/98
3	Permitting	30d	11/2/98
4	Procurement	40d	11/2/98
5	Mobilization for installation	5d	12/28/98
6	**SYSTEM INSTALLATION**	**20d**	**1/4/99**
7	Install SPH wells	2d	1/4/99
8	Install SVE wells	3d	1/6/99
9	Install sparge wells	5d	1/11/99
10	Well development	4d	1/18/99
11	Treatment compound con	4d	1/4/99
12	Trenching and plumbing	5d	1/8/99
13	Electrical installation	2d	1/15/99
14	System testing	3d	1/22/99
15	System startup	3d	1/27/99
16	**System maintenance visit**	**546d**	**2/17/98**
43	**SYSTEM SAMPLING**	**458d**	**2/1/99**
44	1st Quarterly sampling	1d	2/1/99
45	2nd Quarterly sampling	1d	4/30/99
46	3rd Quarterly sampling	1d	8/2/99

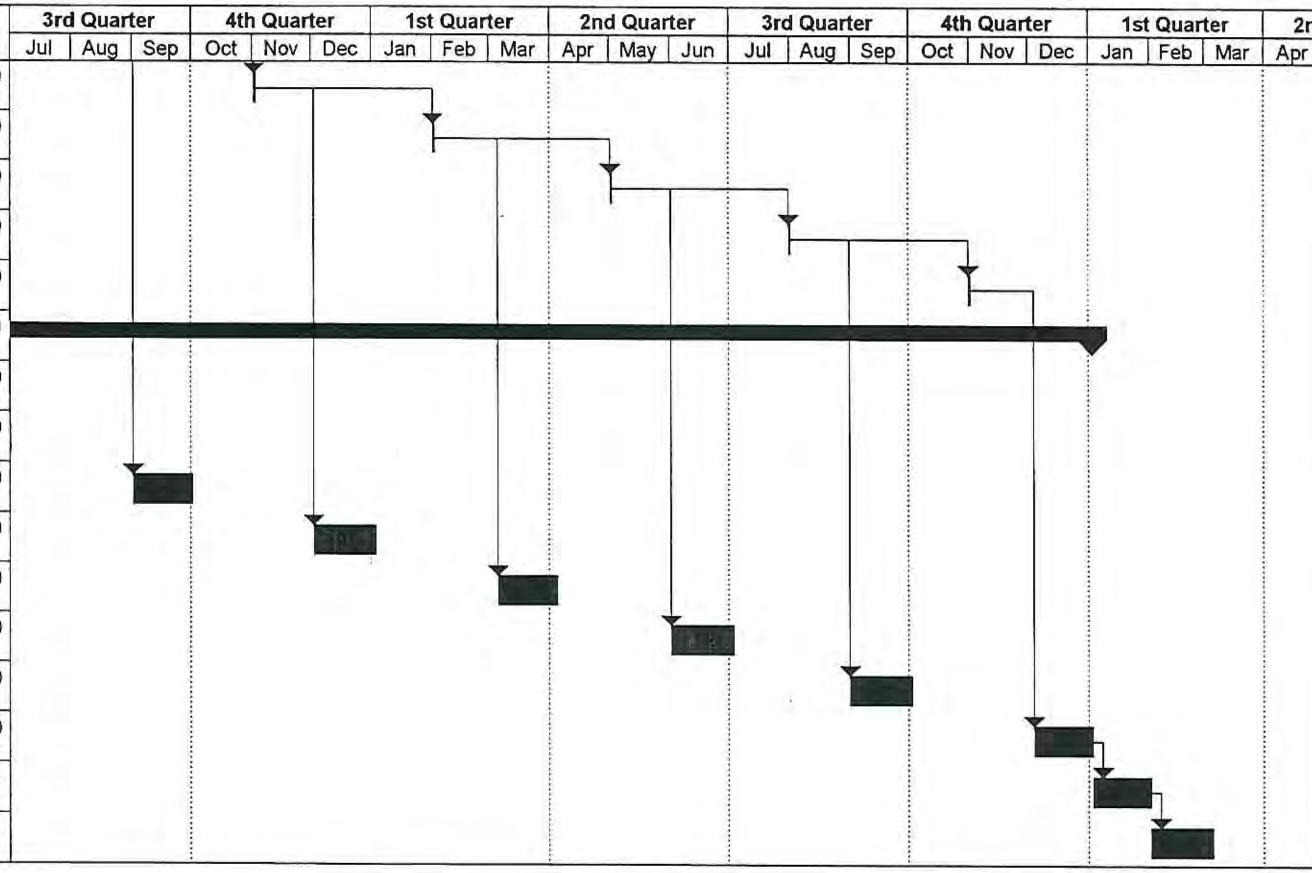


Project:
Date: 12/3/97

Task | Summary | Rolled Up Progress
Progress | Rolled Up Task
Milestone | Rolled Up Milestone

FIGURE 14 - Proposed Milestone Schedule
Former Building 728, HAAF
EPD Facility ID: 9-025049

ID	Task Name	Duration	Start
47	4th Quarterly sampling	1d	11/2/99
48	5th Quarterly sampling	1d	2/2/00
49	6th Quarterly sampling	1d	5/2/00
50	7th Quarterly sampling	1d	8/1/00
51	8th Quarterly sampling	1d	11/1/00
52	**QUARTERLY REPORTING**	**479d**	**3/4/99**
53	Quarterly report #1	22d	3/4/99
54	Quarterly report #2	22d	6/2/99
55	Quarterly report #3	22d	9/2/99
56	Quarterly report #4	22d	12/3/99
57	Quarterly report #5	22d	3/6/00
58	Quarterly report #6	22d	6/2/00
59	Quarterly report #7	22d	9/1/00
60	Quarterly report #8	22d	12/4/00
61	Remedial assessment	22d	1/3/01
62	Prepare recommedations	22d	2/2/01



Project:
Date: 12/3/97

Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress

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APPENDIX A

GEOLOGIC LOGS

Hole No. MW55

DRILLING LOG	DIVISION SAV	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT 728 CAP B	10. SIZE AND TYPE OF BIT 6 1/4", ID HSA
2. LOCATION (Coordinates or Station) SAV, GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY PSI	12. MANUFACTURER'S DESIGNATION OF DRILL CME 75
4. HOLE NO. (As shown on drawing title and file number) MW55	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED: 2; UNDISTURBED: —
5. NAME OF DRILLER K. Durham	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 15.30 MSL
7. THICKNESS OF OVERBURDEN 13.0	16. DATE HOLE — STARTED 2/24/97; COMPLETED 2/24/97
8. DEPTH DRILLED INTO ROCK Ø	17. ELEVATION TOP OF HOLE 18.32 TOC 18.56 Ground
9. TOTAL DEPTH OF HOLE 13.0	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR D. Humphries

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2		SAND: med-fine gr; v dk gy 5YR 3/1, well sorted, dry, silty 20%. (SM)	Post hole to 4'	—	BLOWS NA; OVA, ppm BZ - 0, HS - 200
	2–3		v. dk gy N3/1, Gley.			– odor; in well install; HS - 1000+
	3–4		– Lt. Br. Gy 2.5Y 6/2, wet, tr. mica, silty 5-10% (SM/SW)		4	Original wet sample; Lab
	4–6		SAND - fine-med gr; Gy Br 10YR 5/2, wet, well sorted, tr. heavy mins, loose-firm, silty 5-10% (SW)	54	1	6-6-10-14; BZ - 0, HS - 80
	6–8		Cuttings as above. runny sands	—	Auger	
	8–10		: Gley N5 Gy, wet, tr. mica, hvy minerals, v. loose, silty 5% (SW)	50	2	3-3-23 Lab Geotech
	10–12.5		Cuttings as above		Auger	
	13		E.O.B. @ 13.0'		4	
	14					
	16					
	18					

Split-spoon samples for lithologic definition and/or chemical analysis were collected from 3 to 5 feet below ground surface (BGS) and every 5 feet or lithologic change thereafter (unless otherwise noted).

Hole No. MW 56

DRILLING LOG	DIVISION SAV	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT 728 CAP B	10. SIZE AND TYPE OF BIT 6 1/4" ID HSA
2. LOCATION (Coordinates or Station) SAV GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY PSI	12. MANUFACTURER'S DESIGNATION OF DRILL CME 75
4. HOLE NO. (As shown on drawing title and file number) MW-56	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 4 — UNDISTURBED —
5. NAME OF DRILLER K. Durham	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 15.16' (TOC)
7. THICKNESS OF OVERBURDEN 11.8'	16. DATE HOLE — STARTED 2/24/97 — COMPLETED 2/24/97
8. DEPTH DRILLED INTO ROCK Ø	17. ELEVATION TOP OF HOLE 19.8' Ground
9. TOTAL DEPTH OF HOLE 11.8'	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR D. Humphrs

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2		SAND. Fine-med. Br-Yell 10YR6/6, well sorted silty 5%, tr. heavy mins. dry. - dk gy 10YR4/1, HC odor, moist (SW)	—	(1) Hand auger	Blows NA; OVA, ppm HS-200 BZ 0
	2–4		- as above, - Lt GyBr 2.5Y4/2 - wet (SW)	—	(2) Hand auger	NA; Lab; ▽ initial wet sample; HS-990 BZ 0
	4–6		: as above 2.5Y4/1 dk gy. wet tr. gravel. (SW)	—	(3) Hand auger due to rock	NA; HS-1000+ BZ 0
	6–8		Cuttings as above	—	Auger	
	8–10		DK GyBr 10YR4/2, wet, v.loose, tr. coal, tr. mica, silty 5% well sorted. (SW)	63	4	1-2-2-2 Lab & Geotech; ▽ at well install; HS-NA BZ 0
	10–11.8		cuttings as above	—	—	
	12		REFUSAL - Probable concrete pad E.O.B. @ 11.8 ft			
	14					
	16					
	18					

Split-spoon samples for lithologic definition and/or chemical analysis were collected from 3 to 5 feet below ground surface (BGS) and every 5 feet or lithologic change thereafter (unless otherwise noted).

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Hole No. MW-57

DRILLING LOG	DIVISION SAV.	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT 728 CAP B	10. SIZE AND TYPE OF BIT 6 1/4" ID HSA
2. LOCATION (Coordinates or Station) SAV	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY PSI	12. MANUFACTURER'S DESIGNATION OF DRILL CME75
4. HOLE NO. (As shown on drawing title and file number) MW-57	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 3; UNDISTURBED —
5. NAME OF DRILLER K. Durham	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 14.95'
7. THICKNESS OF OVERBURDEN 14.0'	16. DATE HOLE — STARTED 2/25/97; COMPLETED 2/25/97
8. DEPTH DRILLED INTO ROCK Ø	17. ELEVATION TOP OF HOLE 20.3 Ground
9. TOTAL DEPTH OF HOLE 14.0'	18. TOTAL CORE RECOVERY FOR BORING %
	19. SIGNATURE OF INSPECTOR D. Humphr[illegible]

ELEVATION a	DEPTH b	LEGEND V/c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2		SAND: fine-med; v.dk gy Br 10YR 3/2, tr. gravel, silty 10%, damp - dk Gy 4/2 (SP)	—	1 hand auger	BLOWS NA; OVA, ppm BZ-0 HS-1
	2–4		as above - v. dk. Br 10YR/2/2, damp - wet at bottom well sorted, silty 10% (SM/SW)	—	1 hand auger	NA; Lab; HS-2 BZ-0; ∇ initial wet sample
	4–6		as above; 3" recovery push 2nd Tube			Push Shelby Tube 3" recovery; ∇ HS-NA BZ-0 in well at install
	6–8		No recovery; Cuttings as above 10YR 5/3 Br, tr mica, (SW)	—	Auger	Push Shelby Tube No recovery
	8–10		Lt. olive Br 2.5Y 5/3, well sorted, tr. heavy min., silty 5%, loose. (SW)	71	3	5-6-9-10; Lab Geotech; BZ=0
	10–13.5		Cuttings as above	—	Auger	
	14		E.O.B @ 14.0'			

Split-spoon samples for lithologic definition and/or chemical analysis were collected from 3 to 5 feet below ground surface (BGS) and every 5 feet or lithologic change thereafter (unless otherwise noted).

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

Hole No. MW-58

DRILLING LOG	DIVISION SAVA	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT 728 CAP B	10. SIZE AND TYPE OF BIT 6 1/4" ID HSA
2. LOCATION (Coordinates or Station) SAV	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY PSI	12. MANUFACTURER'S DESIGNATION OF DRILL CME 75
4. HOLE NO. (As shown on drawing title and file number) MW 58	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 3 — UNDISTURBED 1
5. NAME OF DRILLER K. Durham	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED ___ DEG. FROM VERT.	15. ELEVATION GROUND WATER 14.98'
	16. DATE HOLE — STARTED 2/25/97 — COMPLETED 2/25/97
7. THICKNESS OF OVERBURDEN 14.0'	17. ELEVATION TOP OF HOLE 19.4'
8. DEPTH DRILLED INTO ROCK Ø	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 14.0'	19. SIGNATURE OF INSPECTOR D. Humphries

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2		SAND: fine-med, v.dk Gy 10YR 3/1 to gray 5/1, well sorted, silty 5%, moist tr. heavy min. (SW)	hand auger	1	BLOWS NA; OVA, ppm: HS - 1.2, BZ - 0
	2–4		No recovery; cuttings as above	0	2	Shelby Tube No recovery; BZ - 0, HS - NA; in well at install
	4–6		: GyBr 10YR 5/2 well sorted, wet silty 5%, HC odor, v.loose-firm. (SW)	71	3	2-8-14-20 ▽ Lab + Geotech; Initial wet sample; BZ - 0, HS = 1000+
	6–8		Cuttings as above	—	Auger	3" spoon
	8–10		Lt. yell Br. 2.5Y 6/3 — olive Gy 5Y 4/2. as above HC odor SW	50	4	5-5-7-10; BZ = 0
	10–14		Cuttings as above	—	Auger	Attempt Shelby Tube 10-12 about 80% recovery
	14		E.O.B. @ 14.0'			

Split-spoon samples for lithologic definition and/or chemical analysis were collected from 3 to 5 feet below ground surface (BGS) and every 5 feet or lithologic change thereafter (unless otherwise noted).

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

Hole No. MW59

DRILLING LOG	DIVISION SAV	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT 728 CAP B	10. SIZE AND TYPE OF BIT 6 1/4" ID HSA
2. LOCATION (Coordinates or Station) SAV	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY PSI	12. MANUFACTURER'S DESIGNATION OF DRILL CME75
4. HOLE NO. (As shown on drawing title and file number) MW59	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 3 — UNDISTURBED 1
5. NAME OF DRILLER K. Durham	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 13.79'
	16. DATE HOLE — STARTED 2/26/97 — COMPLETED 2/26/97
7. THICKNESS OF OVERBURDEN 14.0'	17. ELEVATION TOP OF HOLE 19.4
8. DEPTH DRILLED INTO ROCK Ø	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 14.0'	19. SIGNATURE OF INSPECTOR D. Humphrey

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2		SAND: fine-med; mostly dk gy 10YR 4/1, clayey 10-30%, wellsorted, dry. HC odor (SC)	hand auger	1	BLOWS NA — OVA, ppm HS - 94 BZ - 0
	2–4		as above — most 10YR 6/1 Gy. HC odor	100	2	Push Shelby Tube — BZ - NA HS - 0
	4–6		: Lt BrGy - 6/2, wellsorted, silty 10% HC odor, firm, wet (SW)	79	3	12-17-17-17 Lab — ⊻ initial wet sample — ⊻ in well at install — BZ - 0 HS - 1000+
	6–8		Cuttings as above	—	—	
	8–10		~Gy 5Y 5/1, as above, v.loose-loose, tr. heavy min & mica, HC odor (SW)	63	4	3-6-7-9 Lab BZ-0
	10–14		Cuttings as above	—	—	
	14		E.O.B. @ 14.0'			

Split-spoon samples for lithologic definition and/or chemical analysis were collected from 3 to 5 feet below ground surface (BGS) and every 5 feet or lithologic change thereafter (unless otherwise noted).

Hole No. MW60

DRILLING LOG	DIVISION SAV DIST.	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: 728 CAP B
2. LOCATION (Coordinates or Station): SAV
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): MW-60
5. NAME OF DRILLER: PSI
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 15.0'
8. DEPTH DRILLED INTO ROCK: Ø
9. TOTAL DEPTH OF HOLE: 15.0'
10. SIZE AND TYPE OF BIT: 6 1/4" ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: CME 75
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5; UNDISTURBED —
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 13.37'
16. DATE HOLE: STARTED 2/26/97; COMPLETED 2/26/97
17. ELEVATION TOP OF HOLE:
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Humphr[illegible]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2		SAND: fine-med gr, Yell-Br 10YR 5/6, well sorted, silty 10-20%, moist, tr. heavy mins, (SM)	hand auger	1	BLOWS: NA; Lab; OVA, ppm: HS-40, BZ-0
	2–4		: Yell Br + Gy Br mottling, clayey 30-40% moist, (SC)	hand auger	2	NA; BZ-0, HS-8
	4–5.8		CLAY: sandy 30-40%, plastic, moist, v. soft to firm. (CL)	79	3	2-2-4-6; BZ-0, HS-6
	5.8–6		SAND: Lt Br Gy 10YR, silty 20% (SM)			
	6–8		cuttings as above tr. heavy mins.	—	Auger	▽ initial wet cuttings; ▽ in well at install
	8–10		: Lt. Gy 10YR 7/1, well sorted, silty 5%, wet, lt greenish thin clay laminae, loose-firm. (SC/SW)	50	4	3" spoon 6-7-14-16; Geotech; BZ-0, HS-1000+
	10–13		Cuttings mix of above	—	Auger	
	13–15		: Gley N4/ dark gy. wet, well sorted thin clay laminae, v. loose-loose, clay 20-30% (SC/SW)	50.	5	3" spoon 2-1-4-5; Lab; BZ=0
	15		E.O.B 15.0' bgs			

Split-spoon samples for lithologic definition and/or chemical analysis were collected from 3 to 5 feet below ground surface (BGS) and every 5 feet or lithologic change thereafter (unless otherwise noted).

Hole No. MW61

DRILLING LOG	DIVISION SAV DIST.	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT 728 CAP B	10. SIZE AND TYPE OF BIT 6 1/4" ID HSA
2. LOCATION (Coordinates or Station) SAV	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY PSI	12. MANUFACTURER'S DESIGNATION OF DRILL CME 75
4. HOLE NO. (As shown on drawing title and file number) MW-61	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 5; UNDISTURBED —
5. NAME OF DRILLER K. Durham	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 13.51'
	16. DATE HOLE — STARTED 2/26/97; COMPLETED 2/26/97
7. THICKNESS OF OVERBURDEN 15.0'	17. ELEVATION TOP OF HOLE 20.5'
8. DEPTH DRILLED INTO ROCK Ø	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 15.0'	19. SIGNATURE OF INSPECTOR D. Humphris

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2		SAND: fine-med; 6Y3R 10YR5/2 - Lt Br Gy - 6/2, dry, clayey - 20% (SC)	hand auger	1	BLOWS NA; OVA, ppm BZ-0, HS-28
	2–4		: dk Gy 10YR 6/1, damp, silty 10%, well sorted, tr. heavy mins. - Yell Br 5/6 clayey - 40% (SC) gray - 5/1 (SM/SW)	hand auger	2	NA; BZ-0, HS-40
	4–6		CLAY - Yell Br. 10YR 5/4, plastic, v. soft-firm, sandy 30%. - SAND - fine-med - gy br 5/2, moist, clayey 25% (SC)	92	3	1-4-4-8 Lab; BZ-0, HS-92
	6–8		- as above, wet, tr heavy mins. (SC)	—	Auger	▽ initial wet sample; ▽ in well at install
	8–10		: Gy 10YR 5/1, silty 5%, tr. heavy mins. wet, v. loose - loose, HC odor charcoal gray (SW)	54	4	2-2-3-7; BZ-0
	10–13		Cuttings mix of above	—	Auger	
	13–15		: as above	58	5	5-8-9-7 Lab + Geotech; BZ=0
	15		E.O.B. @ 15.0' bgs			

Split-spoon samples for lithologic definition and/or chemical analysis were collected from 3 to 5 feet below ground surface (BGS) and every 5 feet or lithologic change thereafter (unless otherwise noted).

Hole No. MW62.

DRILLING LOG	DIVISION SAV DIST.	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT 728 CAPB	10. SIZE AND TYPE OF BIT 6 1/4" ID HSA
2. LOCATION (Coordinates or Station) SAV.	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY PSI	12. MANUFACTURER'S DESIGNATION OF DRILL CME 75
4. HOLE NO. (As shown on drawing title and file number) MW-62	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 5 — UNDISTURBED —
5. NAME OF DRILLER K. Durham	14. TOTAL NUMBER CORE BOXES —
	15. ELEVATION GROUND WATER 13.22'
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.	16. DATE HOLE — STARTED 2/27/97 — COMPLETED 2/27/97
7. THICKNESS OF OVERBURDEN 15.0'	17. ELEVATION TOP OF HOLE 19.9'
8. DEPTH DRILLED INTO ROCK Ø	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 15.0'	19. SIGNATURE OF INSPECTOR D. Humphries

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2		SAND: fine-med; Gy 10YR5/1, well sorted, clayey 10-20%, HC odor, tr. mica. (SC)	hand auger	1	BLOWS NA — OVA ppm BZ-0 HS-350
	2–4		: Lt Br Gy -6/2, HC odor, well sorted clay 10-20%, tr. mica + heavy mins. (SC/SW)	hand auger	2	NA — BZ-0 HS-1000+
	4–6		: Olive Br 2.5Y 4/3, v. loose, HC odor, well sorted, clay 10-30% in laminae ← wet (SW/SC)	75	3	1-1-1-2 Lab ≅ initial wet sample — BZ-0 HS-1000+
	6–8		cuttings mix of above	—	↑ Auger ↓	
	8–10		as above, tr organics roots, darker zones 1/2" thick. SC	50	4	3-2-2-3 Geotech — BZ-0
	10–13		Cuttings mix of above	—	↑ Auger ↓	
	13–15		3" clay: SAND: well sorted, Gy 2.5Y 6/1, tr. heavy mins + mica, silty 5%, wet, v. loose-loose. (SW)	67	5	3-3-7-8 Lab — BZ-0
			E.O.B. @ 15.0' bgs			

Split-spoon samples for lithologic definition and/or chemical analysis were collected from 3 to 5 feet below ground surface (BGS) and every 5 feet or lithologic change thereafter (unless otherwise noted).

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Hole No. MW-6B

DRILLING LOG	DIVISION SAV DIST	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: 728 CAP B
2. LOCATION (Coordinates or Station): SAV
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): MW-6B
5. NAME OF DRILLER: K. Durham
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 15.0'
8. DEPTH DRILLED INTO ROCK: Ø
9. TOTAL DEPTH OF HOLE: 15.0'
10. SIZE AND TYPE OF BIT: 6 1/4" ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: CME 75
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5 | UNDISTURBED —
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 13.10'
16. DATE HOLE: STARTED 2/26/97 | COMPLETED 2/26/97
17. ELEVATION TOP OF HOLE: 20.3'
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Humphris

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2		SAND fine-med; yell 10YR 7/6, well sorted, silty 5-10%, moist, tr. heavy minerals (SW)	hand auger	1	BLOWS NA; Lab; OVA, ppm BZ-0 HS-52
	2–4		CLAY- Sandy 30-40%, Gy Br 10YR5/2 & Yell Br -5/4, plastic, dry-damp. (CL)	hand auger	2	NA; BZ-0 HS-0
	4–6		: as above, v. soft to firm; grading to; SAND - clayey 10-20%, Lt Br Gy 10YR 6/2 moist, (SC)	71	3	2-4-5-7; BZ-0 HS-1.0
	6–8		Cuttings mix of above	—	Auger	∇ initial wet cuttings ∇ in well at install
	8–10		: Lt. Gy 10YR 7/1, tr. green thin clay laminae, well sorted, v. loose-loose, wet, tr. heavy minerals (SC/SW)	50	4	3" spoon 3-7-6-10; Geotech; BZ-0
	10–13		Cuttings as above.	—	Auger	
	13–15		: dk Gy Gley N/4; well sorted, wet tr mica & heavy mins, silty 5%. v loose-firm. (SW)	60	5	3" spoon 4-4-4-11; Lab; BZ=0
			E.O.B. @ 15.0'			

Split-spoon samples for lithologic definition and/or chemical analysis were collected from 3 to 5 feet below ground surface (BGS) and every 5 feet or lithologic change thereafter (unless otherwise noted).

Hole No. MW64

DRILLING LOG	DIVISION SAU DIST.	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: 728 CAP B
2. LOCATION (Coordinates or Station): SAV
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): MW-64
5. NAME OF DRILLER: K. Durham
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 15.0'
8. DEPTH DRILLED INTO ROCK: Ø
9. TOTAL DEPTH OF HOLE: 15.0'
10. SIZE AND TYPE OF BIT: 6 1/4" ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: CME 75
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5; UNDISTURBED —
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 13.33'
16. DATE HOLE: STARTED 2/27/97; COMPLETED 2/27/97
17. ELEVATION TOP OF HOLE: 19.1'
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Humphries

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2		SAND: fine-med; Yell Br 10YR 5/6, well sorted, silty 5-10%, tr. heavy mins, dry. (SW)	hand auger	1	Blows NA; OVA, ppm BZ - 0, HS - 14
	2–4		as above, clayey 25%, moist (SC)	hand auger	2	NA Lab; BZ - 0, HS - 250
	4–6		Lt Br Gy, 10YR 6/2, as above SC v. loose - loose. - clean sand - well sorted, silt 5%. tr heavy min. (SW)	75	3	3-5-9-10 in well at install; ▽ initial wet sample; BZ - 0, HS - 22
	6–8		cuttings mix of above	—	Auger	
	8–10		as above, silty 20% v. loose - firm, wet (SM) - Gy - 5/1 - well sorted, silty 5%, tr. mica, heavy mins. (SW)	67	4	3-7-10-11 Geotech; BZ - 0
	10–13		Cuttings mix of above	—	Auger	
	13–15		Gy. as above. v. loose - v. firm. (SW)	54	5	4-8-14-22 Lab; BZ - 0
	15		E.O.B. @ 15.0' bgs			

Split-spoon samples for lithologic definition and/or chemical analysis were collected from 3 to 5 feet below ground surface (BGS) and every 5 feet or lithologic change thereafter (unless otherwise noted).

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. | PROJECT | HOLE NO.

Hole No. MW 65

DRILLING LOG	DIVISION SAV DIST	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: 728 CAP B
2. LOCATION (Coordinates or Station): SAV GA
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): MW 65
5. NAME OF DRILLER: K. Durham
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 15.0'
8. DEPTH DRILLED INTO ROCK: ∅
9. TOTAL DEPTH OF HOLE: 15.0'
10. SIZE AND TYPE OF BIT: 6 1/4" ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: CME 75
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5 | UNDISTURBED —
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 11.37'
16. DATE HOLE: STARTED 2/28/97 | COMPLETED 2/28/97
17. ELEVATION TOP OF HOLE: 18.6'
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Humphries

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2		SAND: v. dk gy Br 10YR4/2, fine-med; silty 5-10%, well sorted, dry, tr gravel at top., rocks (SP/SW)	hand auger	1	BLOWS NA; OVA, ppm BZ-0 HS-3.5
	2–4		: as above (SW); clayey 10-30%, damp (SC)	hand auger	2	NA, offset 2' NW; Lab; BZ-0 HS-30
	4–5		Cuttings as above	Auger		BZ-0 HS-3
	5–7		SAND: fine-med; Gy Br 10YR 5/2, well sorted, tr. heavy mins, damp-wet, v. loose-loose, clayey 30-10% (SC/SW)	63	3	3-4-5-7; ▽ initial wet sample
	7–8		cuttings as above	—	Auger	▽ in well at install
	8–10		: Lt Br Gy 2.5Y 6/2, tr. mica + heavy mins, loose, (SW); ← Gy-5/1, tr. mica + heavy mins, + thin clay laminae, clayey 5-10% (SC/SW)	71	4	5-4-4-10; Geotech; BZ-0
	10–13		cuttings as above	—	Auger	
	13–15		as above, tr gravel, (SP)	50	5	2-3-5-6; Lab; BZ-0
	15		E.O.B. @ 15.0'			

Split-spoon samples for lithologic definition and/or chemical analysis were collected from 3 to 5 feet below ground surface (BGS) and every 5 feet or lithologic change thereafter (unless otherwise noted).

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. | PROJECT | HOLE NO.

Hole No. MW66

DRILLING LOG	DIVISION SAV DIST.	INSTALLATION HAAF	SHEET 1 OF 2 SHEETS

1. PROJECT 728 CAP B	10. SIZE AND TYPE OF BIT 6 1/4" ID HSA
2. LOCATION (Coordinates or Station) SAV GA	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY PSI	12. MANUFACTURER'S DESIGNATION OF DRILL CME 75
4. HOLE NO. (As shown on drawing title and file number) MW 66	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 10, UNDISTURBED 0
5. NAME OF DRILLER K. Durham	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER 14.48'
	16. DATE HOLE — STARTED 2/27/97, COMPLETED 2/27/97
7. THICKNESS OF OVERBURDEN 42.0'	17. ELEVATION TOP OF HOLE 18.8'
8. DEPTH DRILLED INTO ROCK Ø	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 42.0'	19. SIGNATURE OF INSPECTOR D. Humphr

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2		SAND: fine-med, black 10YR 2/1, well sorted, silty 10%, dry — 4 Gy-7/2 - silty 5%, tr. heavy mins. (SM/SW)	hand auger	1	BLOWS NA; OVA, ppm BZ-0 HS-0.2
	2–4		as above, moist, tr. mica & heavy mins. (SW)	hand auger	2	NA; in well ∇ @18hr; BZ-0 HS-0.4
	4–6		: dk Gy 10YR 4/1, well sorted, silty 5%, firm - v. firm, tr. mica & heavy mins, wet. (SW)	63	3	3" spoon 12-22-22-21 ∇ initial wet sample; Lab; BZ-0 HS-20
	6–8		Cuttings as above	—	Auger	
	8–10		: as above Lt Br Gy-6/2 to Gy-6/1 v. loose - loose, wet, well sorted. (SW)	50	4	2" spoons 3-6-7-10; BZ-0
	10–13		cuttings mix of above - runny sands	-	Auger	
	13–15		: Gy 10YR 5/1 as above, loose - v. firm. piece of brick? at top. (SW)	50	5	7-14-22-28; BZ=0
	15–18		Cuttings mix of above	—	Auger	
	18–20		as above, uniform, loose - firm. 2mm clay thin laminae (SW)	79	6	7-16-16-11; BZ=0
	20–23		Cuttings as above		Auger	
	23–25		: as above, variable clay - 10-40% v. loose - firm. (SC)	79	7	4-9-10-13; BZ=0
	26					

Split-spoon samples for lithologic definition and/or chemical analysis were collected from 3 to 5 feet below ground surface (BGS) and every 5 feet or lithologic change thereafter (unless otherwise noted).

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT | HOLE NO.

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE			Hole No. MW 66
PROJECT 728 CAP B	INSTALLATION HAAF			SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	26		Cuttings as above	—	Auger	BLOWS / OVA, ppm
	28		: Sand as above Gy 10YR5/1 to Gy 5Y 5/1, well sorted, tr mica + heavy mins, silty 5-10%, firm-dense, wet. (SW)	50	8	15-18-28-32 BZ-0
	30		Cuttings as above	—	Auger	
	32					
	34		: fine - Med gr., coarse, Gy-Gy 5GY5/1, poor sorting, clayey 10-25%, wet. clay thin laminae, to pebble, (SC) loose - v. dense.	50	9	10-30-50/4 Geotech BZ-0
	36		Cuttings as above.	—	Auger	
	38		as above; gravelly 10%, coarse sand, broken shells, clayey 10-30% (SP)	46	10	10-22-50/6 BZ-0
	40		Cuttings as above	—	Auger	
	42		E.O.B. @ 42.0' bgs			
	44					
	46					
	48					
	50					

Hole No. MW 67

DRILLING LOG	DIVISION SAV DIST	INSTALLATION HAAF	SHEET 1 OF 2 SHEETS

1. PROJECT: 728 CAPB
2. LOCATION (Coordinates or Station): SAV GA
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): MW67
5. NAME OF DRILLER: K. Durham
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 40.0'
8. DEPTH DRILLED INTO ROCK: Ø
9. TOTAL DEPTH OF HOLE: 40.0'
10. SIZE AND TYPE OF BIT: 6 1/4" ID HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: CME 75
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 10; UNDISTURBED 1
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 12.20'
16. DATE HOLE: STARTED 2/28/97; COMPLETED 2/28/97
17. ELEVATION TOP OF HOLE: 19.01
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Humphris

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–1.5		SAND: fine-med; yellBr 10YR 5/4 + Gy 5/1 clayey 10-25%, dry, well sorted (SC)	hand auger	1	BLOWS: NA; OVA, ppm: BZ-0, HS-0
	2		Clay - sandy 30-40%, med plastic, dry (CL)			
	2–4		as above (CL)	hand auger	2	NA; BZ-0, HS-0
	4–6		SAND: Lt. Br Gy -6/2. moist, clayey 30-10%, tr. heavy mins, v. loose-loose. (SC) (SW)	67	3	3" spoon 3-8-10-10 Lab; BZ-0, HS-0
	6–8		as above, from end of Shelby Tube	100	Undist (4)	Push Shelby Tube - wet sample
	8–10		as above, v. loose - firm, wet, well sorted, tr. mica + heavy mins silty 5-10% — dk Gy Gley N4/, slight HC odor (SW)	75	4	2" spoon 4-8-8-12; BZ-0, HS-650
	10–13.5		Cuttings mix of above	—	Augr	
	13.5–15.5		: as above, v. loose - loose silty 0-5% (SW)	50	5	3-6-7-8; BZ-0, HS-42
	15.5–18.5		Cuttings mix of above	—	Auger	
	18.5–20.5		: as above, uniform. (SW)	100	6	4-7-11-11; BZ=0, HS-80
	20.5–23.5		Cuttings as above running sands	—	Auger	running sands in auger Flush w/ 20 gals pot. water
	23.5–25.5		: as above: dk Gr Gy Gley 5G 4/1. loose - v. firm (SW) — clayey 20-30% (SC)	50	7	5+12-12-24; BZ-0, HS=3
	25.5–26				Auger	

Split-spoon samples for lithologic definition and/or chemical analysis were collected from 3 to 5 feet below ground surface (BGS) and every 5 feet or lithologic change thereafter (unless otherwise noted).

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE

Hole No. MW67

PROJECT: 728 CAP B | INSTALLATION: HAAF | SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	26		see previous page SAND: fine-med; wellsorted, wet, DK GrGy Gley 5G4/1, tr. mica + heavy mins. clayey 0-10% (SW)	-	Auger	BLOWS / OVA, ppm
	28		as above; micro horiz. laminae at bottom, tr. clay 5% loose-v. dense. (SW)	75	8	10-21-50/6 / BZ-0 HS-25
	30 – 32		Cuttings as above	-	Auger	
	34		: DK GrGy Gley 5G 4/1, fine-coarse gr, clay laminae at bottom, firm-v. dense clayey 5-30% wellsorted, wet. (SC SW)	50	9	11-21-24-50/5 / BZ-0 HS-0
	36		Cuttings as above	-	Auger	
	38		CLAY - DK Gr Gy Gley 5G4/1. sandy 10-40% sandy laminae, low plastic, dry. stiff-v.stiff (CL)	95	10	12-14-16-16 / BZ-0 HS-4
	40		E.O.B. @ 40 ft bgs			
	42					

Hole No. SB 149

DRILLING LOG	DIVISION SAV DIST	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT 728 CAP B	10. SIZE AND TYPE OF BIT 6 1/4" ID HSA
2. LOCATION (Coordinates or Station) SAV	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY PSI	12. MANUFACTURER'S DESIGNATION OF DRILL CME 75
4. HOLE NO. (As shown on drawing title and file number) SB 149	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 4 — UNDISTURBED 0
5. NAME OF DRILLER K. Durham	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER —
	16. DATE HOLE — STARTED 3/1/97 — COMPLETED 3/1/97
7. THICKNESS OF OVERBURDEN 10.0'	17. ELEVATION TOP OF HOLE 19.1'
8. DEPTH DRILLED INTO ROCK ø	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 10.0'	19. SIGNATURE OF INSPECTOR D. Humphs

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2		Sand: med-coarse, yell-Br 10YR 5/6, poor sorting, tr. pebbles, silt - 5%, fill (SP)	hand auger	1	Blows NA; OVA, ppm BZ - 0 HS - 0
	2–4		: as above. (SP)	hand auger	2	NA; BZ - 0 HS - 5
	4–6		: as above, v. loose (SP) – wet; black staining, HC odor, fine-coarse	100	3	1-1-1-1 # initial Lab wet sample; BZ - 0 HS - 800
	6–8		Cuttings mix of above	—	Auger	
	8–10		: fine-med, Gy 10YR 5/1, wet, HC odor, silty 10%, well sorted, v. loose-loose, tr. mica + heavy mins. (SW)	75	4	3" spoon 3-3-4-6 Lab; BZ - 0 HS - 750
	10		E.O.B. @ 10.0'			

Split-spoon samples for lithologic definition and/or chemical analysis were collected from 3 to 5 feet below ground surface (BGS) and every 5 feet or lithologic change thereafter (unless otherwise noted).

Hole No. SB 150

DRILLING LOG	DIVISION SAV DIST	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT 728 CAP B	10. SIZE AND TYPE OF BIT 6 1/4" ID HSA
2. LOCATION (Coordinates or Station) SAV	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY PSI	12. MANUFACTURER'S DESIGNATION OF DRILL CME 75
4. HOLE NO. (As shown on drawing title and file number) SB 150	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 4; UNDISTURBED 0
5. NAME OF DRILLER K. Durham	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER —
	16. DATE HOLE STARTED 3/1/97 COMPLETED 3/1/97
7. THICKNESS OF OVERBURDEN 10.0'	17. ELEVATION TOP OF HOLE 20.1'
8. DEPTH DRILLED INTO ROCK Ø	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 10.0'	19. SIGNATURE OF INSPECTOR D. Humphries

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0–2		SAND: fine-coarse, Yell Br 10YR5/6, poor sorting, tr. pebbles, silty 10%, tr. heavy mins, dry. fill. └ Gy 5/1, HC odor, staining? (SP)	hand auger	1	BLOWS NA — OVA, ppm BZ-0, HS-940
	2–4		as above, GY, no pebbles tr. mica (SP)	hand auger	2	NA — BZ-0, HS-1000+
	4–6		: fine-med, Gy 10YR5/1, HC odor well sorted, v. loose, silty 10% └ Gy Br 10YR5/2 wet (SM/SW)	100	3	1-0-0-0 ≠ initial wet sample Lab — BZ-0, HS-1000+
	6–8		Cuttings as above	—	↑ Auger ↓	
	8–10		as above, Gy 10YR/6/1, v. loose-loose, well sorted, silty 5-10% (SW)	70	4	3" spoon 1-2-4-7 Lab — BZ-0, HS-1000+
	10		E.O.B. @ 10' bgs			

Split-spoon samples for lithologic definition and/or chemical analysis were collected from 3 to 5 feet below ground surface (BGS) and every 5 feet or lithologic change thereafter (unless otherwise noted).

APPENDIX B

ANALYTICAL DATA

HUNTER ARMY AIRFIELD
CAP PART-B BUILDING 728
CONSTIUENTS DETECTED IN SOILS

CONSTITUENT (Units in mg/kg)							
	SITE	HA135	HA136	HA137	HA138	HA138	HA139
	SAMPLE ID	HA13501	HA13601	HA13701	HA13801	HA16001	HA13901
	DATE	03/04/97	03/04/97	03/04/97	03/04/97	03/04/97	03/04/97
	DEPTH (ft)	3.50	3.50	3.50	3.50	3.50	3.50
	RESULT TYPE	Primary	Primary	Primary	Primary	Duplicate	Primary
Benzene		<0.032	<1.2	<0.0060	<1.2	<0.028	<2.2
Ethylbenzene		0.32 J	12	<0.0060	5.5 J	0.77 J	15 J
Toluene		0.088 J	(0.92)	<0.0060	<1.2	0.17 J	4.2 J
Xylene (total)		0.032 J	1.6	(0.0021)	3.1 J	0.62 J	6.8 J
Acenaphthene		(0.071)	(0.10)	(0.24)	1.7	<0.76	(0.10)
Acenaphthylene		<0.42	(0.080)	(0.053)	(0.68)	(0.46)	<0.38
Benzo(a)pyrene		<0.42	<0.40	(0.13)	0.79	0.81	(0.18)
Benzo(b,k)fluoranthene		(0.24)	(0.18)	<0.40	1.2	1.1	<0.38
Benzo(ghi)perylene		<0.42	<0.40	<0.40	<0.76	<0.76	<0.38
Chrysene + Benzo(a)anthracene		(0.16)	<0.40	<0.40	(0.60)	(0.67)	<0.38
Fluoranthene		(0.29)	(0.14)	(0.38)	2.8	2.6	(0.27)
Fluorene		(0.15)	(0.12)	(0.20)	1.6	2.0	(0.13)
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthr		(0.14)	<0.40	<0.40	<0.76	<0.76	<0.38
Naphthalene		(0.090)	(0.075)	(0.14)	1.7	1.0	(0.16)
Phenanthrene + Anthracene		(0.23)	(0.16)	(0.22)	2.7	3.4	(0.16)
Pyrene		(0.27)	(0.17)	(0.32)	2.4	2.3	(0.10)
1-Methylnaphthalene		(0.058)	(0.041)	(0.056)	1.5	0.91	(0.13)
2-Methylnaphthalene		(0.089)	(0.042)	(0.20)	4.0	2.6	0.51
GRO		61 J	360 J	<0.21	310 J	140 J	920 J
DRO		13	13	37	400 J	490 J	86

Values represent total concentrations unless noted <=Not detected at indicated reporting limit ---=Not analyzed
() =Less than Reporting Limit
For RCL 8000ASLS

HUNTER ARMY AIRFIELD
CAP PART-B BUILDING 728
CONSTIUENTS DETECTED IN SOILS

CONSTITUENT (Units in mg/kg)	SITE	HA140	HA141	HA142	HA143	HA144	HA145
	SAMPLE ID	HA14001	HA14101	HA14201	HA14301	HA14401	HA14501
	DATE	03/04/97	03/04/97	03/04/97	03/04/97	03/04/97	03/04/97
	DEPTH (ft)	3.50	3.50	3.50	3.50	3.50	3.50
	RESULT TYPE	Primary	Primary	Primary	Primary	Primary	Primary
Benzene		<0.0062	<0.0061	0.0058 UJ	<0.0062	<0.66	<0.0056
Ethylbenzene		<0.0062	<0.0061	0.045 J	<0.0062	13 J	0.085
Toluene		<0.0062	<0.0061	0.0074 J	<0.0062	<0.66	0.014
Xylene (total)		(0.0028)	<0.0061	0.061 J	(0.0014)	36 J	0.038
Acenaphthene		<0.41	<0.40	0.81	<0.41	(0.40)	(0.14)
Acenaphthylene		<0.41	<0.40	(0.15)	<0.41	(0.10)	(0.062)
Benzo(a)pyrene		<0.41	(0.098)	2.8	<0.41	<0.43	(0.17)
Benzo(b,k)fluoranthene		<0.41	(0.12)	6.1	<0.41	(0.21)	(0.35)
Benzo(ghi)perylene		<0.41	<0.40	1.4	<0.41	<0.43	(0.12)
Chrysene + Benzo(a)anthracene		<0.41	<0.40	5.0	<0.41	0.47	(0.29)
Fluoranthene		(0.14)	(0.22)	7.2	(0.14)	0.75	0.71
Fluorene		(0.073)	(0.084)	0.79	(0.066)	(0.28)	(0.12)
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthr		<0.41	<0.40	2.8	<0.41	<0.43	<0.37
Naphthalene		<0.41	<0.40	(0.34)	<0.41	(0.27)	(0.059)
Phenanthrene + Anthracene		<0.41	<0.40	4.9	<0.41	0.87	(0.34)
Pyrene		(0.12)	(0.16)	6.0	(0.11)	0.57	0.69
1-Methylnaphthalene		<0.41	<0.40	(0.23)	(0.022)	(0.26)	<0.37
2-Methylnaphthalene		(0.029)	<0.40	0.39	(0.021)	0.82	(0.098)
GRO		<0.22	<0.22	2.6	<0.22	410 J	2.1
DRO		<12	<12	87	<12	56	<11

Values represent total concentrations unless noted <=Not detected at indicated reporting limit ---=Not analyzed
() =Less than Reporting Limit
For RCL 8(SLS

HUNTER ARMY AIRFIELD
CAP PART-B BUILDING 728
CONSTIUENTS DETECTED IN SOILS

CONSTITUENT (Units in mg/kg)	SITE	HA146	HA147	HA148	MW55	MW55	MW56
	SAMPLE ID	HA14601	HA14701	HA14801	WB5501	WB5502	WB5601
	DATE	03/04/97	03/04/97	03/04/97	02/24/97	02/24/97	02/24/97
	DEPTH (ft)	3.50	3.50	3.50	4.00	10.00	4.00
	RESULT TYPE	Primary	Primary	Primary	Primary	Primary	Primary
Benzene		<0.0056	<0.0058	<0.0060	<0.29	<0.0062	<0.021
Ethylbenzene		<0.0056	<0.0058	<0.0060	12 J	<0.0062	1.9
Toluene		<0.0056	<0.0058	<0.0060	<6.0	<0.0062	<0.44
Xylene (total)		<0.0056	<0.0058	<0.0060	15 J	<0.0062	1.2
Acenaphthene		(0.046)	(0.048)	<0.40	<0.80	<0.41	0.60 J
Acenaphthylene		<0.38	<0.38	<0.40	<0.80	<0.41	1.2 J
Benzo(a)pyrene		<0.38	<0.38	<0.40	<0.80	<0.41	<1.8
Benzo(b,k)fluoranthene		<0.38	<0.38	(0.087)	<0.80	<0.41	<1.8
Benzo(ghi)perylene		<0.38	<0.38	<0.40	<0.80	<0.41	<1.8
Chrysene + Benzo(a)anthracene		(0.11)	<0.38	<0.40	<0.80	<0.41	<1.8
Fluoranthene		(0.14)	(0.12)	(0.13)	<0.80	(0.092)	0.92 J
Fluorene		(0.089)	(0.083)	(0.064)	<0.80	(0.054)	<1.8
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthr		<0.38	<0.38	<0.40	<0.80	<0.41	<1.8
Naphthalene		<0.38	(0.048)	<0.40	<0.80	<0.41	<1.8
Phenanthrene + Anthracene		(0.10)	<0.38	<0.40	<0.80	(0.11)	2.0 J
Pyrene		(0.16)	(0.10)	(0.11)	(0.32)	(0.17)	<1.8
1-Methylnaphthalene		<0.38	<0.38	<0.40	(0.38)	<0.41	1.1 J
2-Methylnaphthalene		(0.017)	(0.058)	<0.40	1.0	<0.41	2.0 J
GRO		0.2 UJ	<0.21	<0.21	1200 J	<0.22	78 J
DRO		12 J	<12	<12	230 J	<12	330 J

Values represent total concentrations unless noted < =Not detected at indicated reporting limit ---=Not analyzed
() =Less than Reporting Limit
For RCL 8000ASLS

HUNTER ARMY AIRFIELD
CAP PART-B BUILDING 728
CONSTIUENTS DETECTED IN SOILS

CONSTITUENT (Units in mg/kg)	SITE	MW56	MW57	MW57	MW57	MW58	MW58
	SAMPLE ID	WB5602	WB5701	WB8001	WB5702	WB5801	WB5802
	DATE	02/24/97	02/25/97	02/25/97	02/25/97	02/25/97	02/25/97
	DEPTH (ft)	10.00	4.00	4.00	10.00	6.00	10.00
	RESULT TYPE	Primary	Primary	Duplicate	Primary	Primary	Primary
Benzene		<0.056	<0.0060	<0.0058	<0.0064	<6.2	<0.0064
Ethylbenzene		2.0	<0.0060	<0.0058	<0.0064	31 J	(0.0047)
Toluene		<1.2	<0.0060	<0.0058	(0.0041)	<6.2	<0.0064
Xylene (total)		1.5	<0.0060	<0.0058	0.020	6.8 J	(0.0021)
Acenaphthene		5.5 J	<0.39	<0.38	<0.42	<0.40	<0.42
Acenaphthylene		<3.8	<0.39	<0.38	<0.42	(0.068)	<0.42
Benzo(a)pyrene		10 J	<0.39	<0.38	<0.42	<0.40	<0.42
Benzo(b,k)fluoranthene		19 J	<0.39	(0.23)	<0.42	<0.40	<0.42
Benzo(ghi)perylene		4.8 J	<0.39	<0.38	<0.42	<0.40	<0.42
Chrysene + Benzo(a)anthracene		16 J	<0.39	<0.38	<0.42	<0.40	(0.30)
Fluoranthene		33 J	(0.068)	(0.063)	(0.049)	(0.054)	<0.42
Fluorene		8.0 J	<0.39	<0.38	<0.42	<0.40	(0.052)
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthr		4.4 J	<0.39	<0.38	<0.42	<0.40	<0.42
Naphthalene		1.1 J	<0.39	<0.38	<0.42	0.041 J	<0.42
Phenanthrene + Anthracene		48 J	<0.39	<0.38	<0.42	<0.40	<0.42
Pyrene		39 J	(0.076)	(0.076)	(0.074)	(0.11)	(0.24)
1-Methylnaphthalene		2.2 J	(0.014)	(0.015)	<0.42	(0.062)	<0.42
2-Methylnaphthalene		2.4 J	<0.39	<0.38	<0.42	(0.066)	<0.42
GRO		86 J	<0.21	<0.21	0.40	2000 J	0.27
DRO		280 J	<12	<12	<12	15	17

Values represent total concentrations unless noted < =Not detected at indicated reporting limit --- =Not analyzed
() =Less than Reporting Limit
For RCL 8' SLS