FINAL

FORSCOM

CORRECTIVE ACTION PLAN

Part B

3d Inf Div (Mech)

Former Pumphouse #2
Facility ID #9-025086
Former Building 8065
Hunter Army Airfield, Georgia

Prepared for

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT

Contract No. DACA21-95-D-0022
Delivery Order 0061

May 2000

SAIC®

DOCUMENT 12

FINAL

CORRECTIVE ACTION PLAN
PART B
FORMER PUMPHOUSE #2
FACILITY IDENTIFICATION NUMBER #9-025086
FORMER BUILDING 8065
HUNTER ARMY AIRFIELD, GEORGIA

Prepared for:
U.S. Army Corps of Engineers
Savannah District
Under Contract Number DACA21-95-D-0022
Delivery Order Number 0061

Prepared by:
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May 2000

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List of Acronyms

AT123D	Analytical Transient 1-, 2-, 3-Dimensional Model
ACL	alternate concentration limit
ARAR	applicable or relevant and appropriate requirement
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
ATL	alternate threshold level
BGS	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CAP	Corrective Action Plan
COPC	chemical of potential concern
DAF	dilution attenuation factor
DO	dissolved oxygen
DPW	Directorate of Public Works
DRO	diesel-range organic
EPA	U.S. Environmental Protection Agency
GA EPD	Georgia Environmental Protection Division
gpm	gallons per minute
GRO	gasoline-range organic
GUST	Georgia Underground Storage Tank Management Program
HAAF	Hunter Army Airfield
IWQS	In-stream Water Quality Standard
M&E	Metcalf & Eddy
MCL	maximum contaminant level
MTBE	methyl tert-butyl ether
NCO	noncommissioned officer
NPDES	National Pollutant Discharge Elimination System
NRC	no regulatory criteria
ORP	oxygen reduction potential
PAH	polynuclear aromatic hydrocarbon
PVC	polyvinyl chloride
RBCA	risk-based corrective action
SAIC	Science Applications International Corporation
SI	Site Investigation
STL	soil threshold level
SVE	soil vapor extraction
TOC	total organic carbon
TPH	total petroleum hydrocarbons
USACE	U.S. Army Corps of Engineers
UST	underground storage tank
USTMP	Underground Storage Tank Management Program
VOC	volatile organic compound

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I. CORRECTIVE ACTION PLAN CERTIFICATION - PART B

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APPENDIX I

REPORT FIGURES

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Georgia Department of Natural Resources
Environmental Protection Division
Land Protection Branch
Underground Storage Tank Management Program
4244 International Parkway, Suite 104
Atlanta, Georgia 30354
Phone (404) 362-2687
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CORRECTIVE ACTION PLAN
PART B

Facility Name: Former Pumphouse #2 Site

Street Address: Former Building 8065, near Taxiway 3

City: Hunter Army Airfield **County:** Chatham

Facility ID #: 9-025086

Submitted by UST Owner/Operator:

Name: Thomas C. Fry/Environmental Branch
Company: US Army/HQ 3d Inf. Div (Mech)
Address: Directorate of Public Works, Bldg 1137
1550 Frank Cochran Drive
City: Fort Stewart State: GA
Zip Code: 31314-4927

Prepared by:

Name: Patricia Stoll
Company: Science Applications International Corp.
Address: P.O. Box 2502
City: Oak Ridge State: TN
Zip Code: 37831

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.

for Name: Thomas C. Fry

Signature: George Harris Date: 5-25-00

B. Professional Engineer or Professional Geologist

Name: Patricia Stoll

Signature: Patricia A. Stoll

Date: 5/19/00

GEORGIA REGISTERED 22851 PROFESSIONAL ENGINEER P. A. STOLL 5/19/00

Georgia Stamp or Seal

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:

- ☒ Soil (Section II.A.1)
- ☒ Groundwater (Section II.A.2)
- ☒ Free Product (Section II.A.3)
- ☒ Surface Water (Section II.A.4)

B. Local and Site Hydrogeology

- ☒ Documentation of Local Groundwater Conditions (Section II.B.1)
- ☒ Stratigraphic Boring Logs (Section II.B.2)
- ☒ Stratigraphic Cross Sections (Section II.B.3)
- ☒ Referenced or Documented Calculations of Relevant Aquifer Parameters (Section II.B.4)
- ☒ Direction of Groundwater Flow (Section II.B.5)
  - ☒ Table of Monitoring Well Data (Table 8)
  - ☒ Potentiometric Map (Figures 19 and 20)
  - ☒ Flow Net Superimposed on a Base Map (Figure 21)

III. REMEDIAL ACTION PLAN:

A. Corrective Action Completed or In-Progress:

- ☒ Recovery/Removal of Free-Product (Non-aqueous Phase Hydrocarbons)
- ☐ Remediation/Treatment of Contaminated Backfill Material & Native Soils
- ☐ Other (specify)_____

B. Objective of Corrective Action:

- ☒ Remove Free Product That Exceeds One-Eighth Inch
- ☐ Remediate Groundwater Contamination That Exceeds:
  - ☐ Maximum Contaminant Levels (MCLs)

    OR
  - ☐ In-stream Water Quality Standards

B. Objective of Corrective Action (continued):

☐ Remediate Soil Contamination That Exceeds:

☐ Threshold Values Listed in Table A

OR

☐ Threshold Values Listed in Table B

OR

☐ Alternate Threshold Levels (ATLs)

☒ Provide Risk Based Corrective Action (Reference CAP B App. VI) (Section III.B.4)

☒ 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

OR

☐ No Further Action Required - Soil and/or Groundwater Contamination is Below Levels in Rule -.09 (3)

C. Design Operation of Corrective Action Systems

☒ Soil ☒ Groundwater ☒ Free Product ☐ Surface Water ☐ Not Applicable

D. Implementation (Section III.D)

Includes, as a minimum, the following:

- Milestone schedule for site remediation
- 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 (Section III.E)

☐ 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
- ☒ Not Applicable

II. SITE INVESTIGATION REPORT

This document represents the Site Investigation (SI) Report for the Former Pumphouse #2, Facility ID #9-025086, Former Building 8065, at Hunter Army Airfield (HAAF), Georgia. This Corrective Action Plan (CAP)-Part B report follows the guidance published by Georgia Environmental Protection Division (GA EPD) in February 1995; however, the organization of the appendices for this report mirrors the appendices listed in the CAP-Part A template issued by GA EPD in May 1998. Report figures and tables are located in Appendices I and II, respectively.

The Former Pumphouse #2 site is located along the east-west taxiway of HAAF, as illustrated in Figure 1. The Former Pumphouse #2 site is located within an average or higher groundwater pollution susceptibility area and is greater than 500 feet from a withdrawal point and is less than 500 feet from a surface water body. As defined in Georgia Underground Storage Tank (GUST) Management Rule 391-5-15.09, the appropriate soil threshold levels (STLs) are those presented in Table B, Column 1 of Gust Rules 391-5-15 because a surface water body is located less than 500 feet from the site.

According to the operational information provided by the HAAF Directorate of Public Works (DPW), Former Pumphouse #2 was an aviation gas fuel island that was used from about 1953 until the early 1970s and consisted of 10 25,000-gallon underground storage tanks (USTs). The pumphouse was inactive from the 1970s to 1995.

In 1995, 8 of the 25,000-gallon USTs were removed by Anderson Columbia Environmental, Inc. Two 25,000-gallon tanks remained in place, partially under the pump house structure. The 8-inch cast iron piping internal to the Former Pumphouse #2 facility was removed prior to the tank removal exercise. During UST closure activities, benzene, toluene, ethylbenzene, and xylenes (BTEX) and polynuclear aromatic hydrocarbons (PAHs) were not detected in the soil samples. However, concentrations of TPH were observed in the soil samples. Samples of the groundwater seeping into the excavation confirmed the presence of BTEX and PAH constituents in the groundwater at the site. Free product was not observed during tank removal activities.

In 1996, Metcalf & Eddy (M&E) conducted a CAP-Part A investigation. The CAP-Part A Report for Pumphouse #2 (M&E 1997) was submitted to GA EPD in May 1997 and describes the results of the CAP-Part A SI. As outlined in the CAP-Part A report, a CAP-Part B SI was determined to be necessary to

- delineate the horizontal and vertical extent of petroleum contamination in soil and groundwater to concentrations below the applicable STL or In-Stream Water Quality Standards (IWQS), and
- assess the potential impact of petroleum contaminants to surface water and sediment in the drainage ditch located south (downgradient) of the site.

Based on the findings of the CAP-Part A, a CAP-Part B SI was conducted by M&E in May 1997 to determine the nature and extent of petroleum contamination. On January 27, 1999, representatives from GA EPD Underground Storage Tank Management Program (USTMP), U.S. Army Corps of Engineers (USACE), Fort Stewart DPW, and M&E met to discuss issues regarding the completion of the CAP-Part B report. Representatives of GA EPD USTMP confirmed that the surface water drainage feature located south of the Former Pumphouse #2 constitutes a surface water body regulated by the State of Georgia under the IWQS and, as such, should be considered as the most likely receptor. In addition, representatives of GA EPD USTMP concurred that Georgia Rule, Chapter 391-3-15, Table B, Column 1 STLs are the appropriate soil screening criteria for the site. As a result of the meeting, additional surface water/sediment sampling locations were determined to be necessary downgradient of the groundwater

plume. In addition, the installation of monitoring wells on the south and east sides of the drainage ditch were determined to be necessary prior to submitting the CAP-Part B Report to GA EPD. M&E performed the additional work in February and November 1999.

In 1998, Earth Tech, Inc., removed the remaining two USTs and the pump house structure. Soil and groundwater samples were not collected during the 1998 tank removal activities because the tanks were being removed from an area of known soil contamination that was determined during the CAP-Part A investigation. GA EPD approved the request to not conduct soil sampling at the site in correspondence dated June 17, 1998 (White 1998). The piping from the boundary of the pump house facility to the bulk fuel farm was also drained, pigged, and grouted in-place.

Science Applications International Corporation (SAIC) utilized the data collected by M&E in 1997 and 1999 to prepare this CAP-Part B report for the Fort Stewart DPW, Environmental Branch, through the USACE, Savannah District, under contract DACA21-95-D-0022, delivery order 0061. In addition, in 2000, SAIC performed selected sampling to fill data gaps and the USACE delineated the free product plume.

II.A. HORIZONTAL AND VERTICAL EXTENT OF CONTAMINATION

The horizontal and vertical extent of petroleum contamination in soil and groundwater has been delineated by activities performed during the UST Closure, CAP-Part A SI, and CAP-Part B SI. The investigative activities associated with each investigation are summarized below.

Pumphouse #2 UST Closure (conducted in 1995 by Anderson Columbia Environmental.)

- Removed eight 25,000-gallon USTs (USTs 42 – 49).
- Collected three soil samples from the side walls of the excavation for BTEX, PAH, and TPH analyses.
- Collected eight groundwater samples from water seeping into the excavation for BTEX and PAH analysis.

Pumphouse #2 CAP-Part A SI (conducted in 1996 by M&E)

- Conducted a soil vapor survey.
- Installed seven soil borings (P2-SB09 through P2-SB15) and four well borings (P2-MW04, P2-MW05, P2-MW06, and P2-MW10) to collect soil samples for BTEX/methyl tert-butyl ether (MTBE), PAHs, total petroleum hydrocarbons (TPH)-diesel-range organics (DRO), TPH-gasoline-range organics (GRO), and volatile organic compound (VOC) headspace analyses.
- Installed four monitoring wells (P2-MW04, P2-MW05, P2-MW06, and P2-MW10) to collect groundwater samples for BTEX/MTBE and PAH analyses.
- Collected four surface water samples for BTEX/MTBE and PAH analyses.
- Collected four sediment samples for BTEX/MTBE, PAHs, TPH-DRO, and TPH-GRO analyses.

Pumphouse #2 CAP-Part B SI (conducted in 1997 by M&E)

- Drilled 13 soil borings (P2-SB42 through P2-SB54) and 8 well borings (P2-MW25 through P2-MW32) to collect soil samples for BTEX/MTBE, PAHs, TPH-DRO, TPH-GRO, VOC headspace, and geotechnical analyses.
- Installed 8 monitoring wells (P2-MW25 through P2-MW32) to collect groundwater samples for BTEX, PAHs, and water quality analyses.
- Collected a comprehensive round of site water level and free product measurements.

Additional Pumphouse #2 UST Closure Activities (conducted in 1998 by Earth Tech)

- Removed two 25,000-gallon USTs (i.e., USTs 40 & 41).
- Demolished Pumphouse #2 (Building 8065).
- No soil or groundwater samples were collected during these removal activities.

Additional Former Pumphouse #2 CAP-Part B Activities (conducted in 1999 by M&E)

- Collected four surface water samples for BTEX and PAHs from a man-made drainage ditch located downgradient of the site and installed four stream gauges, as requested by GA EPD.
- Installed four monitoring wells (P2-MW37, P2-MW38, P2-MW39, and P2-MW43) on the south and east sides of the drainage ditch to collect groundwater samples, as requested by GA EPD.
- Installed one monitoring well (P2-MW41) to perform an aquifer test.
- Collected 12 groundwater samples for BTEX, PAH, and natural attenuation parameters.
- Collected geochemical information to evaluate natural attenuation of petroleum hydrocarbons at the site.

The CAP-Part A and Part B SI soil/sediment and groundwater/surface water analytical laboratory results are included as Appendices V and VIII, respectively, of this document.

II.A.1. Delineation of Soil Contamination

Petroleum-related contaminants detected in soil at the Former Pumphouse #2 site during the UST closure, CAP-Part A SI, and CAP-Part B SI included benzene, ethylbenzene, toluene, xylenes, TPH-DRO, TPH-GRO, and numerous PAH compounds. Specifics regarding the concentrations are discussed in the following sections for each investigation.

Results from the various investigations indicate that there were two separate areas of soil contamination. These areas consist of the area in the vicinity of the former tank pits near the former pumphouse and in the area around Former Fuel Pit 2E.

II.A.1.a. Contaminant concentrations

II.A.1.a.1. UST Closure (1995)

During the UST closure conducted in 1995, three soil samples were collected from the side walls of the excavation. The analytical results are presented in Tables 1a and 1b. BTEX or PAH constituents were not detected in any of the three soil samples; however, TPH was detected at concentrations ranging from 44.8 mg/kg to 154 mg/kg in all three soil samples.

II.A.1.a.2. CAP-Part A Site Investigation (1996)

During the CAP-Part A SI, 22 soil samples were collected from 11 soil borings and monitoring wells (P2-SP-9 through P2-SB15, P2-MW04, P2-MW05, P2-MW06, and P2-MW10) as presented in Figure 2. The analytical results are presented in Tables 2a and 2b and Figures 3a and 3b. The results of soil samples collected during the CAP-Part A investigation are summarized below.

- Benzene was detected in 3 of the 22 soil samples at concentrations ranging from 0.28J mg/kg to 5.2J mg/kg; however, there were 5 samples with detection limits above the benzene STL of 0.017 mg/kg.
- Toluene was detected in 7 of the 22 soil samples at concentrations ranging from 0.72J mg/kg to 110J mg/kg. These concentrations did not exceed the toluene STL of 115 mg/kg.
- Ethylbenzene was detected in 8 of the 22 soil samples at concentrations ranging from 0.0062 mg/kg to 120J mg/kg. Only two of the concentrations exceeded the ethylbenzene STL of 18 mg/kg.
- Xylenes were detected in 12 of the 22 soil samples at concentrations ranging from 0.0078 mg/kg to 360J mg/kg. These concentrations did not exceed the xylenes STL of 700 mg/kg.
- Ten PAH compounds were detected in 8 of the 22 soil samples with concentrations of benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene exceeding the STL of 0.660 mg/kg.
- TPH-DRO was detected in 12 of the 22 soil samples at concentrations ranging from 4.2 mg/kg to 370J mg/kg.
- TPH-GRO was detected in 17 of the 22 soil samples at concentrations ranging from 0.19J mg/kg to 43,000J mg/kg.

Results from the CAP-Part A SI indicate that there were two areas of soil contamination where concentrations of benzene, ethylbenzene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene exceeded the applicable GUST STLs (i.e., Table B, Column 1) during the CAP-Part A SI. These areas consist of the area in the vicinity of the former tank pits near the former pumphouse and the vicinity around Former Fuel Pit 2E. The areas of soil contamination are shown in Figure 3a.

In the area of the former tank pits, benzene and indeno(1,2,3-cd)pyrene exceeded their respective alternate threshold levels (ATLs) in two samples. ATLs were calculated as part of the risk-based corrective action and are presented in Appendix VI. In the vicinity of Former Fuel Pit 2E, benzene was the only constituent to exceed its ATL, which occurred in only one sample.

II.A.1.a.3. CAP-Part B Site Investigation (May 1997 and November 1999)

During the CAP-Part B SI, 42 soil samples were collected for geochemical analysis from 21 soil borings and monitoring wells (P2-SB42 through P2-SB54, and P2-MW25 through P2-MW32) installed in May 1997, as presented in Figure 2. Five additional monitoring wells (P2-MW37, P2-MW38, P2-MW38, P2-MW41, and P2-MW43) were installed in September 1999. Four of the wells were to determine the extent of groundwater contamination on the south and east sides of the drainage ditch and no soil samples were collected from these borings. One of the wells (P2-MW41) was to be used for aquifer testing and two soil samples were collected from this well. Analytical results are presented in Tables 2a and 2b. Sample locations and analytical results are presented in Figures 3a and 3b. Twelve of the 26 soil borings were converted to shallow monitoring wells to delineate the extent of contamination and one of the soil borings was converted to a deep monitoring well (P2-MW32). Field screening methods were used during drilling to select soil samples for geochemical analysis.

Analytical results for soil sampling are summarized in Tables 2a and 2b and presented in the plan view in Figure 3a. The results exceeding applicable GUST STLs are presented in the cross-sections in Figure 3b. The results of soil samples collected during the CAP-Part B investigation are summarized below.

- Benzene was detected in 1 of the 44 soil samples at a concentration of 0.49 mg/kg; however, there were 11 samples with detection limits above the benzene STL of 0.017 mg/kg.

- Toluene was detected in 11 of the 44 soil samples at concentrations ranging from 0.0064 mg/kg to 23 mg/kg and there were 7 samples with detection limits above the reporting limit. These concentrations and detection limits did not exceed the toluene STL of 115 mg/kg.

- Ethylbenzene was detected in 12 of the 44 soil samples at concentrations ranging from 0.0084 mg/kg to 49 mg/kg and there were 2 samples with detection limits above the reporting limit. Only two of the concentrations exceeded the ethylbenzene STL of 18 mg/kg. None of the elevated detection limits exceeded the STL.

- Xylenes were detected in 18 of the 44 soil samples at concentrations ranging from 0.010 mg/kg to 270 mg/kg. These concentrations did not exceed the xylenes STL of 700 mg/kg.

- Seventeen PAH compounds were detected in 21 of the 44 soil samples with concentrations of benzo(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene exceeding the STL of 0.660 mg/kg.

- TPH-DRO was detected in 29 of the 44 soil samples at concentrations ranging from 5.1J mg/kg to 360J mg/kg.

- TPH-GRO was detected in 19 of the 44 soil samples at concentrations ranging from 0.062J mg/kg to 7900 mg/kg.

Concentrations of benzene, ethylbenzene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene exceeded the applicable GUST STLs (i.e., Table B, Column 1) in the vicinity of the former tank pits and Fuel Pit 2E during the CAP-Part B SI.

In the area of the former tank pits, benzene or indeno(1,2,3-cd)pyrene exceeded their respective ATLs in three different samples. In the vicinity of Fuel Pit 2E, benzene was the only constituent to exceed its ATL, which occurred in two samples.

II.A.1.b. Field screening results

Field screening through VOC headspace was performed on all soil samples collected from above the saturated zone during the Part B SI. For each 2-foot-length soil sample collected, VOC headspace readings were measured with an organic vapor analyzer. The field screening results for the CAP-Part B site investigation are presented on each boring log presented in Appendix IV.

II.A.2. Delineation of Groundwater Contamination

Petroleum-related contaminants detected in groundwater at the Former Pumphouse #2 site during the previous investigations, CAP-Part A SI, and CAP-Part B SI included benzene, ethylbenzene, toluene, xylenes, and numerous PAH compounds.

Results from the various investigations indicate that there were two separate areas of groundwater contamination. These areas consist of the area in the vicinity of the former tank pits near the former pumphouse and the vicinity around Former Fuel Pit 2E.

II.A.2.a. Horizontal extent of groundwater contamination

II.A.2.a.1. UST Closure (1995)

During the 1998 UST closure activities, eight groundwater samples were collected from each of the UST tank pits as groundwater seeped into the excavation. The analytical results are presented in Tables 1c and 1d. Benzene, toluene, ethylbenzene, xylenes, and numerous PAH compounds were detected in all of the groundwater samples. The benzene concentrations exceeded the IWQS of 71.28 µg/L in all of the samples. Concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, chyrsene, dibenzo(a,h)anthracene, fluoranthene, and indeno(1,2,3-cd)pyrene exceeded their respective IWQS.

II.A.2.a.2. CAP-Part A Site Investigation (December 1996)

During the CAP-Part A SI, four groundwater samples were collected for chemical analysis from four monitoring wells as presented in Tables 3a and 3b to determine the horizontal extent of groundwater contamination at the site.

Benzene was identified in three groundwater samples during the CAP-Part A SI. Benzene concentrations ranged from 260J µg/L to 2400 µg/L, as illustrated in Figure 4. The concentrations in three samples exceed the Georgia IWQS of 71.28 µg/L, the federal maximum contaminant level (MCL) of 5 µg/L, and the risk-based screening level of 0.36 µg/L. The concentrations in two samples were above the site alternate concentration limit (ACL) for benzene of 469 µg/L (Appendix VI). The analytical detection limit for benzene was 1 µg/L in all samples.

Toluene was identified in two groundwater samples during the CAP-Part A SI at concentrations of 280 µg/L and 2300 µg/L, as illustrated in Figure 5. The concentrations did not exceed the Georgia IWQS of 200,000 µg/L; however, one of the concentrations exceeded the federal MCL of 1,000 µg/L and the risk-based screening level of 750 µg/L. None of the concentrations were above the site ACL for toluene of 1,316,000 µg/L (Appendix VI). The analytical detection limit for toluene was less than 25 µg/L in all samples.

Ethylbenzene was identified in three groundwater samples during the CAP-Part A SI. Ethylbenzene concentrations ranged from 580J µg/L to 840 µg/L, as illustrated in Figure 6. The concentrations did not exceed the Georgia IWQS of 28,718 µg/L or the risk-based screening level of 1,300 µg/L; thus, an ACL

was not necessary. Two of the concentrations exceeded the MCL of 700 µg/L. The analytical detection limit for ethylbenzene was 1 µg/L in all samples.

Total xylenes were identified in three groundwater samples during the CAP-Part A SI. Total xylene concentrations ranged from 720J µg/L to 2900 µg/L, as illustrated in Figure 7. There is no Georgia IWQS for xylenes. The concentrations did not exceed the federal MCL of 10,000 µg/L or the risk-based screening level of 12,000 µg/L; thus, an ACL was not necessary. The analytical detection limit for total xylenes was 1 µg/L in all samples.

Several PAH compounds were estimated at concentrations below 10 µg/L in several groundwater samples. The compounds include acenaphthylene, fluoranthene, fluorene, phenanthrene, and pyrene. ACLs were not necessary for these compounds. These constituents do not have an applicable IWQS and did not require an ACL calculation based on the results of the risk screening.

Naphthalene was identified in three groundwater samples during the CAP-Part A SI. Naphthalene concentrations ranged from 9.8 µg/L to 79 µg/L, as illustrated in Figure 8. This compound does not have a Georgia IWQS or federal MCL; however, the concentrations in three samples are above the current risk-based screening level of 6.5 µg/L. None of the concentrations was above the site ACL for naphthalene of 428 µg/L (Appendix VI).

II.A.2.a.3. CAP-Part B Site Investigation (May 1997, September 1999, February 2000)

To delineate the dissolved benzene contamination plume, a CAP-Part B SI was conducted. Eight wells were installed during the CAP-Part B SI in 1997. As a result of the January 1999 meeting with GA EPD, five additional monitoring wells were installed in September 1999 to determine the vertical and horizontal extent of dissolved benzene contamination plume that was not determined in 1997. Well P2-MW29 was inadvertently destroyed and replaced with P2-MW29A in February 2000. Twenty groundwater samples were collected for geochemical analysis, as presented in Tables 3a and 3b. Well P2-MW27 was not sampled during the CAP-Part B SI because there was free product in the well. Monitoring well locations are presented in Figure 2.

Benzene was identified in 12 groundwater samples during the CAP-Part B SI. Benzene concentrations ranged from 2.6 µg/L to 2700 µg/L, as illustrated in Figure 9. The concentrations in 5 samples exceed the Georgia IWQS of 71.28 µg/L, the concentrations in 11 samples exceed the federal MCL of 5 µg/L, and the concentrations in all 12 samples exceed the risk-based screening level of 0.36 µg/L. The concentrations in five samples were above the site ACL for benzene of 469 µg/L (Appendix VI). With the exception of two samples, the analytical detection limit for benzene was 1 µg/L.

Toluene was identified in 12 groundwater samples during the CAP-Part B SI. Toluene concentrations ranged from 32 µg/L to 2100 µg/L, as illustrated in Figure 10. The concentrations did not exceed the Georgia IWQS of 200,000 µg/L. However, the concentration in four samples exceeded the federal MCL of 1,000 µg/L and the risk-based screening level of 750 µg/L. None of the concentrations was above the site ACL for toluene of 1,316,000 µg/L (Appendix VI). The analytical detection limit for toluene was 1 µg/L in all samples.

Ethylbenzene was identified in 14 groundwater samples during the CAP-Part B SI. Ethylbenzene concentrations ranged from 2.2 µg/L to 1200 µg/L, as illustrated in Figure 11. The concentrations did not exceed the Georgia IWQS of 28,718 µg/L or the risk-based screening level of 1,300 µg/L; thus, an ACL was not necessary. The concentrations in four samples exceeded the MCL of 700 µg/L. The analytical detection limit for ethylbenzene was 1 µg/L in all samples.

Total xylenes were identified in 13 groundwater samples during the CAP-Part B SI. Total xylene concentrations ranged from 2.8 µg/L to 5930 µg/L, as illustrated in Figure 12. There is no Georgia IWQS for xylenes. The concentrations did not exceed the federal MCL of 10,000 µg/L or the risk-based screening level of 12,000 µg/L; thus an ACL was not necessary. The analytical detection limit for total xylenes was 2 µg/L in all samples.

Several PAH compounds were estimated or detected at concentrations at or below 10 µg/L in several groundwater samples. The compounds include 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chyrsene, fluoranthene, fluorene, phenanthrene, and pyrene. The concentrations of benzo(a)anthracene in two samples exceeded the Georgia IWQS of 0.0311 µg/L and the risk-based screening level of 0.092 µg/L, but were below the federal MCL of 0.2 µg/L. The concentrations of benzo(a)anthracene are below the site ACL for benzo(a)anthracene of 2 µg/L (Appendix VI). Bezno(a)pyrene was estimated to be present in one sample at a concentration below the Georgia IWQS of 0.0311 µg/L but above the risk-based screening level of 0.0092 µg/L. There is no federal MCL for benzo(a)pyrene. The concentration of benzo(a)pyrene was below the site ACL for benzo(a)pyrene of 2 µg/L (Appendix VI). The concentrations of chrysene in three samples exceeded the Georgia IWQS of 0.0311µg/L but were below the risk-based screening level of 9.2 µg/L. There is no federal MCL for chrysene. The concentrations of chrysene are below the site ACL for chrysene of 2 µg/L (Appendix VI).

Naphthalene was identified in six groundwater samples during the CAP-Part B SI. Naphthalene concentrations ranged from 6 µg/L to 24 µg/L, as illustrated in Figure 13. This compound does not have a Georgia IWQS or federal MCL; however, the concentrations in four samples are above the current risk-based screening level of 6.5 µg/L. All of the concentrations were below the site ACL for naphthalene of 428 µg/L (Appendix VI).

II.A.2.a.5. Conclusions of the Horizontal Extent of Site Groundwater Contamination

Figures 6 through 13 demonstrate that the horizontal and vertical extent of petroleum contaminants in groundwater has been delineated to the appropriate analytical detection. Petroleum contaminants identified in groundwater at the Former Pumphouse #2 site include BTEX constituents as well as PAH constituents.

The results of the CAP-Part B SI indicate that there are two separate plumes related to the operation of the Former Pumphouse #2. The primary plume of groundwater contamination is located in the vicinity of the former tank pits. The horizontal extent of this plume was defined during the CAP-Part B SI. The groundwater is migrating towards the drainage ditch located to the east and south of the site; however, the dissolved plume does not migrate beyond the drainage ditch to the south and east. Benzene was the only contaminant to exceed its IWQS and ACL during the CAP-Part A SI and CAP-Part B SI. A small plume of groundwater contamination is located in the vicinity of Former Fuel Pit 2E. The horizontal extent of this plume was defined during the CAP-Part B SI. Benzene was the only constituent to exceed its IWQS during the CAP-Part A SI; however, the concentration was below the site ACL for benzene. During the CAP-Part B, the benzene concentrations in the vicinity of the Former Fuel Pit 2E did not exceed the IWQS or ACL.

II.A.2.b. Vertical extent of groundwater contamination

During the CAP-Part B SI, the vertical extent of groundwater contamination in the vicinity of the former tank pits was delineated through soil sampling at P2-MW41. Soil samples were collected from 2-foot intervals to a depth of 50.0 feet below ground surface (BGS). VOC headspace readings were measured for each 2-foot interval with the most elevated headspace readings occurring between 10 to 20 feet BGS. Soil samples were collected from 10.0 – 12.0 and 26.0 – 28.0 feet BGS in P2-MW41 and the results are presented in Table 2a. The sample collected at 10.0 – 12.0 feet contained elevated BTEX detection limits and concentrations of TPH-DRO and TPH-GRO. However, no BTEX, PAH, TPH-DRO, or TPH-GRO

constituents were detected in the 26.0 – 28.0 sample interval, indicating that the vertical extent of groundwater contamination had been delineated and is confined to the Surficial Aquifer (i.e., less than 25.0 feet BGS). In addition, well P2-MW32 was installed near the downgradient perimeter of the plume and screened from 30.0 – 35.0 feet BGS. BTEX and PAH constituents were not detected in the groundwater sample from this well.

During the CAP-Part A SI, the vertical extent of groundwater contamination in the vicinity of the Former Fuel Pit 2E was delineated through soil sampling P2-MW10. Soil samples were collected from 2-foot intervals to a depth of 16 feet BGS. VOC headspace readings were measured for each 2-foot interval with the most elevated headspace readings occurring between 8 to 10 feet BGS. Soil samples were collected from 8.0 – 10.0 and 13.0 – 15.0 feet BGS in P2-MW10 and the analytical results are presented in Table 2a. Benzene was not detected in the 13.0 – 15.0 sample interval, indicating that the vertical extent of groundwater contamination had been delineated and is confined to the Surficial Aquifer (i.e., less than 15.0 feet BGS).

II.A.3. Delineation of Free Product Plume

Free product was identified at the Former Pumphouse #2 site during the CAP-Part B SI. On May 14, 1997, M&E discovered free product in well P2-MW27 at a thickness of 0.04 feet. Later measurements by M&E detected 0.97 feet on May 29, 1997; 0.0 feet on July 29, 1997; 0.02 feet on July 30, 1997, and 0.05 feet on August 27, 1997.

Interim corrective action consisted of free product recovery in P2-MW27 via absorbent socks. An absorbent sock was initially installed in P2-MW27 on July 30, 1997, and was replaced monthly through April 1999. Since April 1999, the sock has not been replaced in order to monitor free product thickness. From April 1999 to December 1999, the greatest amount of free product in P2-MW27 was 0.02 feet on September 1, 1999.

The USACE Savannah District installed a total of 52 piezometers around the P2-MW27 location between July 1999 and March 2000 to define the extent of free product. Currently, the free product in P2-MW27 and the product delineation piezometers are being monitored bi-monthly (Table 4). Between August 1999 and December 1999, the piezometers contained less than 0.02 feet of free product, except for PZ-10, which averaged about 0.35 feet of product. During free product measurements in February 2000, 1.28 feet and 0.75 feet of free product was observed in P2-MW27 and P2-MW41, respectively. Free product was also identified in 15 of 24 piezometers that had been installed by February 2000, with 8 of the piezometers showing over 2 feet of free product. Twenty-eight additional piezometers were installed in March 2000 to delineate the extent of the product that appeared to be released from the pore space in the soil in January/February 2000. On April 12, 2000, 30 of the 52 piezometers contained free product as shown in Figure 14.

II.A.4. Delineation of Surface Water and Sediment Contamination

II.A.4.a. CAP-Part A Investigation (December 1996)

Surface water and sediment samples were collected from four locations around the Former Pumphouse #2 site (Figure 15 and Tables 5 and 6). The sampling points were located in the drainage ditches that are approximately 350 feet west and 160 feet southeast of the Former Pumphouse #2 site. Surface water flow occurs from the north to the southwest and eventually west toward Lamar Canal.

BTEX constituents were detected in two of the four surface water samples and no PAH constituents were detected in any of the surface water samples. At location P2-SWE03, located 250 feet east of Former Pumphouse #2, benzene was detected at 3.5J µg/L, toluene was detected at 7.4J µg/L, ethylbenzene was

detected at 2.9J µg/L, and xylenes were detected at 14 µg/L. At location P2-SWE06, located 200 feet west of Former Pumphouse #2, benzene was detected at 2J µg/L, toluene was detected at 1.4J µg/L, and xylenes were detected at 7.5J µg/L. Each of these concentrations was below its respective IWQS.

No BTEX constituents were detected in any of the four sediment samples. TPH-GRO was detected at P2-SWE06 at 32 mg/kg and total PAHs were 23.3 mg/kg at P2-SWE03 and 110.7 mg/kg at P2-SWE06. These sediment locations are located due east and west of the site and are not directly downgradient of the former pumphouse.

II.A.4.b. CAP-Part B Investigation (February 1999)

As a result of the January 1999 meeting with GA EPD, four additional surface water samples were collected at locations between P2-SWE03 and P2-SWE04, which were more directly downgradient of the Former Pumphouse #2 site (Figure 16 and Table 5) than the CAP-Part A locations. GA EPD approved the surface water sample locations during the January 1999 meeting. Benzene was detected at 2.2 µg/L at P2-SWE02. Toluene was detected at 1.0 µg/L at P2-SWE02. Ethylbenzene was detected at 2.0 µg/L at P2-SWE03. Total xylenes were detected at 1.4 µg/L, 4.1 µg/L, and 3.1 µg/L at P2-SWE02, P2-SWE03, and P2-SWE04, respectively. No PAH constituents were detected in any of the surface water samples. Each of these concentrations was below its respective IWQS. As a result of this surface water sampling, it appears that the dissolved groundwater plume emanating from Former Pumphouse #2 is impacting the drainage ditch, but at concentrations below the respective IWQS.

With GA EPD concurrence, sediment samples were not collected in February 1999.

II.B. REGIONAL, LOCAL, AND SITE HYDROGEOLOGY

Discussion of the regional, local, and site hydrogeology is based on field observations and other investigative activities performed, including a water resource survey, during the CAP-Part A and CAP-Part B investigations of the Former Pumphouse #2 site.

II.B.1. Documentation of Local Groundwater Conditions

II.B.1.a. Groundwater usage

According to the Fort Stewart DPW, nine water supply wells are located within the confines of the HAAF area (Figures 17 and 18). These wells have the potential to provide up to 3,890 gallons per minute (gpm) of water to occupants of the HAAF installation. The Fort Stewart DPW was unable to provide documentation listing the companies responsible for well installation and drillers' logs showing as-built information and subsurface geologic data. Information concerning such documentation was requested from several water well drilling companies in the Chatham County area; however, data procurement met with very limited success. The Fort Stewart DPW provided well locations, pump rates, treatments, casing depths, and total depths for eight of the nine wells located at HAAF. Because of the lack of data, documentation of subsurface geology based on HAAF drill logs remains extremely limited. Therefore, other references containing deep-well information were used to document the subsurface geology and aquifer characteristics underlying HAAF and vicinity.

Wells 1 and 2, both public water supply wells located in the cantonment area of HAAF, constitute the main water supply system at HAAF (Figure 18). Well 1, located at Building 711 on the corner of Moore Road and Douglas Street, is a 12-inch-diameter well with a 100-hp turbine pump serving a 100,000-gallon elevated storage tank (Tank 1) through 10-inch lines. Water from Well 1 is injected with hydrofluosilic acid and chlorine gas solution at the well house. Well 2, located at Building 1205 on the corner of Neal

Street and Strachan Drive, is a 12-inch-diameter well with a 100-hp turbine pump serving a 200,000-gallon elevated tank (Tank 2) through 10-inch lines. Water from Well 2 is also injected with hydrofluosilic acid and chlorine gas solution at the well house. Wells 1 and 2 provide water to a 500,000-gallon elevated storage tank (Tank 3) located on Middleground Road behind noncommissioned officer (NCO) family housing. This tank provides potable water to 694 service connections, which are used by an average of at least 5,000 individuals year-round.

Wells 3, 4A, and 7 are public supply wells located outside the cantonment area of HAAF. Well 3, located at Building 8455, is a 4.0-inch-diameter well with a 1.0-hp electric submersible pump serving a 1,000-gallon hydropneumatic storage tank through 1.5-inch galvanized steel lines. Water from Well 3 is treated with calcium hypochlorite solution and is consumed by approximately 25 people during daytime hours, year-round. Well 4A, located at Building 8581 at the 117th Air National Guard Facility, is a 4.0-inch-diameter well. Pumpage is accomplished with a 0.75-hp turbine pump with 80-gpm capacity. Well 4A provides water for approximately 50 people per day year-round. Well 7 is located at Building 8703 on the Forest River, west of Rio Road. Well 7 is a 4.0-inch well with a 3.0-hp submersible pump serving a 5,000-gallon hydropneumatic tank through 2.0-inch galvanized steel lines. Well 7 serves approximately 500 people on a part-time basis. Sanitary protection for Wells 3, 4A, and 7 is provided by a pump motor block, concrete slab, sealed well head, and screened casing vent.

Based on the GA EPD criteria of serving potable water to less than 25 occupants per day and having less than 15 service connections, Wells 5, 8, and 9 are classified as non-public supply wells.

Well 10 is a non-potable water source and the water is used for cleaning military equipment at a wash-rack facility. Additional information, including capacity, borehole depth, and casing depth, is not available.

The locations of supply wells found outside the boundary of HAAF are shown on Figure 18. These wells include #1, 42, 13, 25, 15, 27, 14, 23, 6, and 9. The City of Savannah Bureau of Water Operations was unable to provide drilling logs or as-built well information.

The Former Pumphouse #2 site is located approximately 3,600 feet southwest (downgradient) of HAAF Well 2, which is located at Building 1205 on Lightning Road. Therefore, the Former Pumphouse #2 site is classified as being greater than 500 feet to a withdrawal point. Well 2 is part of the main public water supply system at HAAF. This system supplies water to approximately 7,500 people through 525 service connections.

II.B.1.b. Aquifer description

The hydrogeology in the vicinity of HAAF is mostly influenced by two aquifer systems. These are referred to as the Principal (Floridan) Aquifer and the Surficial Aquifer (Miller 1990). The Principal Aquifer is the lowermost hydrologic unit and is regionally extensive from South Carolina to Georgia, Alabama, and most of Florida. Known elsewhere as the Floridan, this aquifer, approximately 800 feet in total thickness, is composed primarily of Tertiary-age limestone, including the Bug Island Formation, the Ocala Group, and the Suwannee Limestone. Groundwater from the Floridan is used primarily for drinking water (Arora 1984). According to Miller (1990), one of the largest cones of depression produced in the Floridan Aquifer exists directly beneath Savannah, Georgia. According to 1980 estimates, more than 500 million gallons of water per day were withdrawn from the Floridan Aquifer for public and industrial use in southeast Georgia, more than any other region (Miller 1990).

The confining layer for the Floridan Aquifer is the phosphatic clay of the Hawthorn Group. There are minor occurrences of aquifer material within the Hawthorn Group; however, they have limited utilization (Miller 1990). The Surficial Aquifer overlies the Hawthorn confining unit.

The Surficial Aquifer consists of widely varying amounts of sand and clay, ranging from 55 to 150 feet in thickness, and is composed primarily of the Satilla and Cypresshead Formations in the Savannah vicinity (Arora 1984). This aquifer is primarily used for domestic lawn and agricultural irrigation. The top of the water table ranges from approximately 2 to 10 feet BGS (Miller 1990). Groundwater in the Surficial Aquifer system is under unconfined, or water table, conditions. However, locally, thin clay beds create confined or semiconfined conditions.

Groundwater encountered at HAAF UST investigation sites is part of the Surficial Aquifer system. Based on the fact that all public and non-public water supply wells draw water from the Floridan Aquifer, and that the Hawthorn confining unit separates the Floridan Aquifer from the Surficial Aquifer, it is concluded that there is no hydraulic interconnection between HAAF UST sites (and associated plumes) and water supply withdrawal points.

II.B.1.c. Surface water

The water resources survey conducted during the CAP-Part A SI is presented in Appendix III. Surface water bodies at HAAF include Hallstrom Lake, Lamar Canal, Buckhalter Canal, Springfield Canal, Pond 29 located northwest of Buildings 336 and 232, and an unnamed pond located along the southeast boundary of the HAAF installation (Figure 18). Several unnamed drainage canals and ditches exist throughout HAAF. Most of these canals drain southwest into the Little Ogeechee River, which is part of the Lower Ogeechee watershed. The remaining drainage canals located on the east side of the HAAF installation flow east and eventually drain into the Vernon River, which is located southeast of the HAAF installation. Surface water bodies at HAAF and adjacent areas are not used as public water supplies. The ponds and lakes, as well as Lamar Canal, are perennial, whereas most of the drainage canals and ditches are intermittent. Most of the drainage canals are at least partially enclosed in culverts.

A drainage ditch is located approximately 160 feet southeast of the site. Though not directly downgradient, this is the closest area of the ditch that will receive some of the groundwater from the site. Based on the surface water features discussed in Appendix III, the Former Pumphouse #2 site, Facility ID #9-025086, is classified as being located less than 500 feet to a surface water body.

There are numerous underground water, electrical, and abandoned fuel lines that connect the former fuel pits located at the edge of the taxiway north of the former tank pits. These underground lines are located upgradient of the area of contamination around the former tank pits and are located within the area of contamination near Former Fuel Pit 2E. The invert depth of the former fuel transfer line in the vicinity of Fuel Pit 2E is approximately 5.8 feet BGS. There are two wells that are located in the vicinity of Fuel Pit 2E, and in November 1999, the depths to groundwater in these wells were 7.12 feet in P2-MW10 and 6.87 feet in P2-MW25. Thus, the invert depth of the former fuel transfer line is located approximately 1.0 feet above the water table. The water and electrical lines run adjacent to the former fuel transfer line. It is estimated that the invert depths of these utilities are no more than 5 feet BGS.

II.B.2. Stratigraphic Boring Logs

The local stratigraphy of HAAF and the vicinity is presented in Section II.B.2.a, and the site stratigraphy from the CAP-Part A and CAP-Part B SIs is presented in Section II.B.2.b.

II.B.2.a. Local stratigraphy

HAAF is located within the Barrier Island Sequence District of the Coastal Plain Physiographic Province of the Southeast United States (Clark and Zisa 1976). The Barrier Island Sequence District in Chatham and Bryan Counties is characterized by the existence of several marine terraces (step-like topographic

surfaces that decrease in elevation toward the coast). These marine terraces, and their associated deposits, are the results of sea level fluctuations that occurred during the Pleistocene Epoch. The surficial (Quaternary) deposits in Chatham and Bryan Counties, in decreasing elevation and age, are part of the Okefenokee, Wicomico, Penholoway, Pamlico, and Silver Bluff terrace complexes.

HAAF, as well as most of Chatham County, is underlain by the Pleistocene Pamlico Terrace. The Pleistocene Satilla Formation (formerly known as the Pamlico Formation) consists of deposits of the Pamlico Terrace complex and other terrace complexes in the region. The Satilla Formation is a lithologically heterogeneous unit that consists of variably bedded to non-bedded sand and variably bedded silty to sandy clay. During the Pleistocene, these sand and clay deposits were formed in offshore and inner continental shelf, barrier island, and marsh/lagoonal-type environments. According to the Geologic Map of Georgia, clay beds of marsh origin, which were deposited on the northwest side of the former Pamlico Barrier Island complex, exist in the western quarter of HAAF. Very fine- to coarse-grained sand deposits of barrier island origin are more common throughout the remaining areas of HAAF.

II.B.2.b. Site stratigraphy

As determined from soil borings drilled during the CAP-Part B SI, the lithologies present within 15 feet of the surface at the site appear to correlate with the regional stratigraphic section. CAP-Part A and CAP-Part B soil boring logs are located in Appendix IV. The lithology encountered is predominantly a white, pale brown, or light gray, 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. The boring log of the deep well P2-MW41 indicates an increasing clay content from approximately 44 feet BGS to 49 feet BGS becoming a clayey, coarse grained sand/gravel at 50 feet BGS.

II.B.3. Stratigraphic Cross-Sections

Stratigraphic cross-sections have been developed based on the CAP-Part B SI soil boring logs. Cross-sections A-A' (west/east from the former tank pit area to Former Fuel Pit 2E), B-B' (north/south through the former tank pit area), and C-C' (north/south through Former Fuel Pit 2E) presented in Figure 3b show the site geology as determined by drilling and sampling activities.

II.B.4. Referenced or Documented Calculations

Referenced or documented calculations performed to support the CAP-Part B SI include those used in developing and interpreting the results of geotechnical analysis and groundwater slug testing.

II.B.4.a. Geotechnical Analysis

Disturbed soil samples were collected from wells P2-MW25, P2-MW26, P2-MW27, P2-MW28, P2-MW29, P2-MW30, and P2-MW31 for grain size analysis. In addition, undisturbed soil samples were collected from wells P2-MW26 and P2-MW27 and soil borings P2-SB46 and P2-SB52 in order to determine selected engineering properties of the saturated zone underlying the Former Pumphouse #2 site. The engineering properties measured included moisture content, porosity, specific gravity, bulk density and permeability, as presented in Table 7 and Attachment A. Geotechnical samples were not collected from the five additional well borings drilled in 1999.

II.B.4.b. Slug Testing

Slug-out tests were conducted on shallow wells P2-MW05 and P2-MW06, P2-MW32 (i.e., deep well), and P2-MW41 (i.e., aquifer test well) on November 15, 1999. The slug test data was evaluated using the

Bouwer & Rice method in the AQTESOLVE Professional v2.5 (1999) groundwater modeling software. Calculated hydraulic conductivity values are 0.022 cm/sec, 0.0215 cm/sec, 0.0017 cm/sec, and 0.0033 cm/sec, respectively. The average hydraulic conductivity of the surficial aquifer around the Former Pumphouse #2 area is 0.0121 cm/sec. Calculations for determining the hydraulic conductivity and transmissivity from the slug test data are presented in Attachment A.

II.B.5. Direction of Groundwater Flow

II.B.5.a. Well construction details

The monitoring well casing consisted of 2-inch inside diameter schedule 40 flush-thread polyvinyl chloride (PVC) risers with a 10-foot screen set across the water table. The well screen slot size was 0.010 inches. Exceptions to the typical monitoring well construction were P2-M32, which is a 2-inch well screened from 30.0 – 30.5 ft to determine groundwater quality at depth, and P2-MW42, which is a 4-inch well screened from 5.3 – 25.3 in order to conduct aquifer testing. Table 8 summarizes construction details for Part B SI monitoring wells. Well construction diagrams are presented in Appendix VII. Following installation of the well casing, filter pack sand was poured while the augers were gradually removed to ensure a complete and even distribution of the filter pack. The filter pack extended to a measured level at least 2 feet above the top of the well screen.

Well seals were composed of bentonite pellets and allowed to hydrate before filling the annular space above the seal. The well seal extended to a measured level of at least 2.0 feet above the top of the filter pack.

Above the well seal, the remaining annular space was completed with a 1.0-foot-long flush mount sheet steel protective casing that was grouted in place with a concrete pad. Well casings were capped with expandable locking caps. Protective casings were covered with bolted cast iron manhole covers. Inscribed monitoring well identification plates were placed inside of each manhole cover.

II.B.5.b. Potentiometric mapping

Water level measurements were collected from existing monitoring wells during the CAP-Part A SI and from the new monitoring wells installed during the CAP-Part B SI. Data obtained from these measurements are presented in Table 9. During the CAP-Part A SI in December 1996, groundwater flowed to the south-southwest with a average gradient of 0.0051 ft/ft.

Water level measurements were collected during the CAP-Part B SI in May 1997, November 1999, and February 2000. Data obtained from these measurements are presented in Table 9. Figure 19 shows the potentiometric surface at the site in November 1999. Groundwater in the study area is under water table conditions and is encountered between 6.14 to 14.80 feet BGS, averaging 10.73 feet BGS. Groundwater flow is generally to the southwest with the man-made ditches affecting localized flow. Flow gradient at the Former Pumphouse #2 site is approximately 0.0058 ft/ft. Figure 20 shows the potentiometric surface at the site in February 2000 and the flow is to the southwest with an average gradient of 0.0053 ft/ft.

II.B.5.c. Equipotential flow net

An equipotential flow net based on the November 1999 water level measurements and the contoured potentiometric surface are presented in Figure 21.

III. REMEDIAL ACTION PLAN

III.A. CORRECTIVE ACTION COMPLETED OR IN PROGRESS

III.A.1. Recovery/Removal of Free Product

Free product was identified in well P2-MW27 in May 1997. Corrective action at the site consisted of free product removal in well P2-MW27 via absorbent socks that were replaced monthly until April 1999. In April 1999, the sock was not replaced in order to monitor the free product thickness, which is being monitored bi-monthly. The free product thickness ranged from 0 to 0.02 feet from April 1999 to December 1999. On February 25, 2000, the free product thickness in P2-MW27 increased to 1.28 feet and free product was also measured in P2-MW41 at a thickness of 0.75 feet. Absorbent socks were placed in each well following these measurements. Additional field activities were conducted in March/April 2000 to delineate the extent of free product plumes. As of April 12, 2000, the free product covered an area of approximately 45 feet × 85 feet around P2-MW27.

III.A.2. Remediation/Treatment of Contaminated Backfill Material and Native Soils

During UST closure activities in 1995, all contaminated soil removed during the project was tested in accordance with disposal facility requirements and transported to Kedesh, Inc., Highway 84, Ludowici, GA 31316. The Closure Report for Pumphouse #2 was not submitted to GA EPD in 1995 because review of the closure analytical data indicated that a CAP-Part A would be required (i.e., per requirements of GUST-9, Item 15, page 12, dated August 1995). However, the analytical data presented in the closure report is summarized in Table 1 of this CAP-Part B Report. Approximately 1,062 cubic yards of contaminated soil were excavated from the site.

During the UST closure activities in 1998, the excavated soil was returned to the tank pit. The 1998 Closure Report for Pumphouse #2 (Earth Tech 1998) was not submitted to GA EPD because the CAP-Part A Report, which incorporated the area of the removal activities, had already been submitted to GA EPD.

III.B. OBJECTIVES OF CORRECTIVE ACTION

III.B.1. Remove Free Product that Exceeds One-Eighth Inch

During the CAP-Part B investigations in 1997 and 1999, free product was present in well P2-MW27 at the Former Pumphouse #2 site. Results of additional free product delineation activities conducted in February/ March 2000 indicate that the area of free product has increased in size. Therefore, active removal of the free product is recommended.

III.B.2. Remediate Groundwater Contamination

The CAP-Part A and CAP-Part B investigations documented groundwater contamination that exceeded IWQS. In November 1999, the benzene concentration at the site was 2700 µg/L in well P2-MW05, located south of the former tank pit area. This concentration was the maximum concentration observed during the CAP-Part A and CAP-Part B investigations. The dissolved benzene appears to be impacting a man-made drainage ditch, which is located approximately 160 feet southeast of the former tank pits. This is evidenced by low concentrations of benzene in the drainage ditch surface water and a lack of benzene in the monitoring wells located on the south and southeast side (i.e., downgradient) of the drainage ditch.

Groundwater in the vicinity of the former tank pits is generally flowing to the southwest with a man-made drainage ditch affecting the localized flow. Conservative fate and transport modeling using the Analytical Transient 1-, 2-, 3-Dimensional Model (AT123D) (Attachment B) predicts that benzene (the most conservative representative compound) should be exceeding its IWQS at the drainage ditch located 160 feet southeast of the site. The model results for this compound indicates that there is minimal groundwater impact at a distance of 1,000 feet from the former tank pits. Concentrations of benzene in the vicinity of the former tank pit exceed the benzene ACL of 469 µg/L. Therefore, active remediation of the groundwater plume in the vicinity of the former tank pits is recommended.

In the vicinity of Former Fuel Pit 2E, the groundwater contamination did not exceed IWQS during the CAP-Part B investigation. Therefore, no further action is recommended for the groundwater plume in the vicinity of Former Fuel Pit 2E.

III.B.3. Remediate Soil Contamination

The results from the CAP-Part A and CAP-Part B investigations indicated that 20 soil samples exceeded the GUST STL (i.e., Table B, Column 1) for benzene and 4 soil samples exceeded the GUST STL for ethylbenzene. The ethylbenzene concentrations were below the risk-based screening level (i.e., 204,400 mg/kg) that is protective of soil exposure during industrial land use and below the ATL for ethylbenzene of 389 that was developed based on fate and transport modeling. The benzene concentrations are below the risk-based screening level (i.e., 197.4 mg/kg) that is protective of soil exposure during industrial land use.

The benzene concentration in two of the soil samples from the Former Fuel Pit 2E area were above the ATL for benzene of 0.44 mg/kg. However, the soil samples were located at the soil/water interface and groundwater data indicates that remediation of this area is not warranted. Also this area of the site is located beneath 12 inches of concrete, which prevents incidental contact with the soil and minimizes infiltration of groundwater. The benzene contamination in the soil at the Former Fuel Pit 2E area will continue to degrade naturally and does not require active remediation.

The benzene concentrations in four of the soil samples from the vicinity of the former tank pits were above the ATL for benzene of 0.44 mg/kg, which was developed based on fate and transport modeling. These soil samples are located near the soil/water interface near the area of free product; thus, active remediation of the soil in this area is recommended.

III.B.4. Provide Risk-based Corrective Action

A risk-based approach was used to determine the need for further action at the Former Pumphouse #2 site. Due to the nature of the contamination (petroleum hydrocarbon contamination of groundwater), the risk-based approach was limited to human health concerns. Ecological risk concerns are minimal because of the land use surrounding the Former Pumphouse #2 site. The site is located within an active airfield at HAAF and the primary purpose of the drainage ditch located south is to collect and divert storm water away from the airfield.

The methods for assessing human health concerns for the site were derived from GUST CAP-Part B guidance (GA EPD 1995) and recent GA EPD guidance (GA EPD 1996). These were supplemented by the additional guidance documents on risk assessment methods referenced in this section. In general, the risk-based corrective action (RBCA) approach is performed in two steps:

1. Results are screened against readily available regulatory levels and risk-based screening levels to identify chemicals of potential concern (COPCs).

2. Site-specific ACLs are developed for COPCs using the results of the fate and transport modeling and identified receptor locations.

The following sections present the conceptual model of the exposure setting and potential receptors as well as the general methodology employed to perform the screening for COPCs and the development of ACLs.

III.B.4.a. Potential receptor survey

The exposure assessment identifies any potentially complete pathways between the contaminant source and potential receptors. This involves identifying potential current and future receptors, release mechanisms through which contamination might come into contact with the receptors, and routes of exposure through which receptors might be exposed. Figure 22 presents potentially complete and incomplete pathways for contaminant sources at the Former Pumphouse #2 site.

The Former Pumphouse #2 site is located within an active military installation and within an access-controlled fence of an active airfield. The land use at the site is currently military industrial. Installation housing areas are located more than 0.5 miles to the northeast. A man-made drainage ditch is located approximately 160 feet southeast of the site. The man-made surface water drainage feature eventually empties into Springfield Canal, which flows southwest and joins the Little Ogeechee River more than 3.8 miles downstream of the site. The drainage ditch is located adjacent to the flight line and aircraft taxiway and access to the area is restricted, thus the drainage ditch is not used for recreational purposes.

No connection between site contamination and current off-site receptors has been identified. Site contamination has migrated to the Surficial Aquifer. The Hawthorn Group, which is approximately 90 feet of clay, separates the Surficial Aquifer from the deep drinking water aquifer, the Floridan Aquifer. There appears to be no vertical migration from the Surficial Aquifer to the Floridan Aquifer. One of the HAAF's current water supply wells (i.e., Well 3) is located approximately 6,700 feet downgradient of the Former Pumphouse #2 site.

Current on-site receptors have not been identified for the site. Potential future on-site receptors might include industrial workers and military residents.

Potential future on-site industrial receptors may come in direct contact with site soil contamination during construction or excavation activities. Due to the restricted access to the site, no near-term on-site receptors are likely to come into contact with groundwater even though the Surficial Aquifer discharges into the drainage ditch.

III.B.4.b. Screening for chemicals of potential concern

III.B.4.b.1. Screening Methodology

The purpose of a risk evaluation screening is to identify the COPCs and areas of concern at a site, and possibly to identify sites for which no further action is needed. The first step in the risk process uses screening levels that are readily obtainable and that, due to their conservative nature, can be used with a high degree of confidence to indicate sites for which no further action is required.

An American Society for Testing and Materials (ASTM 1995) Tier 1-type risk evaluation process has been applied to the data collected for the Former Pumphouse #2 site to identify any COPCs and media for which no further action is needed. The risk evaluation screen involves the steps listed below:

- identify potential migration and exposure pathways associated with the site, and identify potential exposure scenarios that should be used to select screening levels;
- identify risk-based screening levels and regulatory-based screening levels for each contaminant;
- compare site-related concentrations to screening levels to determine if any COPCs exist at the site; and
- compare detection limits to screening levels to identify potential false-negative screening results.

The screening levels for the Former Pumphouse #2 site data have been taken from the following sources based on GA EPD guidance (GA EPD 1996):

- Georgia IWQS (GA EPD 1998b),
- GUST STLs (i.e., Table B, column 1),
- soil screening levels developed by the U.S. Environmental Protection Agency (EPA) (1996), and
- soil and groundwater risk-based concentrations developed by EPA Region 3 (EPA 1999).

These values reflect screening levels based on a combination of regulatory screening levels (i.e., IWQS and GUST STLs), and calculated risk-based values (i.e., EPA Region 3 risk-based concentrations).

Screening levels inherently incorporate assumptions about land use. In identifying COPCs, it is generally accepted that screening levels will reflect any potential future land uses and, thus, they usually reflect a conservative residential use scenario (EPA 1991; EPA 1996; EPA 1999; ASTM 1995). Based on GA EPD guidance, risk-based screening levels reflect residential land use for groundwater and industrial land use for deep soils (i.e., > 2 feet BGS) (GA EPD 1996).

Default residential exposure scenarios for groundwater assume that use of the land could someday be residential and that the following exposures could occur:

- ingestion of groundwater, and
- inhalation of volatiles during showering.

The default industrial exposure assumptions for deep soils (i.e., > 2 feet BGS) assume that the following exposures could occur:

- incidental ingestion of soil, and
- inhalation of volatiles and dust.

EPA's *Soil Screening Guidance* (EPA 1996) provides two options for selecting soil values that address protection of groundwater. One value assumes no contaminant dilution or attenuation would occur between the soil and groundwater; a second value assumes a 20-fold dilution attenuation factor (DAF). A DAF of 20 was used to develop soil screening values protective of groundwater at the Former Pumphouse #2 site.

If applicable or relevant and appropriate requirement (ARAR)- or risk-based values are not available, it generally means that (1) the constituent is not considered to be toxic except perhaps at extremely high concentrations (e.g., aluminum, sodium); (2) the dose-response data do not indicate a toxic effect; or (3) EPA is currently reviewing toxicity information, and no reference dose or cancer slope factor is currently available.

III.B.4.b.2. Screening Results

The risk screening process is a systematic screening of sample results to identify site-related COPCs. Concentrations below risk- or regulatory-based screening levels are not considered COPCs and are not evaluated further. Tables 10 through 13 present the results of the risk-based screening for the CAP-Part A SI soil, sediment, groundwater, and surface water data respectively. Tables 14 through 16 present the results of the risk-based screening for the CAP-Part B SI soil, groundwater, and surface water, respectively. No sediment data were collected during the CAP-Part B.

Benzene, ethylbenzene, and toluene were detected above GUST and risk-based screening levels in several soil samples collected during the CAP-Part A. Xylenes were also detected above the risk-based screening levels in two samples. Benzo(a)pyrene, benzo(b)fluoranthene, chyrsene, and indeno(1,2,3-cd)pyrene were detected above the GUST screening level for site soils during the CAP-Part A SI. Benzene was detected above GUST and risk-based screening levels in soil samples collected during the CAP-Part B. Ethylbenzene, toluene, and xylenes were detected above the risk-based screening levels based on leaching to groundwater in three soil samples collected during the Part B SI. Benzo(b)fluoranthene, chyrsene, and indeno(1,2,3-cd)anthracene were detected above GUST soil screening levels during the CAP-Part B. Benzene, ethylbenzene, toluene, xylenes, benzo(a)pyrene, benzo(b)fluoranthene, chyrsene, and indeno(1,2,3-cd)pyrene were identified as COPCs for the Former Pumphouse #2 site soils.

The detection limits for benzene and several PAHs exceeded GUST and risk-based screening levels in several samples during the CAP-Part A and CAP-Part B SI. Many results were estimated for both data sets due to detections below the detection limits. No soil data were rejected. No COPCs for soils were selected for the site based on the detection limit screening or qualifier screening.

Benzene was detected above the IWQS and risk-based screening levels in groundwater during the CAP-Part A SI. Toluene and naphthalene were detected above risk-based screening levels during the CAP-Part A. Benzene and benzo(a)anthracene were detected above IWQS and risk-based screening levels in groundwater during the CAP-Part B. Toluene, benzo(a)pyrene, and naphthalene were detected above risk-based screening levels and chrysene was detected above IWQS in groundwater data collected for the CAP-Part B SI. Toluene, ethylbenzene, xylenes, and several PAHs were detected below screening values during the CAP-Part A and CAP-Part B groundwater investigation. Benzene, toluene, benzo(a)anthracene, benzo(a)pyrene, chrysene, and naphthalene were identified as COPCs for groundwater at the Former Pumphouse #2.

The groundwater detection limit for benzene exceeded the risk-based screening level during both the CAP-Part A and CAP-Part B SI. Detection limits achieved during both the CAP-Part A and CAP-Part B for several PAHs exceeded the IWQS and/or risk-based screening levels for the groundwater data. For these constituents, screening levels represent values below analytically achievable levels. Acenaphthene and fluorene data were rejected in six and two samples, respectively, based on low surrogate recoveries. No additional COPCs were selected for groundwater based on the detection limit or qualifier screening.

No constituents were detected above IWQS for surface water data collected during the CAP-Part A and CAP-Part B. Benzene, ethylbenzene, toluene, and xylenes were detected below screening levels during both investigations. The detection limits for several PAHs exceeded the IWQS. These standards represent values below analytically levels. No COPCs were selected for the Former Pumphouse #2 surface water.

Benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene were detected above GUST soil threshold levels in sediments during the CAP-Part A SI. Several PAHs were detected below GUST levels. No detection limits exceeded screening levels. No sediment data were collected during the

CAP-Part B SI. Benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene were identified as COPCs for sediments for the Former Pumphouse #2.

III.B.4.c. Site-specific levels

Detections exceeding the conservative generic screening levels are considered COPCs. ATLs and ACLs are developed, when appropriate, for the COPCs using site-specific information. ATLs and ACLs were developed from available regulatory screening levels. When regulatory screening levels were not available, then ACLs were developed based on risk-based levels.

III.B.4.c.1. Alternate Threshold Levels

Benzene, ethylbenzene, toluene, xylenes, benzo(a)pyrene, benzo(b)fluoranthene, chyrsene, and indeno(1,2,3-cd)pyrene were identified as COPCs for soil at the site. ATL calculations for this constituent are presented in Appendix VI and are based on the results of the AT123D modeling. The ATLs for soil at the site were determined to be as follows:

- 0.44 mg/kg for benzene,
- 2050 mg/kg for toluene,
- 389 mg/kg for ethylbenzene,
- 700 mg/kg for total xylenes,
- 6.8 mg/kg for benzo(a)pyrene,
- 27.0 mg/kg benzo(b)fluoranthene,
- 10.0 mg/kg chrysene,
- 0.66 mg/kg indeno(1,2,3-cd)pyrene.

III.B.4.c.2. Alternate Concentration Limits

Benzene, toluene, benzo(a)anthracene, benzo(a)pyrene, chrysene, and naphthalene were identified as COPCs for groundwater at the site. To be conservative, the chemical properties of benzene were used to evaluate contaminant migration from the site. Benzene was modeled to a potential downgradient location where a receptor may come in contact with migrating site contamination, which was determined to be a drainage ditch located 160 feet downgradient from the former tanks. Fate and transport modeling was used to develop a site-specific DAF between the source and the receptor location (see III.B.4.c.3 below). The modeling results estimated a DAF for benzene of 6.58 for the drainage ditch. As discussed in Appendix VI, the DAF for PAH constituents was estimated to be 65.8. Compound specific regulatory levels or risk-based screening criteria were used in conjunction with the site-specific DAFs identified for the potential migration of contamination from the site to determine the ACL for each compound. The ACL calculations are presented in Appendix VI. The ACLs associated with the drainage ditch were determined to be as follows:

- 469 µg/L for benzene (i.e. 6.58 × 71.28 µg/L),
- 1,316,000 µg/L for toluene (i.e. 6.58 × 200,000 µg/L),
- 2.0 µg/L for benzo(a)anthracene (i.e. 65.8 × 0.0311 µg/L),
- 2.0 µg/L for benzo(a)pyrene (i.e. 65.8 × 0.0311 µg/L),
- 2.0 µg/L for chrysene (i.e. 65.8 × 0.0311 µg/L),
- 428 µg/L for naphthalene (i.e. 65.8 × 6.5 µg/L).

Benzene was the only compound to exceed its respective ACL. The benzene concentrations exceeded the ACL in wells P2-MW05, P2-MW06, P2-MW29/29A, and P2-MW41.

III.B.4.c.3. Fate and Transport Model

Site-specific DAFs between the source and the receptor locations were developed. The DAF is a numerical value that represents the attempt to mathematically quantify the natural physical, chemical, and biological processes (e.g., advection-dispersion, sorption-retardation, biodegradation, and volatilization) that result in the decrease of a chemical concentration in an environmental medium. In simple terms, the DAF is the ratio of chemical concentration at the source (or the point of origin) to the concentration at the exposure point. The DAFs reflect the natural attenuation concepts outlined in the ASTM's RBCA protocol (ASTM 1995).

Fate and transport models are used as tools for developing DAFs. The application of fate and transport models at any release site must ensure that the modeling results are protective of human health and the environment. Therefore, the selection process of a predictive model at a release site must consider its performance, characteristics, and applicability to the site being considered. The following characteristics were considered before selecting an appropriate model for the Installation:

- the model provides conservative predictions,
- the model is technically sound,
- the model is a public-domain model or is readily available,
- the model has received adequate peer review,
- the model has been applied to other similar sites, and
- the model is easy to use.

The AT123D meets all of the above criteria and was selected for performing fate and transport analysis for this site. AT123D is a well-known and commonly used analytical groundwater pollutant fate and transport model. This model computes the spatial-temporal concentration distribution of chemicals in the aquifer system and predicts the transient spread of a chemical plume through a groundwater aquifer. The fate and transport processes accounted for in AT123D are advection, dispersion, adsorption/retardation, and decay. This model can be used as a tool for estimating the dissolved concentration of a chemical in one, two, or three dimensions in the groundwater resulting from a mass release (either continuous or instant or depleting source) over a source area (i.e., point, line, area, or volume source).

Vertical migration of the contaminant plume through the confining unit to the Principal Artesian aquifer is improbable. The confining unit has a vertical hydraulic conductivity on the order of 10^{-8} cm/sec and ranges from 15 to 90 feet in thickness. Assuming a vertical gradient of 1.0 ft/ft and an effective porosity of 0.06 (Mills et al. 1985) for the confining unit, the groundwater travel time is estimated to be 87 years. Therefore, it would take more than 400 years for the benzene contamination to migrate through the confining layer. The surficial aquifer in which the contaminant plume is located is not used as a source of drinking water.

There are two areas of soil and groundwater contamination at the Former Pumphouse #2 site. One area of contamination surrounds the former tank pits associated with the former pumphouse building and the former fuel pit labeled 2E. The fate and transport modeling was conducted for both sites and the results are provided in Attachment B.

Former Pumphouse #2 Tank Pit Area

The maximum soil concentration of benzene (i.e., 5.2 mg/kg in P2-SB10 at 8.0 – 10.0 ft) in this area was at the soil/water interface. Therefore, leaching to groundwater by percolating rainwater was not modeled. Instead, a conservative approach of equilibrium partitioning between soil and groundwater was assumed. Modeling of the lateral migration to the receptor was performed using AT123D. A man-made drainage ditch located approximately 160 feet southeast of the site is the nearest possible location at which a

receptor might encounter migrating groundwater contamination due to a possible hydraulic connection between the groundwater and the surface water.

The steady-state (i.e., continuous concentration at the source) model was developed by calibrating the model against the maximum observed benzene concentration at the site, which occurred in well P2-MW05 (i.e., 2700 µg/L) in November 1999. Since the maximum observed benzene concentration occurred in November 1999 in a well located outside of the former tank pit area, the model was calibrated to predict the historical concentration at the source (i.e., the former tank pits). The model predicted that the historical concentration at the source would have been 10,600 µg/L in December 1996. This compared relatively well with the highest concentration (i.e., 15,800 µg/L) observed in the tank pits during the closure in 1995. In reality, the source of benzene will deplete due to biodegradation and natural attenuation.

The modeling results indicate that benzene will reach the ditch at a concentration of 1610 µg/L, which is above the state IWQS of 71.28 µg/L, thereby predicting that the surface water is impacted by the current site conditions. Actual groundwater and surface water results indicate that the groundwater is discharging into the drainage ditch; however, the benzene concentrations in the surface water do not exceed the IWQS. Therefore, the surface water body adjacent to the Former Pumphouse #2, Facility ID #9-025086, site is being impacted from former UST operations, but at concentrations below the IWQS of 71.28 µg/L.

Based on modeling results the estimated DAF for benzene at the drainage ditch is 6.58. Simulations were also performed to predict the maximum concentrations of benzene over a simulation period of two years in the monitoring wells at the site. The predicted two-year maximum benzene concentrations (i.e., will occur in November 2001) are presented in Table 17.

Former Fuel Pit 2E

Former Fuel Pit 2E produced an additional plume separated by a man-made drainage ditch, which creates a groundwater divide between the former tank pits and Former Fuel Pit 2E, thus it was modeled separately. The same hydraulic and soil properties were used for Former Fuel Pit 2E that were used in the Tank Pit Area. The maximum soil concentration of benzene (i.e., 1.6 mg/kg in P2-MW10 at 8.0 – 10.0 ft) in this area was at the soil/water interface. Therefore, leaching to groundwater by percolating rainwater was not modeled. Instead, a conservative approach of equilibrium partitioning between soil and groundwater was assumed. Modeling of the lateral migration to the receptor was performed using AT123D. A man-made drainage ditch located approximately 240 feet west-southwest (downgradient) of the area is the nearest possible location at which a receptor might encounter migrating groundwater contamination due to a possible hydraulic connection between the groundwater and the surface water.

The steady-state (i.e., continuous concentration at the source) model was developed by calibrating the model against the maximum observed benzene concentration at the site, which occurred in well P2-MW10 (i.e., 260 µg/L) in 1997. In reality, the source of benzene will deplete due to biodegradation and natural attenuation. The modeling results indicate that benzene should reach the ditch at a concentration of 18.6 µg/L, which is below the state IWQS of 71.28 µg/L. Actual groundwater results indicate that the groundwater contamination in excess of the IWQS does not reach the drainage ditch and surface water and sediment samples from the drainage ditch indicate that it is not being impacted by Former Fuel Pit 2E.

Based on modeling results the Former Fuel Pit 2E estimated a DAF for benzene at the drainage ditch is 14.0. Simulations were also performed to predict the maximum concentrations of benzene over a simulation period of two years in the monitoring wells at the Former Fuel Pit 2E area. The predicted two-year maximum benzene concentrations (i.e., will occur in November 2001) are presented in Table 12.

ATLs and ACLs for the Former Pumphouse #2 site were calculated using the smallest DAF of the two separate plumes. Thus, the DAF for benzene associated with the Former Fuel Pit 2E was not used.

III.B.4.d. Conclusions and recommendations

The conclusions below are based on a review of the CAP-Part A and CAP-Part B SI results using a risk-based approach:

- Free product was detected during the CAP-Part B SI.
- The horizontal and vertical extent of soil contamination below applicable GUST STLs was delineated during the CAP-Part A and Part B SI.
- The horizontal and vertical extent of groundwater contamination associated with the former pumphouse operations was delineated to below federal MCLs during the CAP-Part B SI.
- Risk-based screening results show that concentrations of benzene, ethylbenzene, toluene, xylenes, benzo(a)pyrene, benzo(b)fluoranthene, chyrsene, and indeno(1,2,3-cd)pyrene in soil exceeded their respective initial screening levels. However, using the results of the fate and transport modeling, only the benzene and indeno(1,2,3-cd)pyrene concentrations exceeded the site-specific ATLs of 0.44 mg/kg and 0.66 mg/kg, respectively.
- Contaminant concentrations detected in the surface water samples collected downgradient of the site indicate that contaminated groundwater is discharging into the man-made drainage ditch, but the concentrations do not exceed IWQS.
- Fate and transport modeling of benzene assuming a continuous, steady-state source indicates that contamination will exceed the state IWQS at the nearest defined downgradient receptor, the drainage ditch. However, surface water sampling data indicates that contamination in the surface water does not exceed the respective IWQS.
- Based on the CAP-Part B data, the environmental site ranking score for the former tank pit area is 1,200,250 (Appendix X) and the environmental site ranking score for Former Fuel Pit 2E is 750 (Appendix X).

Considering the site characteristics, active remediation is recommended to address the free product, soil contamination above ATLs, and groundwater contamination above ACLs in the area around the vicinity of the Former Pumphouse #2 tank pit area. No further action is recommended for the area in the vicinity of Former Fuel Pit 2E.

III.C. DESIGN AND OPERATION OF CORRECTIVE ACTION SYSTEMS

III.C.1. System Effectiveness/Basis for Selection

The presumed remedies evaluated for aromatic hydrocarbons in soil and groundwater at this site are included in Table 18. A three-step screening process was used to select the preferred remedy for the Former Pumphouse #2 site. This alternative selection process is illustrated in Figure 23. The selected corrective action, six-phase heating with off gas treatment, was chosen following the evaluation of numerous established and innovative active and passive remediation alternatives. The following conceptual corrective action system design is provided to remediate free product, soil, and groundwater in accordance with the objectives outlined in Section III.B of this report. The remedial system employs an innovative

technology to achieve the remediation objectives within a relatively short timeframe. It is estimated that the gross removal of the contaminant mass will occur within two months, and that another four to six months will be required for polishing to reach the required ACLs.

III.C.1.a. Theory and feasibility

Data indicate that there is an area of free product located near the former tank pits. Residual soil contamination has been identified only in the area directly above the water table, indicating that the soil contamination is being spread through the seasonal fluctuation of the water table. The aromatic hydrocarbon constituents of concern (BTEX) are volatile and can be readily volatilized by heating the impacted soil and free-phase hydrocarbons and causing residual moisture content to vaporize, resulting in steam stripping and volatilization of the contamination. This situation will allow the volatile compounds to be extracted to the surface through soil vapor extraction wells where they can be sorbed onto activated carbon or incinerated by a catalytic oxidizer. This remediation technique is the basis of the six-phase heating technology. Six-phase heating splits conventional three-phase electricity into six separate phases, producing an improved subsurface heat distribution. Each phase is delivered to a single electrode, each of which is placed in a hexagonal pattern. Because each electrode is at a separate phase, each one conducts to all the others. The phases are connected so that adjacent electrodes, which are spaced 60 degrees apart in the hexagonal pattern, are also electrically 60 degrees out of phase. The vapor extraction well, which removes the contaminants, air, and steam from the subsurface, is electrically neutral and located in the center of the hexagon. Six-phase heating delivers significantly more power to the bulk soil and less at the electrodes than other resistive heating techniques. This remediation technology is gaining wide acceptance for the rapid and effective removal of all types of hydrocarbons. The addition of a solution of water and salt may be required at the electrodes to maintain soil moisture and promote electrical heating.

Dissolved phase hydrocarbons exist in the groundwater beneath the site. The BTEX compounds are volatile and can be readily volatilized by heating and in-situ steam stripping. Groundwater is heated to and maintained at its boiling point. As the heat and steam moves through the groundwater, the volatile compounds will partition from the dissolved phase to the vapor phase. Once the vapor phase contaminants rise to the vadose zone, they will release the VOC laden air and steam into the soil pores where it will be collected by the soil vapor extraction (SVE) wells.

III.C.1.b. Remediation System

The Former Pumphouse #2 site is now an empty grass area between an active runway and taxiway at HAAF. The proposed remediation system consisting of six-phase heating, vapor extraction, and treatment of the off-gas and condensate can be installed in such a manner that will not interfere with continued operation of the airfield while the system is operational.

In order to install the proposed remediation system, several permits may be required by GA EPD. These permits include an underground injection permit, air emissions permit, and a National Pollutant Discharge Elimination System (NPDES) permit to discharge the effluent to the drainage ditch.

Prior to installation of the remediation system or in conjunction with the system installation, specific information will be necessary to design an optimal system. The following information is required to design the system:

- vertical extent of contamination across the site,
- specific capacity (i.e., air flow rate) from the SVE wells, and

- initial VOC concentration of the vapor to determine the influent concentration for the remediation system and to determine the appropriate off gas treatment.

A plan view of the proposed well locations for the remediation system is presented in Figure 24. The process flow diagram for the system is presented in Figure 25. Any changes to the remediation system proposed in this document due to design information will be submitted to GA EPD.

III.C.1.b.1. Six-Phase Heating

The six-phase array is made up of six electrodes equally spaced around a center 7th "Neutral" electrode, which serves as the soil vapor extraction well. Typical array diameters range from 30 – 80 feet. The heated zone is 40% larger than the array diameter; resulting in treatment zone diameters ranging from 42 – 112 feet. An array diameter of 40 feet was assumed based on present site knowledge. This array diameter results in an effective treatment diameter of 56 feet. The six-phase system will consist of approximately 20 arrays with 6 electrodes and one vapor extraction well per array. The exact number of arrays will be determined through a baseline screening phase. The electrodes would extend up to 15 feet BGS. The electrode boreholes will be constructed with 2-inch stainless steel casing and backfilled with graphite or steel shot added to assist in maintaining soil conduction. If necessary, water containing an electrolyte, sodium chloride, will be continuously added to the electrodes through a drip system to assist in maintaining moisture and soil conduction.

Three-phase power from the electrical manhole that used to supply power to Former Pumphouse #2 will be connected to a six-phase power transformer. A remote computer will control the output voltages for each electrode. Electrodes will be connected to the transformer via buried insulated power cables to minimize damage from aircraft operations.

III.C.1.b.2. Soil Vapor Extraction

A total of approximately 20 SVE wells will be installed across the site, one within the center of each heating array, consisting of 2-inch stainless steel casing similar to the electrode wells. A bentonite and/or cement grout will extend along the riser pipe to approximately 5 feet below grade. At that point the casing will be slotted and have a sand pack. The SVE wells will extend to the same depth as the electrodes. The estimated radius of influence in silty sands in conjunction with the six-phase heating is approximately 23 feet. The estimated flow rate per well is 10 cubic feet per minute (cfm). Actual flow rates and corresponding vacuums will be measured during a pre-design field test. The estimated total SVE system flow rate is approximately 200 cfm.

This subsurface flow would be induced by a vacuum pump/blower. Soil vapor would go through a SVE condensate tank, which will knock out any moisture in the vapor phase before the vapor reaches the blower. Once on the positive pressure side of the pump, the vapor will be pushed through a catalytic oxidizer or activated carbon prior to discharge to the atmosphere. Each SVE well would have its own dedicated pipe leading to a header manifold near the treatment unit. Valves at the manifold can regulate flow rates from each well.

III.C.1.b.3. Condensate Treatment

Condensate water from the SVE system will be routed through a oil/water separator. The oil/water separator will be sized to handle the condensate. Free product will be containerized into a 500 gallon double walled aboveground storage tank (AST) with an overfill shut-off. Water from the separator will then pass through a shallow tray aeration system with the off-gas going to the catalytic oxidizer or activated carbon system prior to discharge to the atmosphere. Based on current site information, free product will

probably be encountered, thus an oil/water separator will required. The treated condensate will be discharged to the drainage ditch along the southeastern edge of the site in accordance with the NPDES permit.

III.D. IMPLEMENTATION

III.D.1. Milestone Schedule

A milestone schedule for the proposed corrective action has been prepared. A Gantt chart showing milestone activities and anticipated duration is provided in Figure 26. The actual time required to achieve the site remedial levels (i.e., ACLs) may be greater, or less, than that presented in Figure 26. Therefore, Fort Stewart will notify GA EPD USTMP of any significant changes to the proposed remediation time and will provide GA EPD USTMP an updated Gantt chart, as necessary.

III.D.2. Progress Reporting

Semiannual progress reports will be submitted to GA EPD that will summarize all previous bi-monthly sampling events for that period. This will include copies of the monthly NPDES discharge form, if applicable, as well as any air discharge reporting requirements.

III.D.3. Certificate of Completion Report

Petition for permanent closure will be submitted with the final progress report (i.e., completion report). GA EPD will provide final approval for decommissioning the monitoring wells, which will be requested in the final monitoring only report. Decommissioning of monitoring wells will be completed according to the U.S. Army Corps of Engineers design manual for monitoring wells. Decommissioning will comply with all applicable state and federal standards.

The following certification will be submitted to EPD within 30 days of submitting the final progress report:

> I hereby certify that the Corrective Action Plan-Part B, dated _____, 20___, for Hunter Army Airfield, Former Pumphouse #2 site, Facility ID 9-025086, including any and all certified amendments thereto, has been implemented in accordance with the schedules, specifications, sampling programs, and conditions contained therein, and that the plan's stated objectives have been met.
>
> _____
> Signature (Owner/Operator)

III.D.4. Inspection Schedule and Preventative Maintenance Program

Preventative maintenance for the remediation system will be performed in accordance with the maintenance schedule provided in the Gantt chart. Initial startup tests and system calibrations will be conducted upon installation of the system. Site visits will be conducted weekly for the first month and biweekly for months 2 and 3 of operation. Depending on system performance, maintenance and sampling visits may be reduced to monthly for the remaining period of system operation. Selected personnel from Fort Stewart and Savannah District Corps of Engineers will also be trained on operation of the system and adjustment procedures so that more frequent visits can be conducted if required.

The systems will be operated in accordance with manufacture's specifications. Anticipated system adjustments/servicing include the following:

- Check flowrate and pressure for each SVE well.
- Check status of electrodes.
- Check filters and treatment units for fouling.
- Sample treatment system influent and effluent water and vapor samples. Based on analytical results, adjust treatment units to ensure design removal efficiency is achieved.

Also, during each sampling event, wells and exposed piping and instrumentation will be visually inspected for changes or damage. Any notable observations will be recorded in the subsequent progress report.

III.D.5. Periodic Monitoring

The existing monitoring wells that are located within the treatment area will be destroyed by the six-phase heating system; thus, 10 of the SVE wells located within the remediation area will be sampled every other month (i.e., bi-monthly). Groundwater samples from these locations will be analyzed for BTEX. The locations will be selected based on the results of the baseline screening conducted prior to the remediation system installation. Several PAH compounds were selected as COPCs for groundwater at the site; however, the individual PAH concentrations are below their respective ACLs. Thus, it is recommended that PAH analysis not be performed during bi-monthly sampling. System monitoring and sampling will continue at the site until two consecutive sampling events indicate that benzene concentrations are below the ACL of 469 µg/L. During the last round of confirmatory sampling, the groundwater samples will be analyzed for BTEX and PAHs.

During each sampling event, water levels will be measured in all monitoring/SVE wells. Specific conductivity, pH, and temperature analyses will be completed on each sample from the monitoring/SVE wells where analytical samples are collected. The samples will be shipped to an approved laboratory for BTEX analysis using EPA Method 8021B/8260B and PAH analysis using EPA Methods 8100/8270C/8310.

III.D.6. Effectiveness of Corrective Action

The corrective action will be discontinued once the objectives of the corrective action have been achieved, that is free product no longer exists at the site, the benzene concentrations in groundwater have been reduced below the ACL of 469 µg/L, and the benzene and indeno(1,2,3-cd)pyrene concentrations in soil have been reduced below their ATLs of 0.44 mg/kg and 0.66 mg/kg, respectively.

III.D.7. Confirmatory Soil Sampling Plan

Once the remediation system has achieved the benzene groundwater ACL and has been shut down, up to four soil borings will be installed within the two areas of soil contamination that exceeded the benzene ATL of 0.44 mg/kg and the area of free product in the vicinity of the Former Pumphouse #2 tank pit area. One confirmatory soil sample will be collected from each boring and analyzed for BTEX and PAHs. This information will supercede the data currently being used in the site ranking form. No confirmatory soil samples are necessary at the Former Fuel Pit 2E area.

III.D.8. Stockpiled Bulk Soil Sampling

No stockpiled soil will be generated with this corrective action; therefore, no soil sampling will be conducted. Any soil cuttings generated as part of the system installation will be tested in accordance with disposal facility requirements.

III.D.9. Corrective Action Termination Conditions

Concentrations of benzene in groundwater must be at or below the ACL and concentrations of benzene and indeno(1,2,3-cd)pyrene in soil must be at or below their respective ATLs prior to terminating operation of the remedial system. Once the benzene ACL and ATL are achieved, the remedial system and monitoring may be terminated regardless of the site ranking score.

III.D.10. Post-Completion Site Restoration Activities

After termination has been granted, equipment and debris related to the corrective action will be removed from the site.

III.E. PUBLIC NOTIFICATION

The Former Pumphouse #2 site is located entirely within the confines of the Hunter Army Airfield, which is part of the Fort Stewart Military Reservation, a federal facility. The U.S. Government owns all of the property contiguous to the site. The Fort Stewart DPW has complied with the public notice requirements defined by GA EPD guidance by publishing an announcement in the *Savannah Morning News* on April 16 and 23, 2000. A copy of the newspaper announcement used for public notification is presented in Appendix XI of this report.

IV. CLAIM FOR REIMBURSEMENT

HAAF is a federally owned facility and has funded the investigation for the Former Pumphouse #2 site, Facility ID #9-025086, using Department of Defense Environmental Restoration Funds. Application for Georgia Underground Storage Tank Trust Fund reimbursement is not being pursued at this time.

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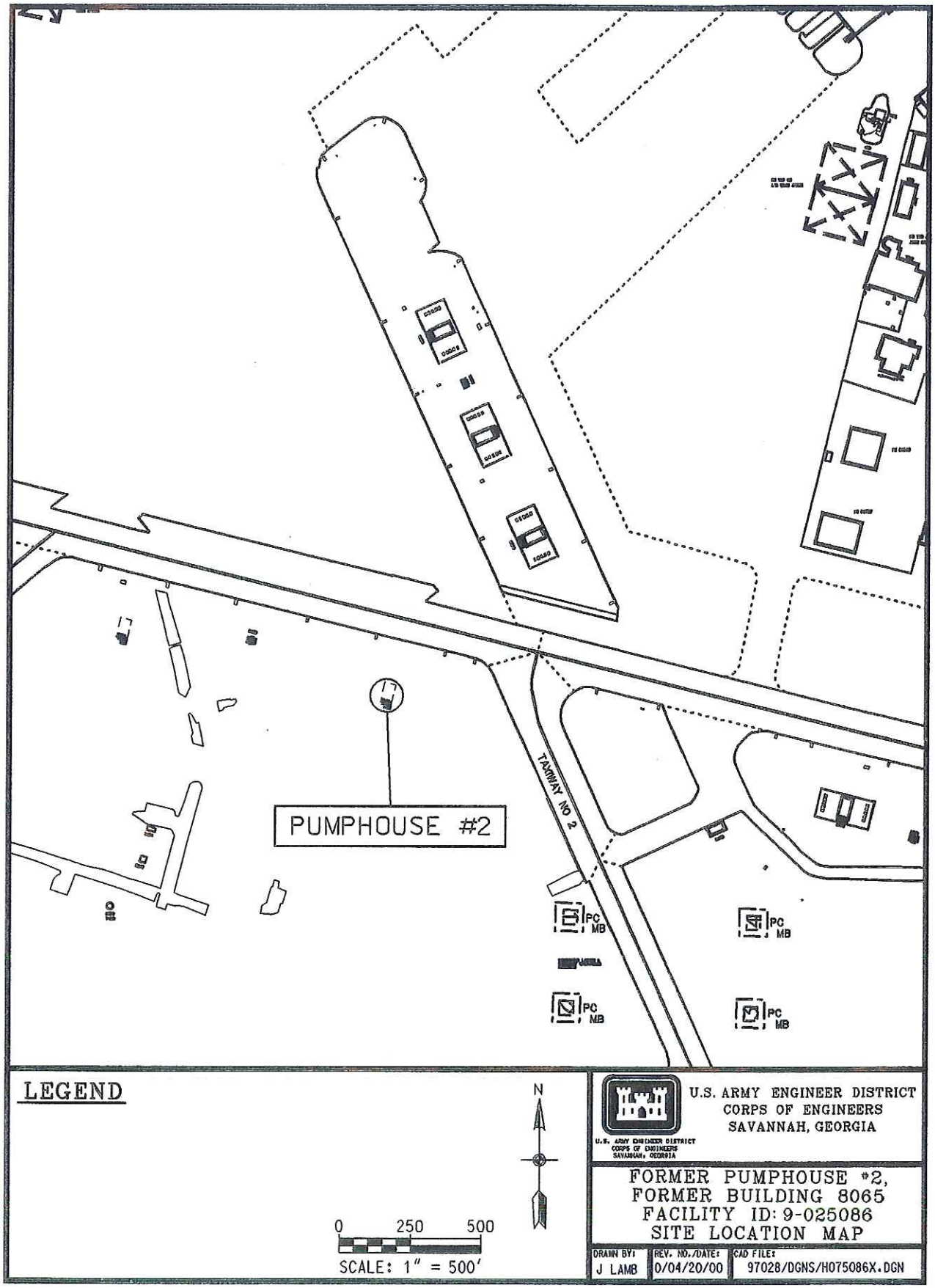


Figure 1. Location Map for the Former Pumphouse #2 Site, Facility ID #9-025086

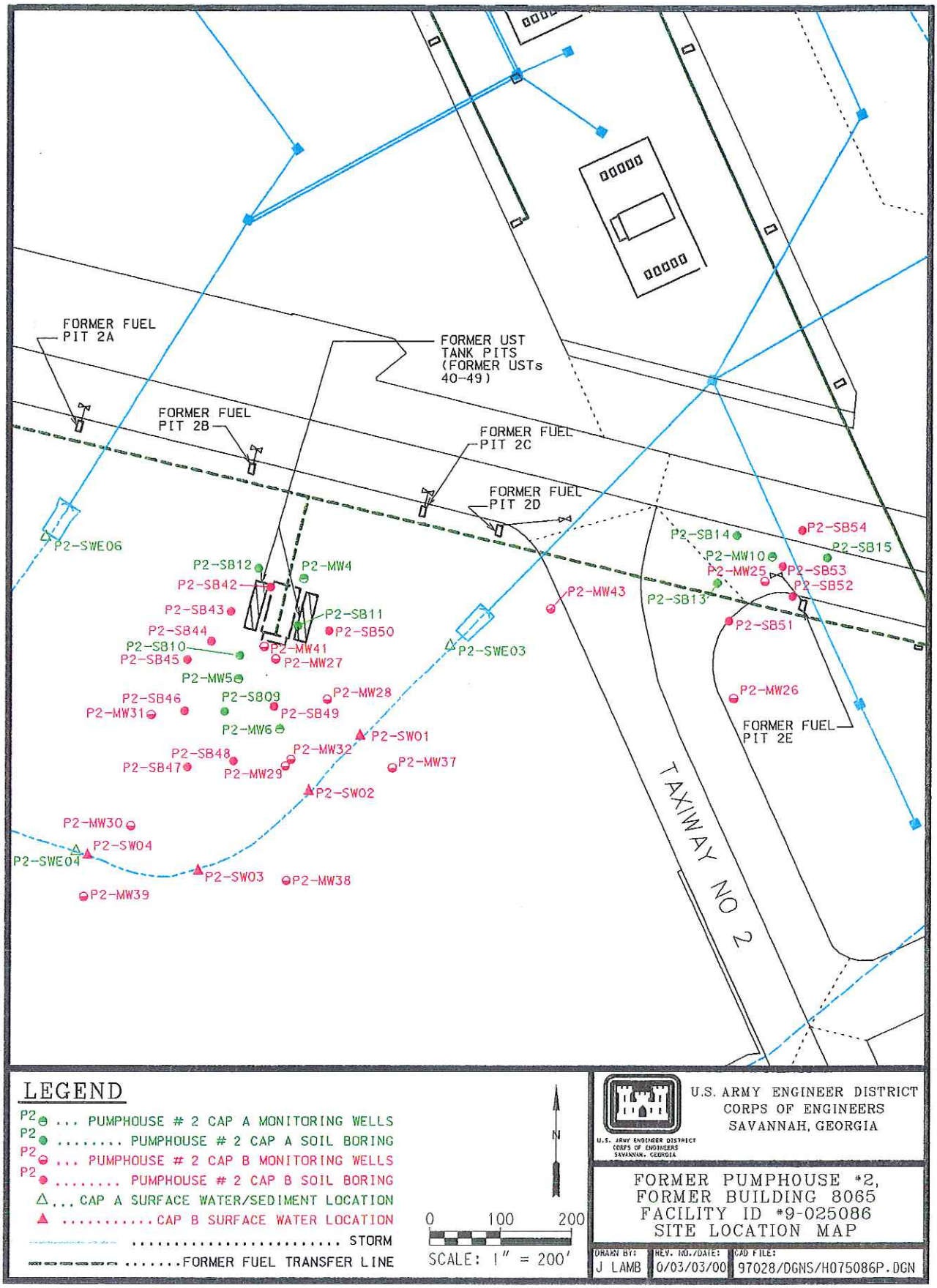


Figure 2. Site Map of the Former Pumphouse #2 Site, Facility ID #9-025086

CAP-PART A SOIL DATA (NOV 1996)

P2-MW04

WB0401 (2.0-4.0 FT)	
TPHD	370 J
WB0402 (13.0-15.0 FT)	
TPHG	6.6

P2-MW05

WB0501 (8.0-10.0 FT)	
B	<0.021
E	1 J
X	1.6 J
C	0.44
F	1.2
PH	1.5
PY	1.2
TPHD	49 J
TPHG	200 J
WB0502 (13.0-15.0 FT)	
C	0.57
TPHD	34 J
TPHG	4.3

P2-MW06

WB0601 (9.0-11.0 FT)	
B	<0.054
T	0.72 J
E	7.2 J
X	13 J
B(B)F	0.86
C	1.5
F	2.5
PH	2.3
PY	2.5
TPHG	1600 J
WB0602 (14.0-16.0 FT)	
B	0.28 J
T	0.82
X	0.57 J
B(A)P	0.53
C	1.3
TPHG	56

P2-MW10

WB1001 (8.0-10.0 FT)	
B	1.6 J
T	0.83 J
E	14 J
X	49 J
TPHD	10
TPHG	4700 J
WB1002 (13.0-15.0 FT)	
E	0.0086
X	0.091
TPHD	4.7
TPHG	0.71 J

P2-SB09

SB0901 (4.0-6.0 FT)	
No Detects	
SB0902 (10.0-12.0 FT)	
B	<0.12
T	110 J
E	120 J
X	360 J
B(B)F	0.81
C	1.1
F	2.4
PH	2.1
PY	2.0
TPHD	18 J
TPHG	43000 J

P2-SB10

SB1001 (4.0-6.0 FT)	
B	<0.020
T	0.82 J
X	0.32 J
B(B)F	0.5
C	0.74
F	1.5
PH	0.76
PY	1.2
TPHD	24 J
TPHG	130 J
SB1002 (8.0-10.0 FT)	
B	5.2 J
T	43 J
E	120 J
X	300 J
B(B)F	1.3
C	1.5
F	3.3
FL	0.66
PH	3.1
PY	2.6
TPHD	26 J
TPHG	43000 J

P2-SB11

SB1101 (4.0-6.0 FT)	
TPHD	23 J
TPHG	0.22 J
SB1102 (10.0-12.0 FT)	
B	<0.024
T	3.1 J
E	1.4 J
X	7.1 J
AC	0.59
B(A)P	2.8
B(B)F	3.1
B(GHI)P	0.8
C	5
F	5.6
FL	0.82
I(123-CD)P	1.3
PH	4.9
PY	4.3
TPHD	35 J
TPHG	5000 J

P2-SB12

SB1201 (0.0-2.0 FT)	
TPHG	0.19 J
SB1202 (10.0-12.0 FT)	
X	0.0078
TPHG	1.1

P2-SB13

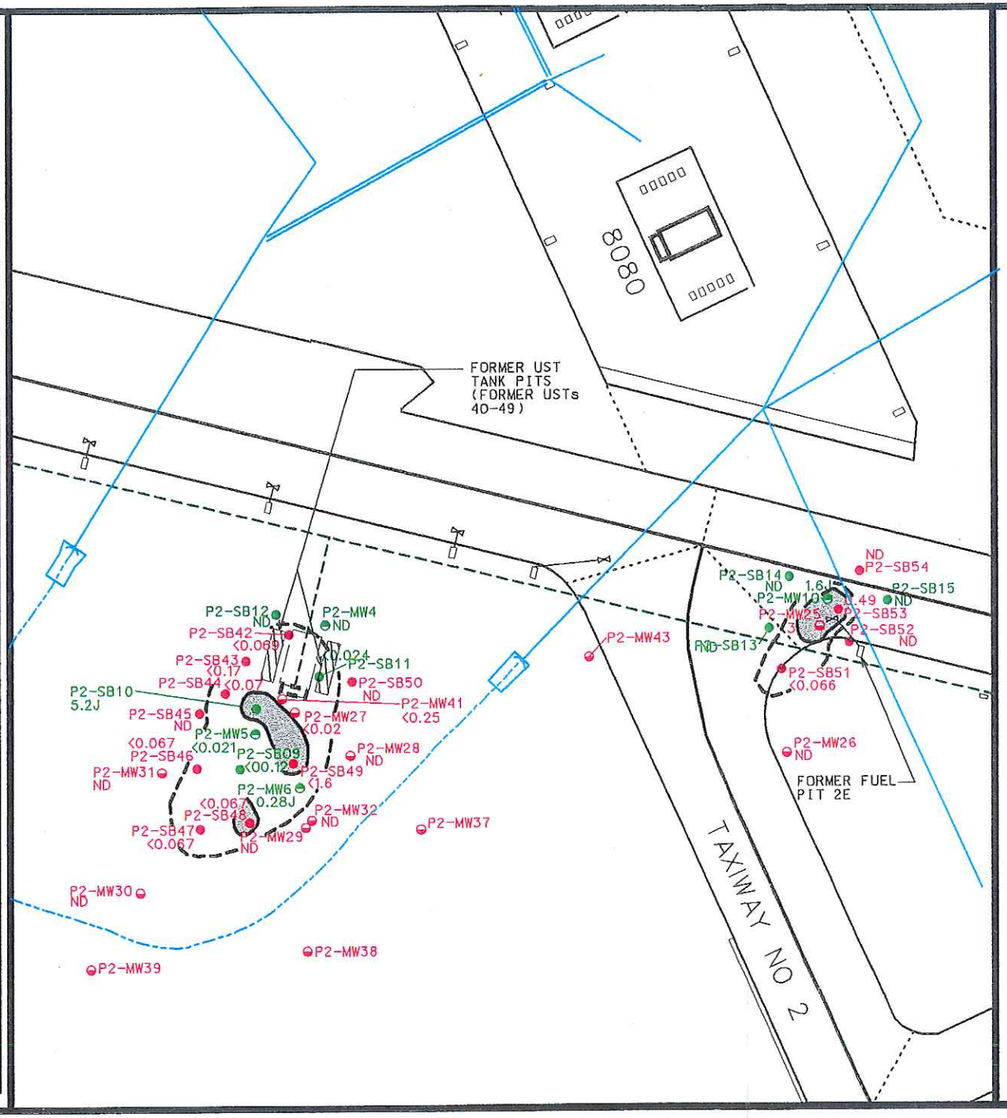
SB1301 (4.0-6.0 FT)	
E	0.015
X	0.052
TPHG	2.4
SB1302 (10.0-12.0 FT)	
X	0.0091
TPHG	0.74

P2-SB14

SB1401 (4.0-6.0 FT)	
No Detects	
SB1402 (10.0-12.0 FT)	
TPHG	0.28

P2-SB15

SB1501 (0.0-2.0 FT)	
TPHD	4.2
SB1502 (4.0-6.0 FT)	
TPHD	7.7



CAP-PART B SOIL DATA (MAY 1997)

P2-MW25

WB2501 (2.0-4.0 FT)	
TPHD	5.1 J
WB2502 (8.0-10.0 FT)	
B	<3.3
T	<15
E	49
X	270
TPHD	13
TPHG	7900

P2-MW26

WB2601 (4.0-6.0 FT)	
No Detects	
WB2602 (8.0-10.0 FT)	
TPHG	0.42

P2-MW27

WB2701 (8.0-10.0 FT)	
B	<0.020
T	3.5 J
E	13 J
X	50 J
1-M	0.48
2-M	0.97
AC	0.46
B(A)P	0.19 J
B(B)F	0.39
C	0.4
F	1.6
FL	0.29 J
N	0.9
PH	1.4
PY	1.3
TPHD	54
TPHG	710 J
WB2702 (13.0-15.0 FT)	
T	0.015
E	0.0084
X	0.017
PY	0.044 J

P2-MW28

WB2801 (8.0-10.0 FT)	
No Detects	
WB2802 (13.0-15.0 FT)	
No Detects	

P2-MW29

WB2901 (8.0-10.0 FT)	
TPHD	22
WB2902 (13.0-15.0 FT)	
No Detects	

P2-MW30

WB3001 (8.0-10.0 FT)	
C	0.12 J
F	0.084 J
WB3002 (13.0-15.0 FT)	
T	0.0096
X	0.01

P2-MW31

WB3101 (8.0-10.0 FT)	
B(A)P	0.33 J
B(B)F	0.19 J
B(GHI)P	0.69
C	0.16 J
I(123-CD)P	0.89
PY	0.05 J
TPHD	12
WB3102 (13.0-15.0 FT)	
T	0.0064

P2-MW32

WB3201 (4.0-6.0 FT)	
No Detects	
WB3202 (8.0-10.0 FT)	
1-M	0.037 J
2-M	0.62
FL	0.079
TPHD	12

P2-MW41

WB4101 (10.0-12.0 FT)	
B	<0.25
X	1.1
AN	0.25
B(A)A	0.36
B(A)P	0.19
B(B)F	0.28
B(GHI)P	0.19
B(K)F	0.13
C	0.38
D(AH)A	0.23J
F	1.3
PH	1
PY	1.3
TPHD	18
TPHG	36 J
WB4102 (26.0-28.0 FT)	
No Detects	

P2-SB42

SB4201 (4.0-6.0 FT)	
T	0.025
E	0.033
X	0.036
C	0.32 J
F	0.29 J
PH	0.22 J
PY	0.32 J
TPHD	17
TPHG	0.58 J
SB4202 (8.0-10.0 FT)	
B	<0.069
T	0.75
E	2.4
X	17
B(A)P	0.24 J
C	3
F	3.3
PY	3.9
TPHD	140
TPHG	170 J

P2-SB43

SB4301 (4.0-6.0 FT)	
2-M	0.42 J
AC	0.42 J
C	1.6
F	3.3
FL	0.52 J
N	0.68
PH	4.4
PY	1.7
TPHD	88
SB4302 (10.0-12.0 FT)	
B	<0.17
T	<0.77
E	1.0
X	5.7
C	0.29 J
F	0.65
PH	0.54
PY	0.6
TPHD	13
TPHG	130 J

P2-SB44

SB4401 (8.0-10.0 FT)	
B(A)P	0.52
B(B)F	1.4
C	0.44
F	0.57
PY	2.0
TPHD	140
TPHG	0.062 J
SB4402 (10.0-12.0 FT)	
B	<0.07
X	0.37
F	0.38 J
PY	0.48
TPHD	140
TPHG	70 J

P2-SB45

SB4501 (4.0-6.0 FT)	
T	0.0095
X	0.014
TPHD	9.9 J
SB4502 (8.0-10.0 FT)	
B(A)P	0.54
B(B)F	1.2
C	0.6
I(123-CD)P	0.56
PY	0.5
TPHD	33
TPHG	0.69

P2-SB46

SB4601 (4.0-6.0 FT)	
No Detects	
SB4602 (10.0-12.0 FT)	
B	<0.067
E	0.23 J
X	2.2
C	0.42
F	0.87
PH	0.74
PY	0.76
TPHD	18 J
TPHG	100 J

P2-SB47

SB4701 (4.0-6.0 FT)	
TPHD	380 J
TPHG	0.078 J
SB4702 (10.0-12.0 FT)	
B	<0.067
E	0.091 J
X	0.65
B(B)F	0.34 J
C	0.73
F	1.3
PH	1.1
PY	1.2
TPHD	22 J
TPHG	56 J

P2-SB48

SB4801 (4.0-6.0 FT)	
TPHD	81 J
SB4802 (10.0-12.0 FT)	
B	<0.67
T	10
E	16
X	100
B(B)F	0.41
C	1
F	1.5
PH	1.4
PY	1.5
TPHD	33 J
TPHG	1900 J

P2-SB49

SB4901 (8.0-10.0 FT)	
C	0.22 J
F	0.51
PH	0.47
PY	0.45
TPHD	11 J
TPHG	0.11 J
SB4902 (10.0-12.0 FT)	
B	<1.6
T	23
E	38
X	240
B(A)P	0.25 J
B(B)F	0.76
C	0.63
F	2.5
FL	0.26 J
PH	2.7
PY	2.0
TPHD	35 J
TPHG	4400 J

P2-SB50

SB5001 (4.0-6.0 FT)	
No Detects	
SB5002 (10.0-12.0 FT)	
No Detects	

P2-SB51

SB5101 (2.0-4.0 FT)	
TPHD	8.5 J
SB5102 (6.0-8.0 FT)	
B	<0.066
E	13
X	97
B(B)F	0.39 J
C	0.87
F	1.6
PH	1.5
PY	1.4
TPHD	32 J
TPHG	2900 J

P2-SB52

SB5201 (4.0-6.0 FT)	
TPHD	28 J
SB5202 (8.0-10.0 FT)	
X	0.047
TPHD	10 J
TPHG	4.8

P2-SB53

SB5301 (0-2.0 FT)	
T	0.012
X	0.0099
1-M	0.051 J
SB5302 (6.0-8.0 FT)	
B	0.49
T	0.69
E	2.9
X	4.6
A	0.049 J
TPHD	15
TPHG	190

P2-SB54

SB5401 (4.0-6.0 FT)	
TPHD	7 J
SB5402 (6.0-8.0 FT)	
TPHD	9.3 J

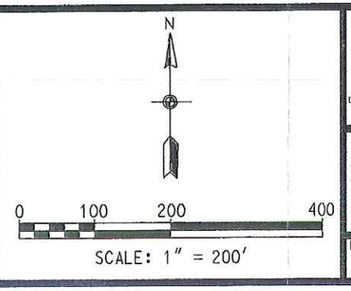
LEGEND

- P2 ... PUMPHOUSE # 2 CAP A MONITORING WELLS
- P2 ..... PUMPHOUSE # 2 CAP A SOIL BORING
- P2 ... PUMPHOUSE # 2 CAP B MONITORING WELLS
- P2 ..... PUMPHOUSE # 2 CAP B SOIL BORING
- ———— ..... STORM
- – – – – – – .....FORMER FUEL TRANSFER LINE
- ..ESTIMATED LIMIT OF BENZENE CONTAMINATION ABOVE STL
- ..ESTIMATED LIMIT OF BENZENE CONTAMINATION ABOVE ATL

B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	XYLENES
1-M	1-METHYLNAPHTHALENE
2-M	2-METHYLNAPHTHALENE
AC	ACENAPHTHENE
A	ACENAPHTHYLENE
AN	ANTHRACENE
B(A)A	BENZO(A) ANTHRACENE
B(A)P	BENZO(A) PYRENE
B(B)F	BENZO(B) FLUORANTHENE
B(GHI)P	BENZO(G,H,I) PERYLENE
B(K)F	BENZO(K) FLUORANTHENE
C	CHRYSENE
D(AH)A	DIBENZO(A,H) ANTHRACENE
F	FLUORANTHENE
FL	FLUORENE
I(123-CD)P	INDENO(1,2,3-CD) PYRENE
N	NAPHTHALENE
PH	PHENANTHRENE
PY	PYRENE
TPHD	TPH-DIESEL RANGE ORGANICS
TPHG	TPH-GASOLINE RANGE ORGANICS

NOTE:
CONCENTRATIONS IN mg/kg
VALUES IN RED EXCEED STLs
VALUES IN BLUE EXCEED ATLs

	STLs (mg/kg)	ATLs (mg/kg)
B	0.017	0.44
T	115	2050
E	18	389
X	700	700
B(A)A	0.660	N/A
B(A)P	0.660	6.8
B(B)F	0.660	27.0
C	0.660	10.0
D(AH)A	0.660	N/A
I(123-CD)P	0.660	0.660



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FORMER PUMPHOUSE #2, FORMER BUILDING 8065 FACILITY ID# 9-025086
CAP-PART A & CAP-PART B
SOIL ANALYTICAL RESULTS

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J. LAMB	0/03/17/00	97028/DGNS/H075086D.DGN

Figure 3a. CAP-Part B Soil Sampling Analytical Results at the Former Pumphouse #2 Site, Facility ID #9-025086

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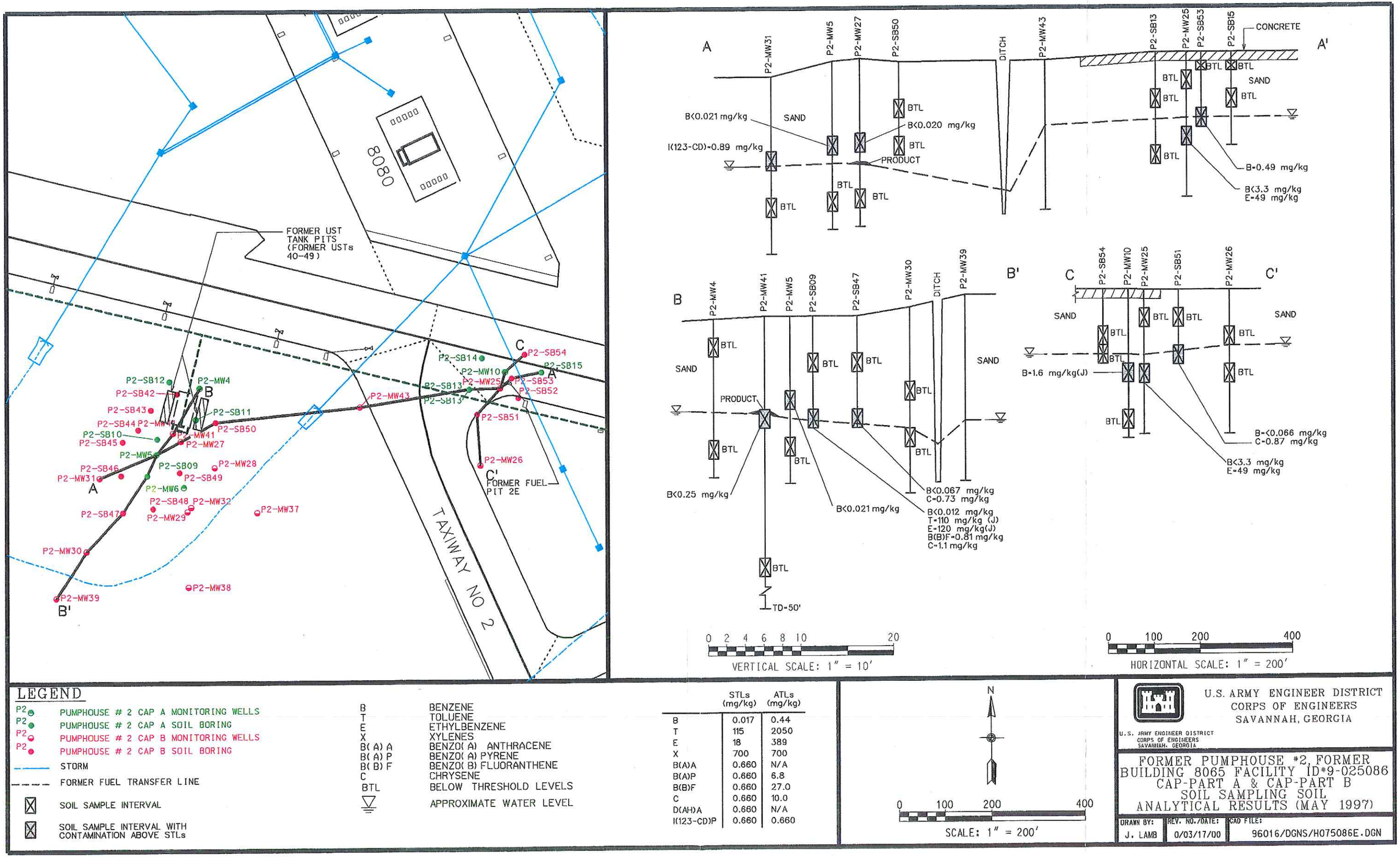


Figure 3b. CAP-Part B Soil Sampling Analytical Results at the Former Pumphouse #2 Site, Facility ID #9-025086

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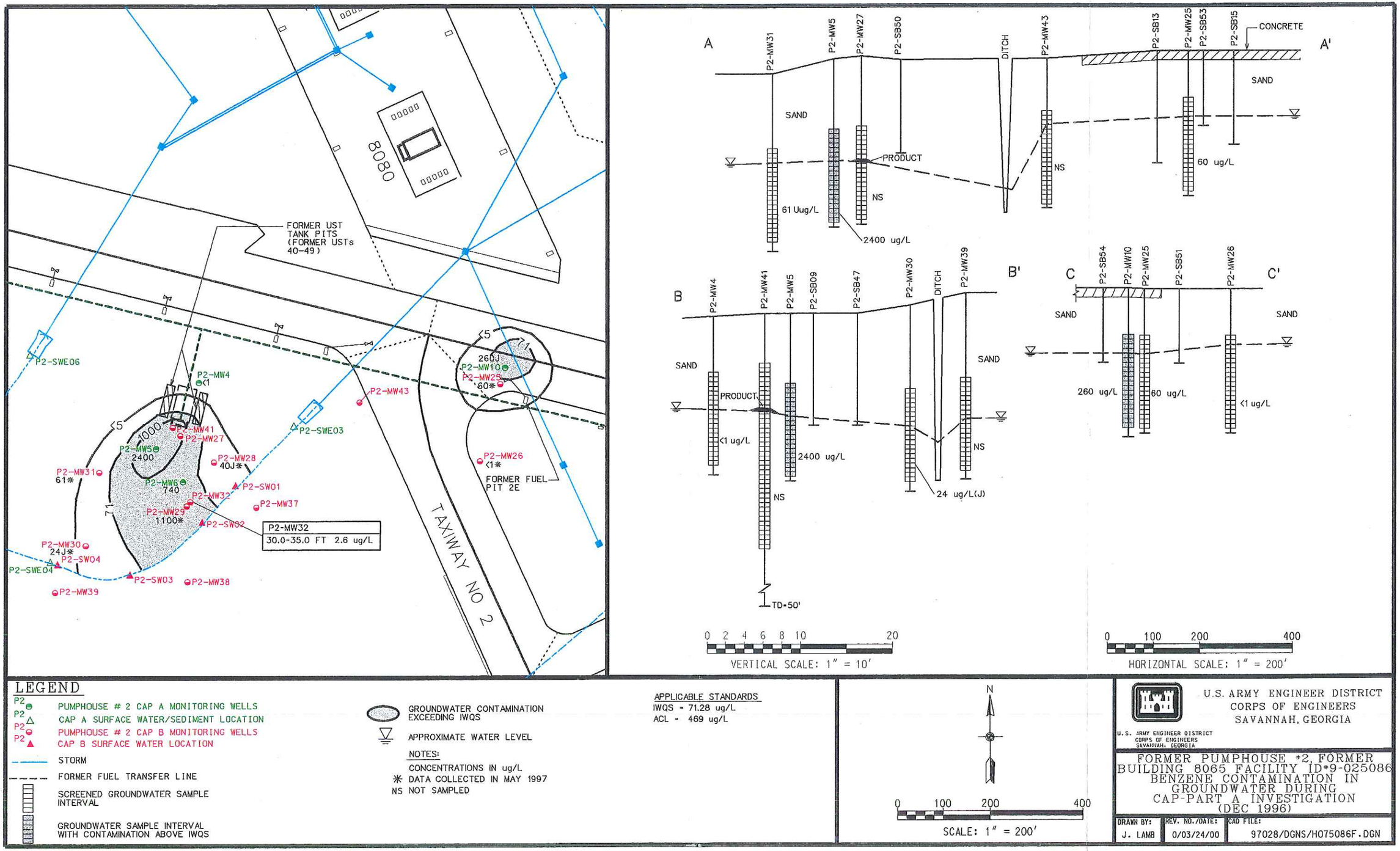


Figure 4. Benzene Contamination in Groundwater Determined During the CAP-Part A Site Investigation at the Former Pumphouse #2 Site, Facility ID #9-025086

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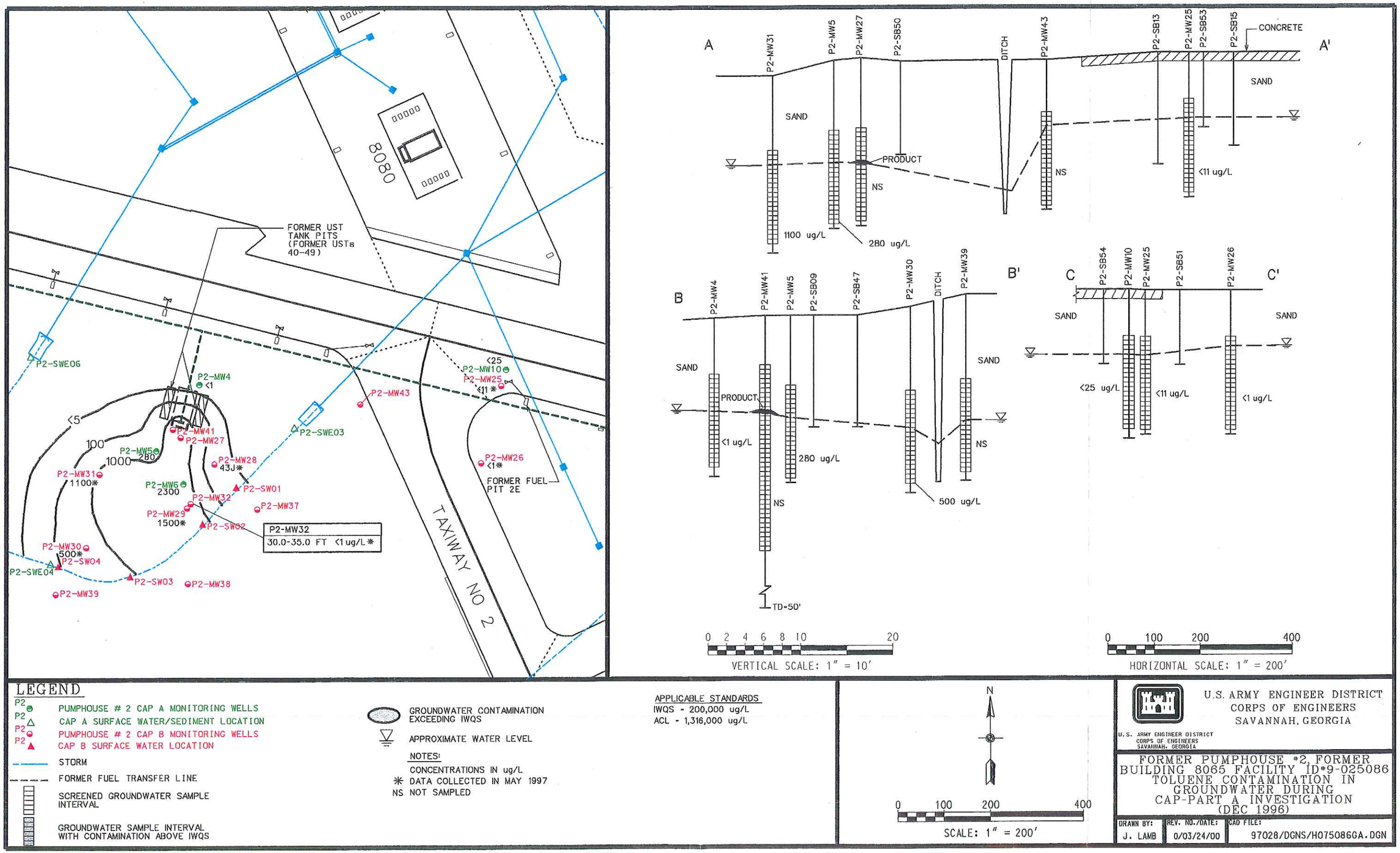


Figure 5. Toluene Contamination in Groundwater Determined During the CAP-Part A Site Investigation at the Former Pumphouse #2 Site, Facility ID #9-025086

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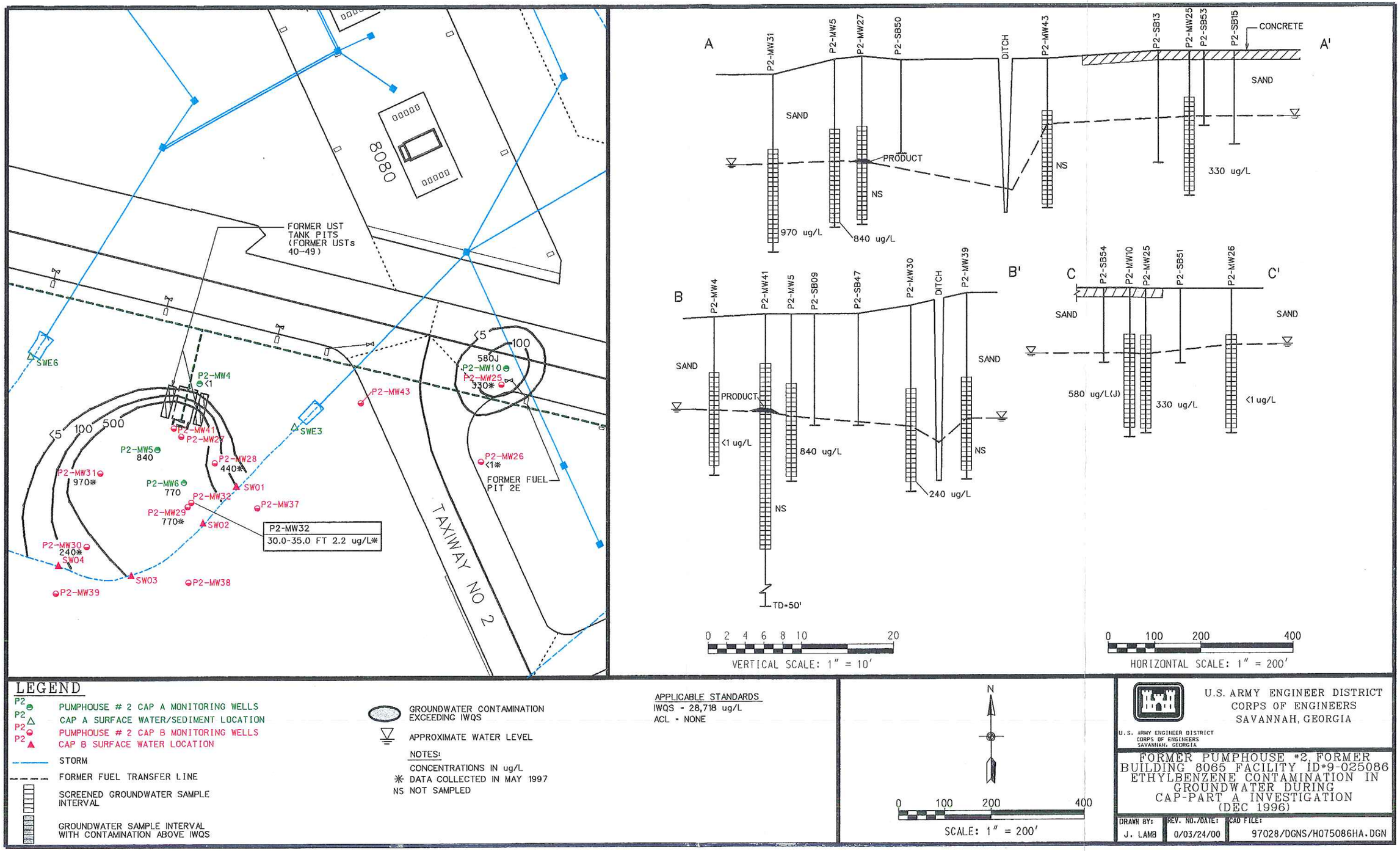


Figure 6. Ethylbenzene Contamination in Groundwater Determined During the CAP-Part A Site Investigation at the Former Pumphouse #2 Site, Facility ID #9-025086

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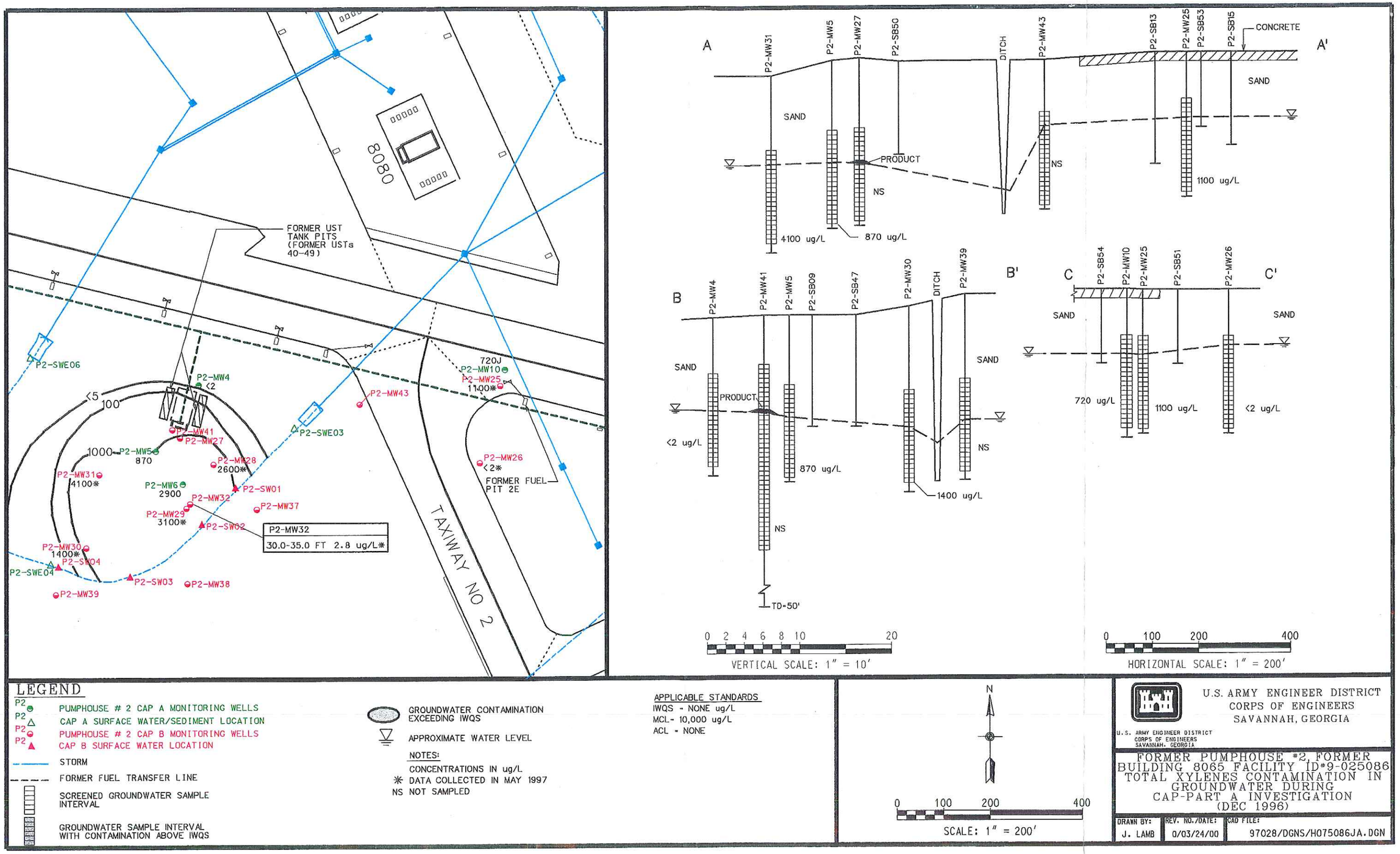


Figure 7. Total Xylenes Contamination in Groundwater Determined During the CAP-Part A Site Investigation at the Former Pumphouse #2 Site, Facility ID #9-025086

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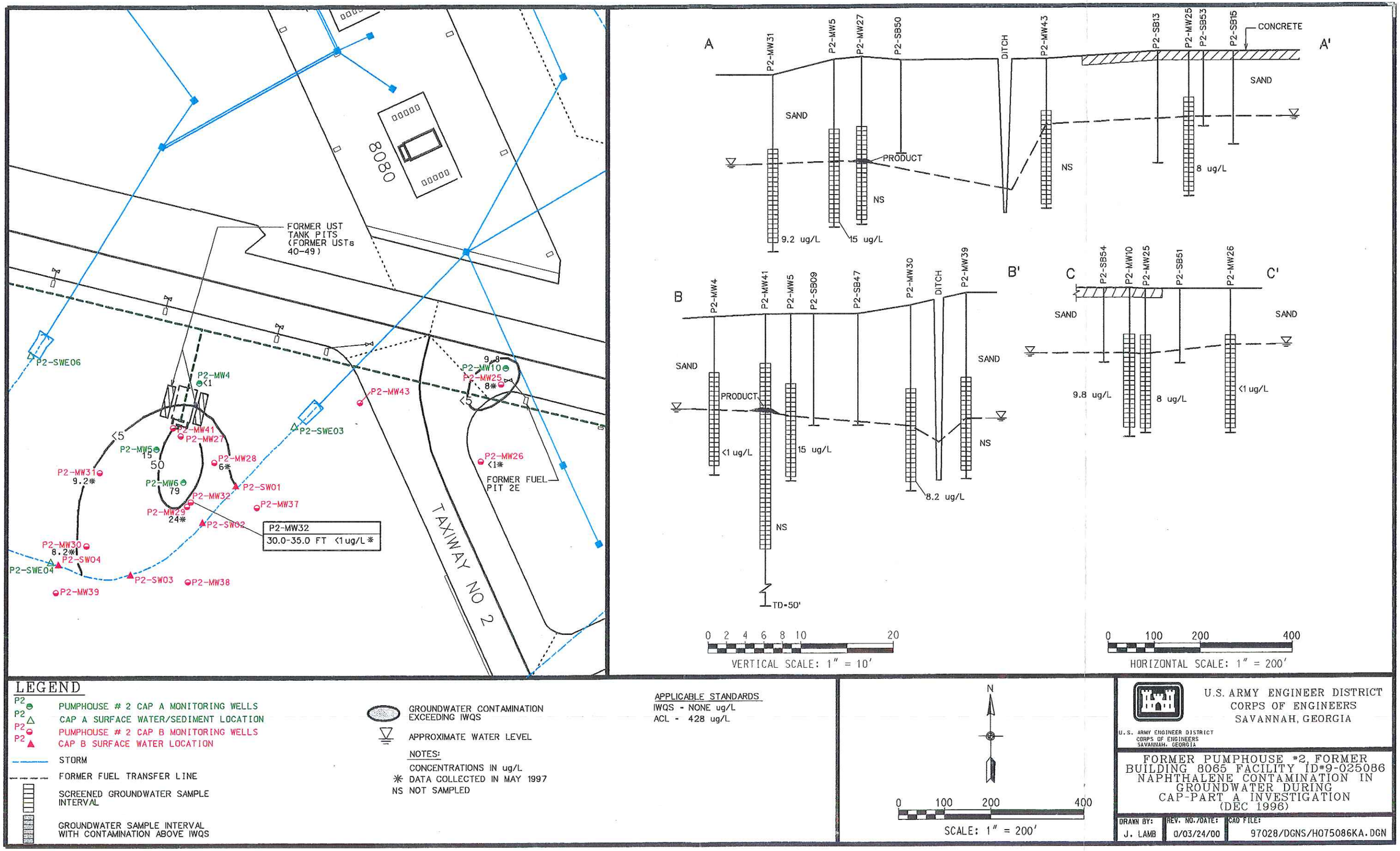


Figure 8. Naphthalene Contamination in Groundwater Determined During the CAP-Part A Site Investigation at the Former Pumphouse #2 Site, Facility ID #9-025086

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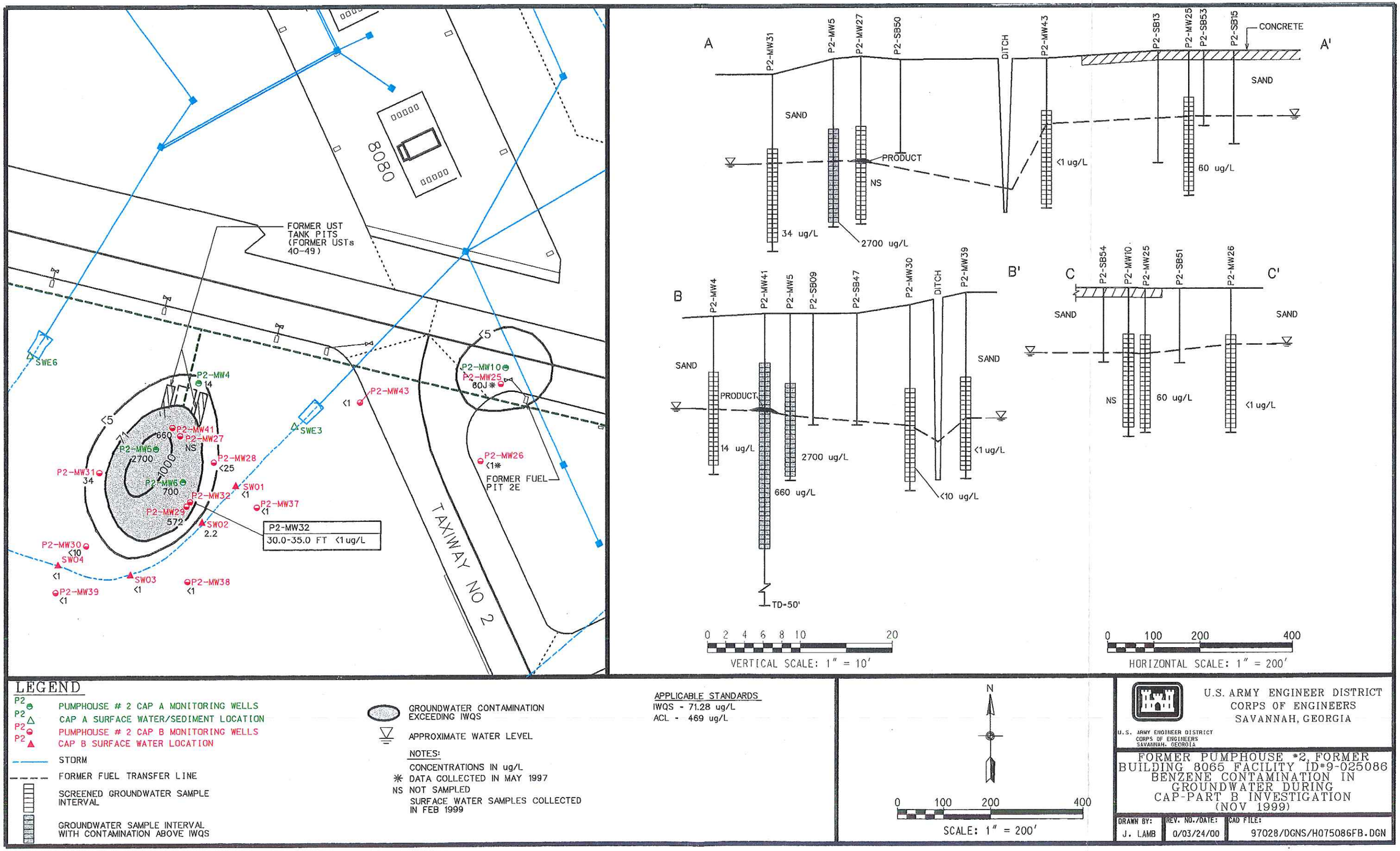


Figure 9. Benzene Contamination in Groundwater Determined During the CAP-Part B Site Investigation at the Former Pumphouse #2 Site, Facility ID #9-025086

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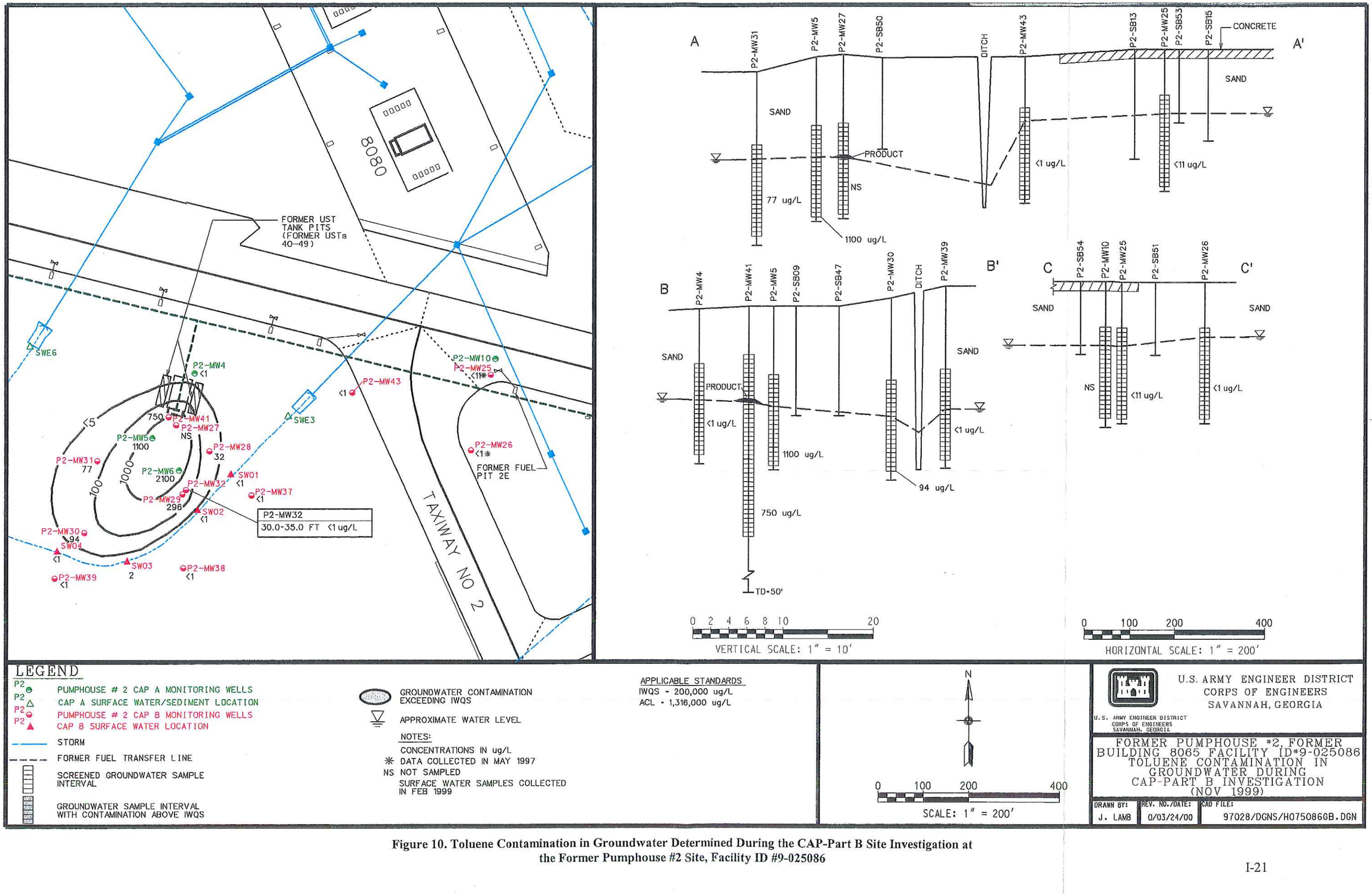
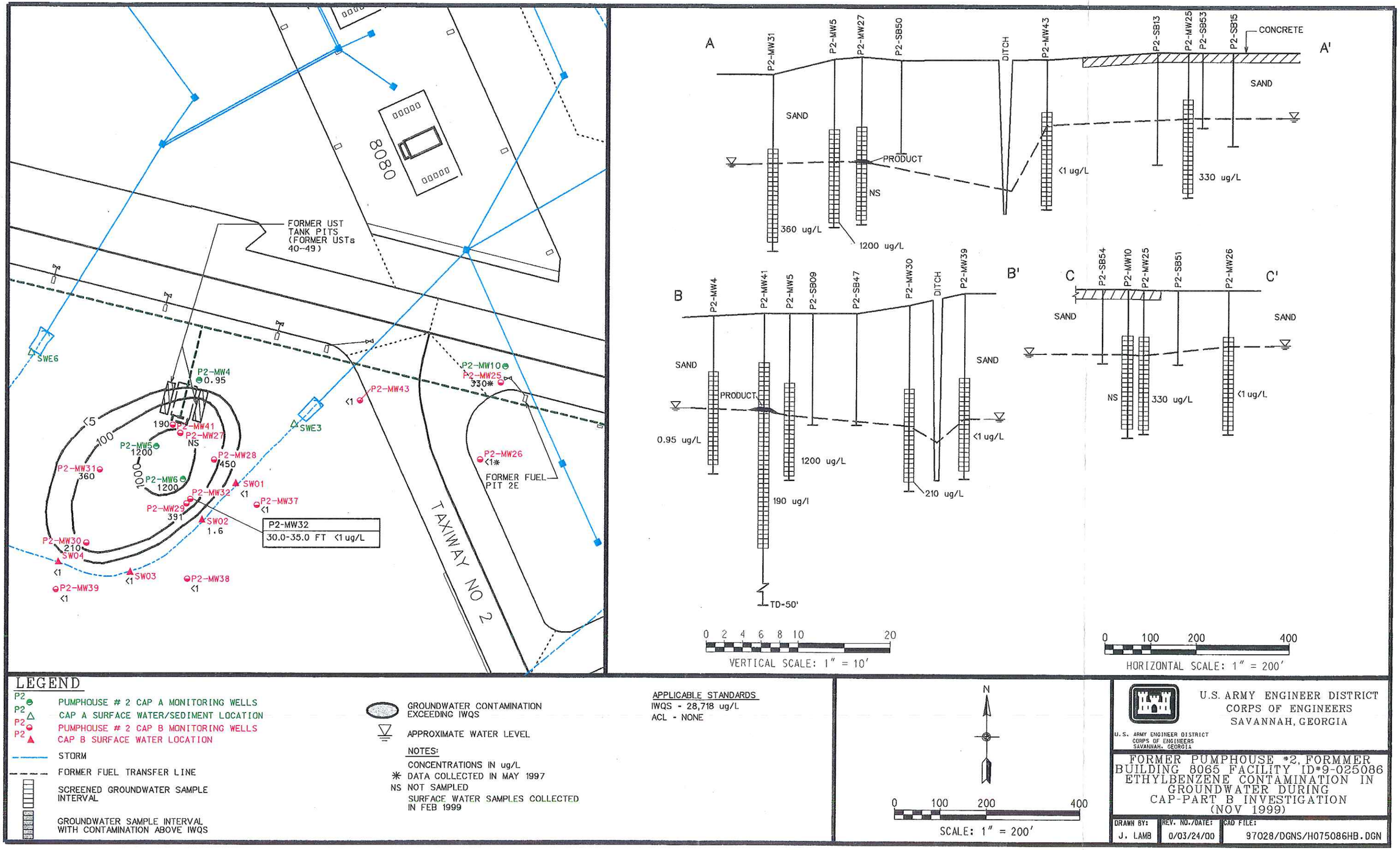


Figure 10. Toluene Contamination in Groundwater Determined During the CAP-Part B Site Investigation at the Former Pumphouse #2 Site, Facility ID #9-025086

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LEGEND

- P2 ● PUMPHOUSE # 2 CAP A MONITORING WELLS
- P2 △ CAP A SURFACE WATER/SEDIMENT LOCATION
- P2 ● PUMPHOUSE # 2 CAP B MONITORING WELLS
- P2 ▲ CAP B SURFACE WATER LOCATION
- STORM
- FORMER FUEL TRANSFER LINE
- SCREENED GROUNDWATER SAMPLE INTERVAL
- GROUNDWATER SAMPLE INTERVAL WITH CONTAMINATION ABOVE IWQS
- GROUNDWATER CONTAMINATION EXCEEDING IWQS
- APPROXIMATE WATER LEVEL

NOTES:
CONCENTRATIONS IN ug/L
* DATA COLLECTED IN MAY 1997
NS NOT SAMPLED
SURFACE WATER SAMPLES COLLECTED IN FEB 1999

APPLICABLE STANDARDS
IWQS - 28,718 ug/L
ACL - NONE

N
0 100 200 400
SCALE: 1" = 200'

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FORMER PUMPHOUSE #2, FORMMER BUILDING 8065 FACILITY ID#9-025086 ETHYLBENZENE CONTAMINATION IN GROUNDWATER DURING CAP-PART B INVESTIGATION (NOV 1999)

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J. LAMB	0/03/24/00	97028/DGNS/H075086HB.DGN

Figure 11. Ethylbenzene Contamination in Groundwater Determined During the CAP-Part B Site Investigation at the Former Pumphouse #2 Site, Facility ID #9-025086

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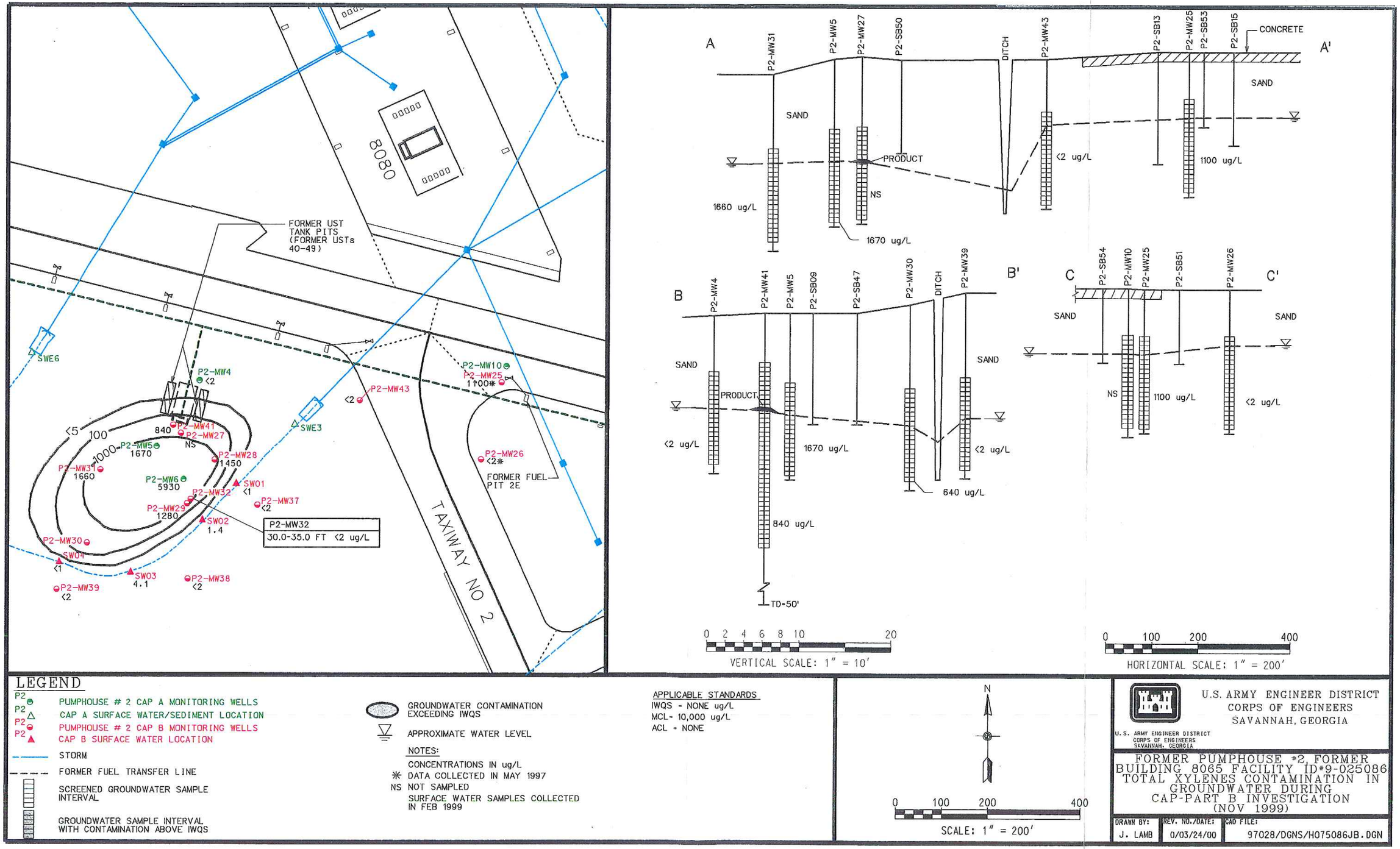
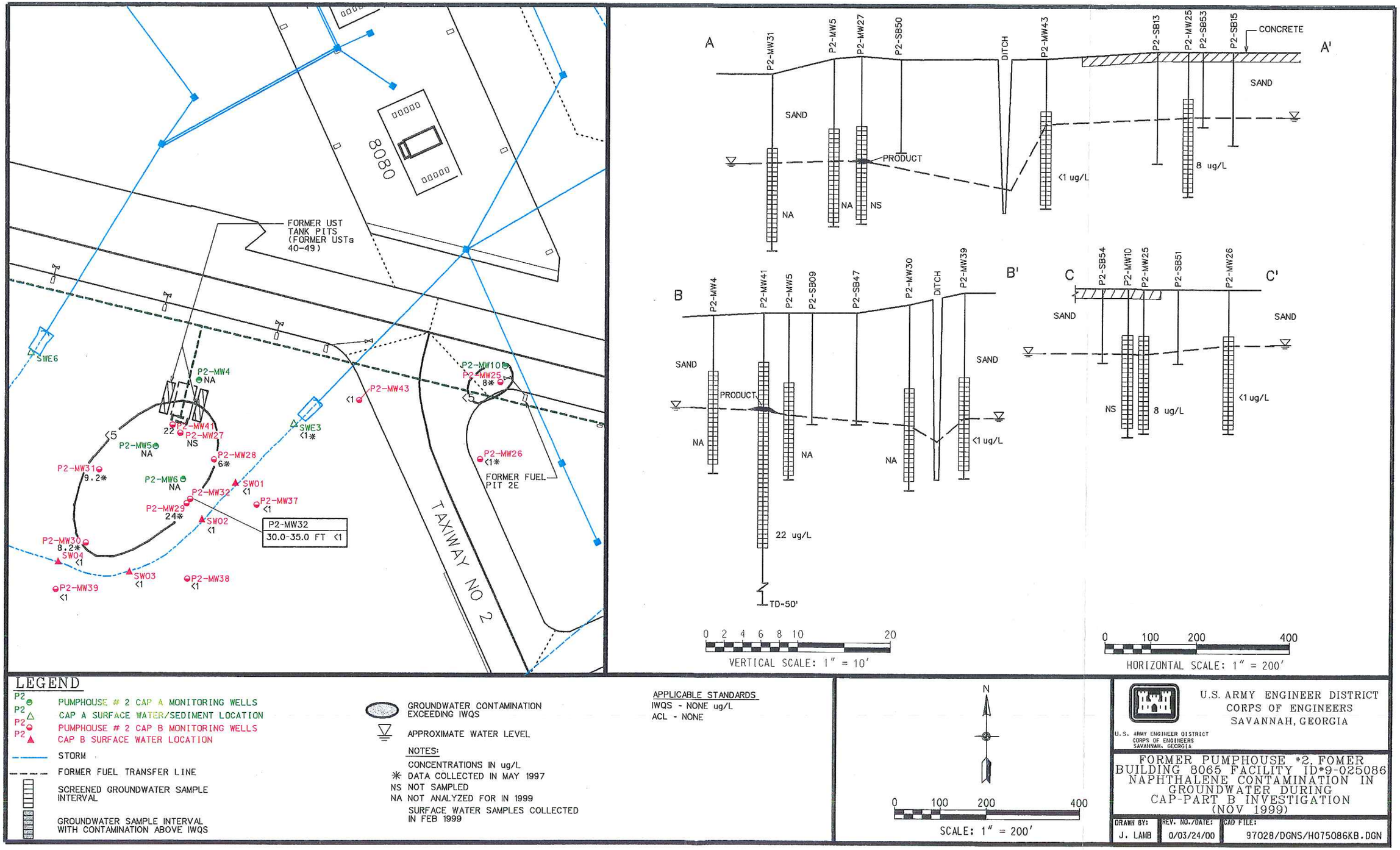


Figure 12. Total Xylenes Contamination in Groundwater Determined During the CAP-Part B Site Investigation at the Former Pumphouse #2 Site, Facility ID #9-025086

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LEGEND

- P2 ● PUMPHOUSE # 2 CAP A MONITORING WELLS
- P2 △ CAP A SURFACE WATER/SEDIMENT LOCATION
- P2 ● PUMPHOUSE # 2 CAP B MONITORING WELLS
- P2 ▲ CAP B SURFACE WATER LOCATION
- STORM
- FORMER FUEL TRANSFER LINE
- SCREENED GROUNDWATER SAMPLE INTERVAL
- GROUNDWATER SAMPLE INTERVAL WITH CONTAMINATION ABOVE IWQS
- GROUNDWATER CONTAMINATION EXCEEDING IWQS
- APPROXIMATE WATER LEVEL

NOTES:
CONCENTRATIONS IN ug/L
✳ DATA COLLECTED IN MAY 1997
NS NOT SAMPLED
NA NOT ANALYZED FOR IN 1999
SURFACE WATER SAMPLES COLLECTED IN FEB 1999

APPLICABLE STANDARDS
IWQS - NONE ug/L
ACL - NONE

N
0 100 200 400
SCALE: 1" = 200'

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FORMER PUMPHOUSE #2, FOMER BUILDING 8065 FACILITY ID#9-025086 NAPHTHALENE CONTAMINATION IN GROUNDWATER DURING CAP-PART B INVESTIGATION (NOV 1999)

DRAWN BY:	REV. NO./DATE:	CAD FILE:
J. LAMB	0/03/24/00	97028/DGNS/H075086KB.DGN

Figure 13. Naphthalene Contamination in Groundwater Determined During the CAP-Part B Site Investigation at the Former Pumphouse #2 Site, Facility ID #9-025086

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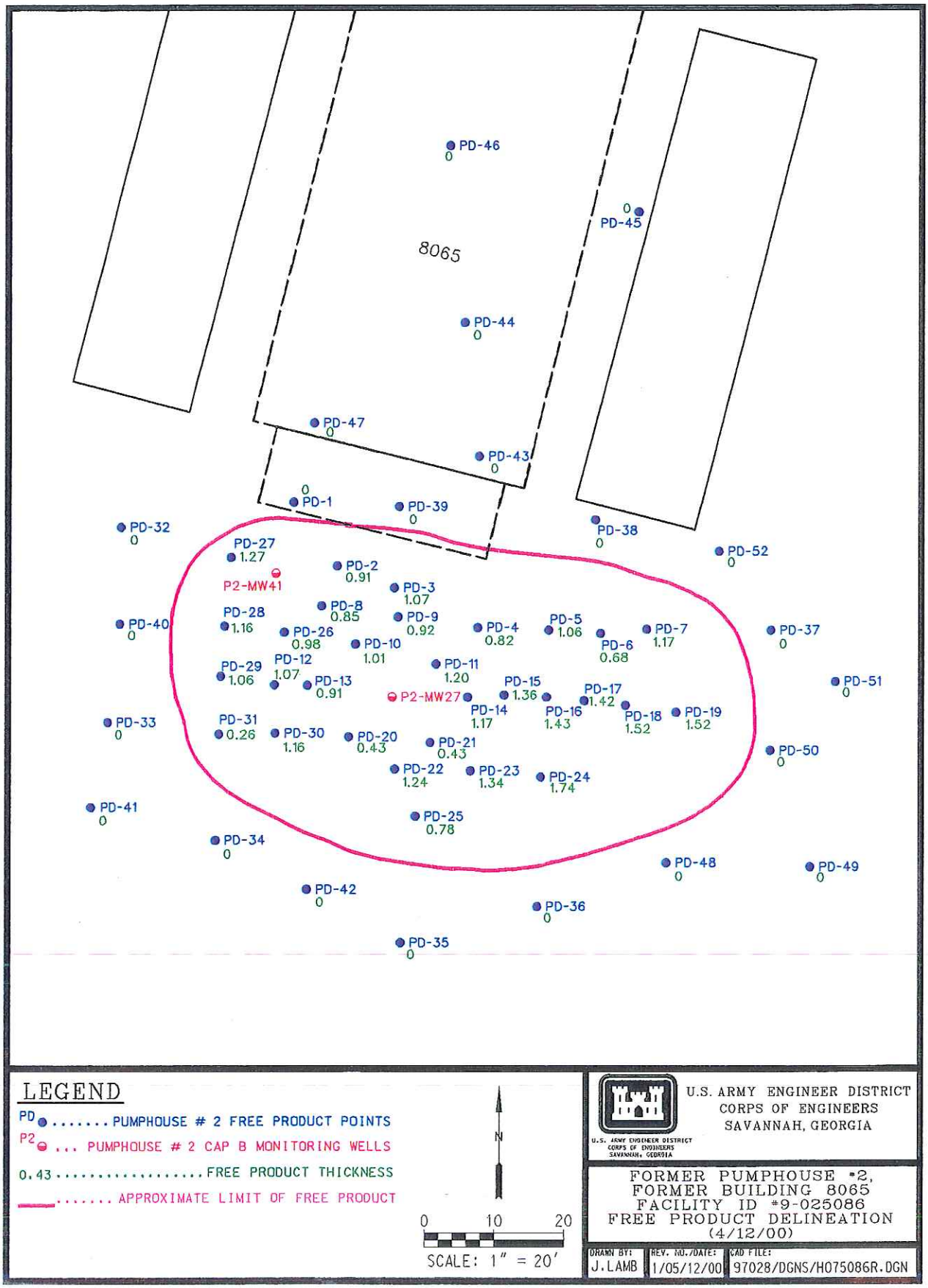


Figure 14. Delineation of Free Product (April 2000) at the Former Pumphouse #2 Site, Facility ID #9-025086

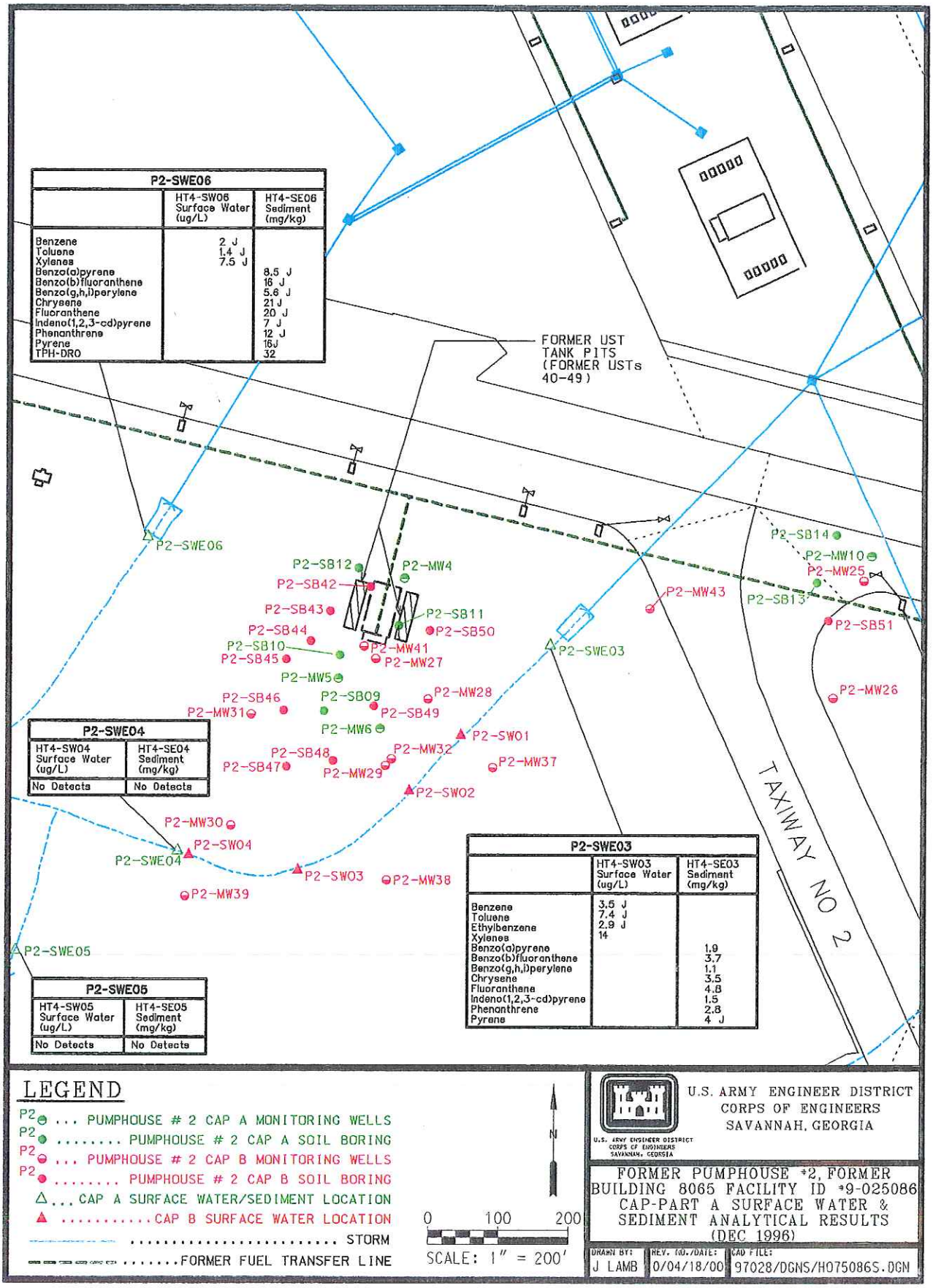


Figure 15. CAP-Part A Surface Water and Sediment Analytical Results at the Former Pumphouse #2 Site, Facility ID #9-025086

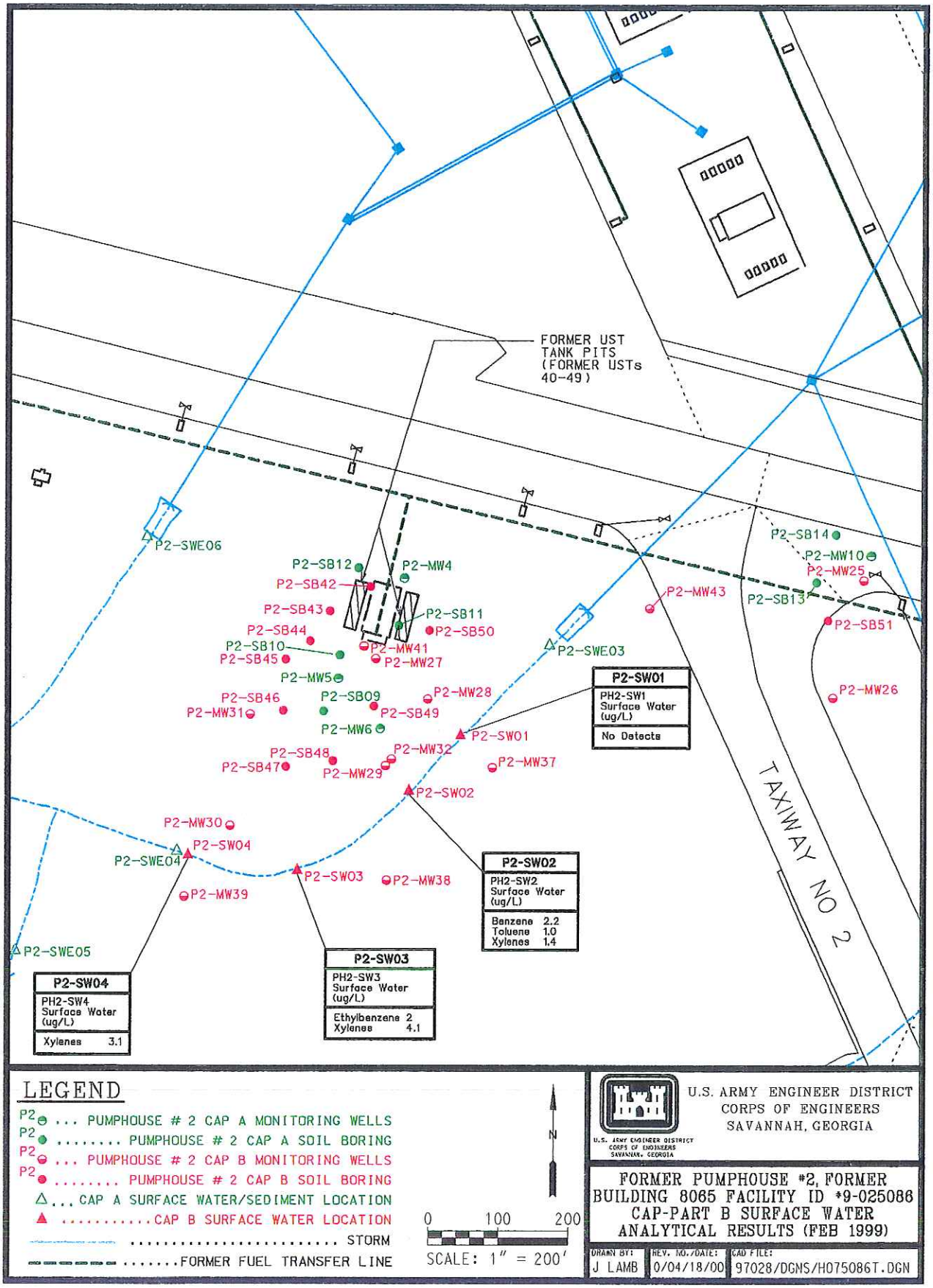
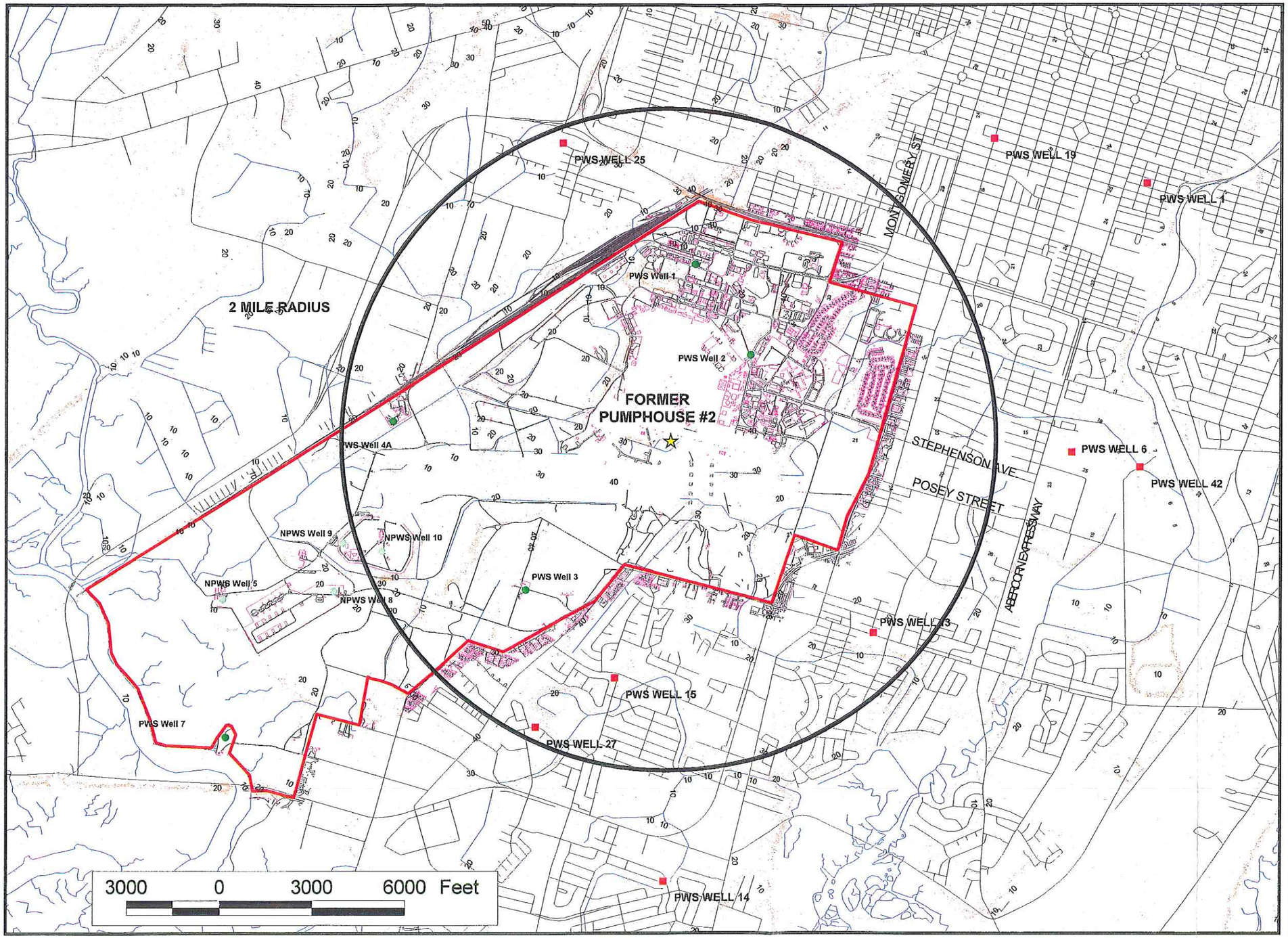


Figure 16. CAP-Part B Surface Water Analytical Results at the Former Pumphouse #2 Site, Facility ID #9-025086

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Legend:

- Hunter Army Airfield Boundary
- Surface Water (streams/rivers/drains)
- Railroad
- Roads (primary)
- Buildings and Planimetric Features
- Ground Contour (1 FT Intervals)
- HAAF Non-Public Water Supply Well
- HAAF Public Water Supply Well
- City of Savannah Public Water Supply Well

NOTE:
Contours were created from Digital Elevation Models translated from http://mapping.usgs.gov/, which were obtained from the following U.S.G.S. 7.5 minuteTopographic Quad sheets: Borroughs, Isle of Hope, Savannah, and Garden City. Roads, surface water, and railroad were translated from http://www.gis.state.ga.us/ . Hunter Army Airfield BaseMap received as Microstation files from Fort Stewart.

N

GA State Plane NAD83 (feet)

SAIC
Science Applications International Corporation

FORMER PUMPHOUSE #2,
FORMER BUILDING 8065
FACILITY ID: 9-025086

REVISION	DRAWN BY:	CHKD BY:	DATE:
0	K. Cutshaw	S. Stoller	03/24/00
1	K. Cutshaw	S. Stoller	04/18/00

FILE REFERENCES

051rds_polyline	burroughsctrf
051hyd_polyline	isleofhopectrf
051rr	savannahctrf
hunterarea	gardencityctrf
	trveh.dgn
	bggen.dgn

SHT 1 of 1 — DRAWING #
97028\\C11HUNTERPH2.APR — ARCVIEW PROJECT NAME

Figure 17. Locations of Public and Non-Public Supply Wells at Hunter Army Airfield and Surrounding Area

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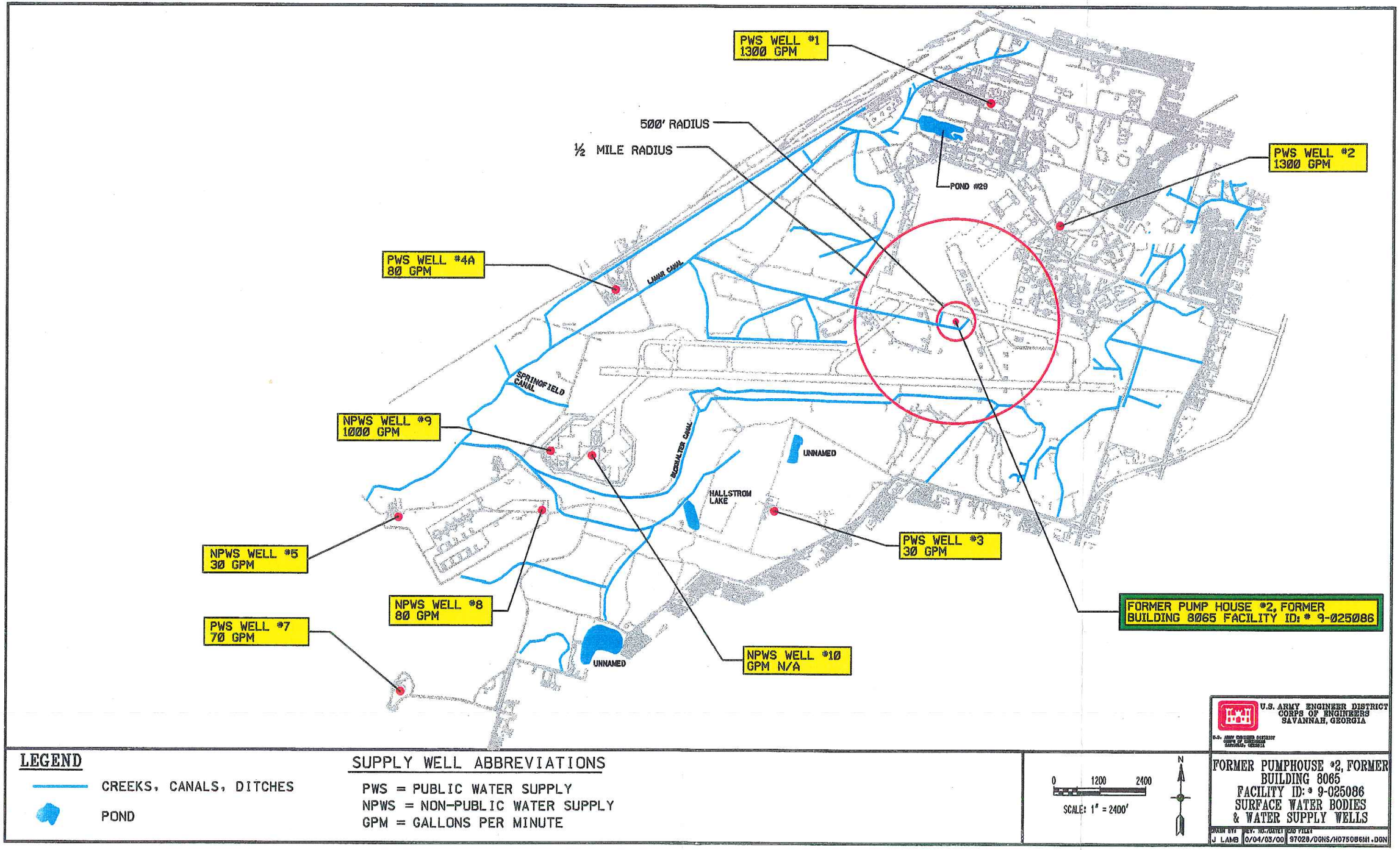


Figure 18. Locations of Surface Water Bodies and Water Supply Wells at Hunter Army Airfield

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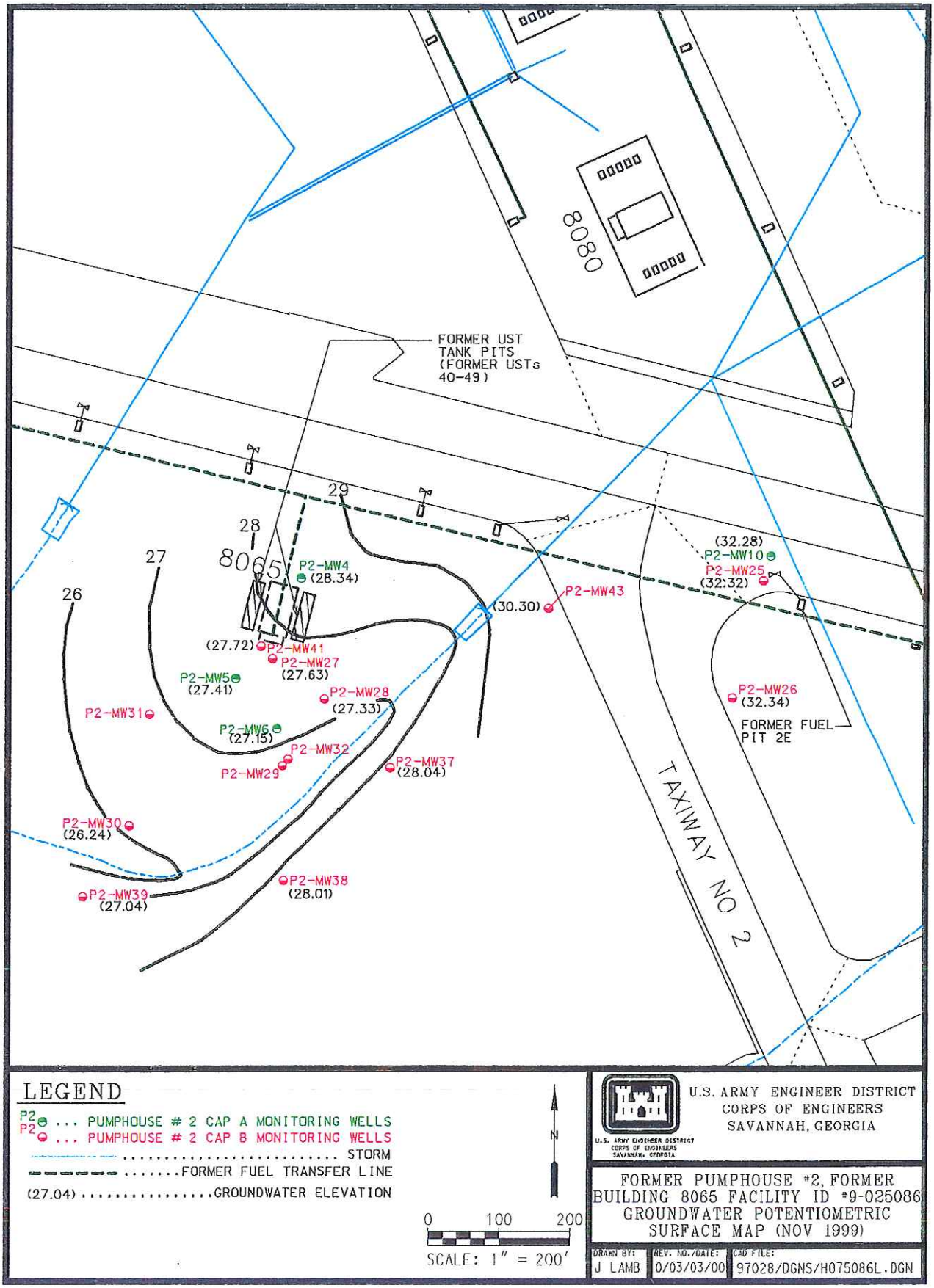


Figure 19. Groundwater Potentiometric Surface Map (December 1999) for the Former Pumphouse #2 Site, Facility ID #9-025086

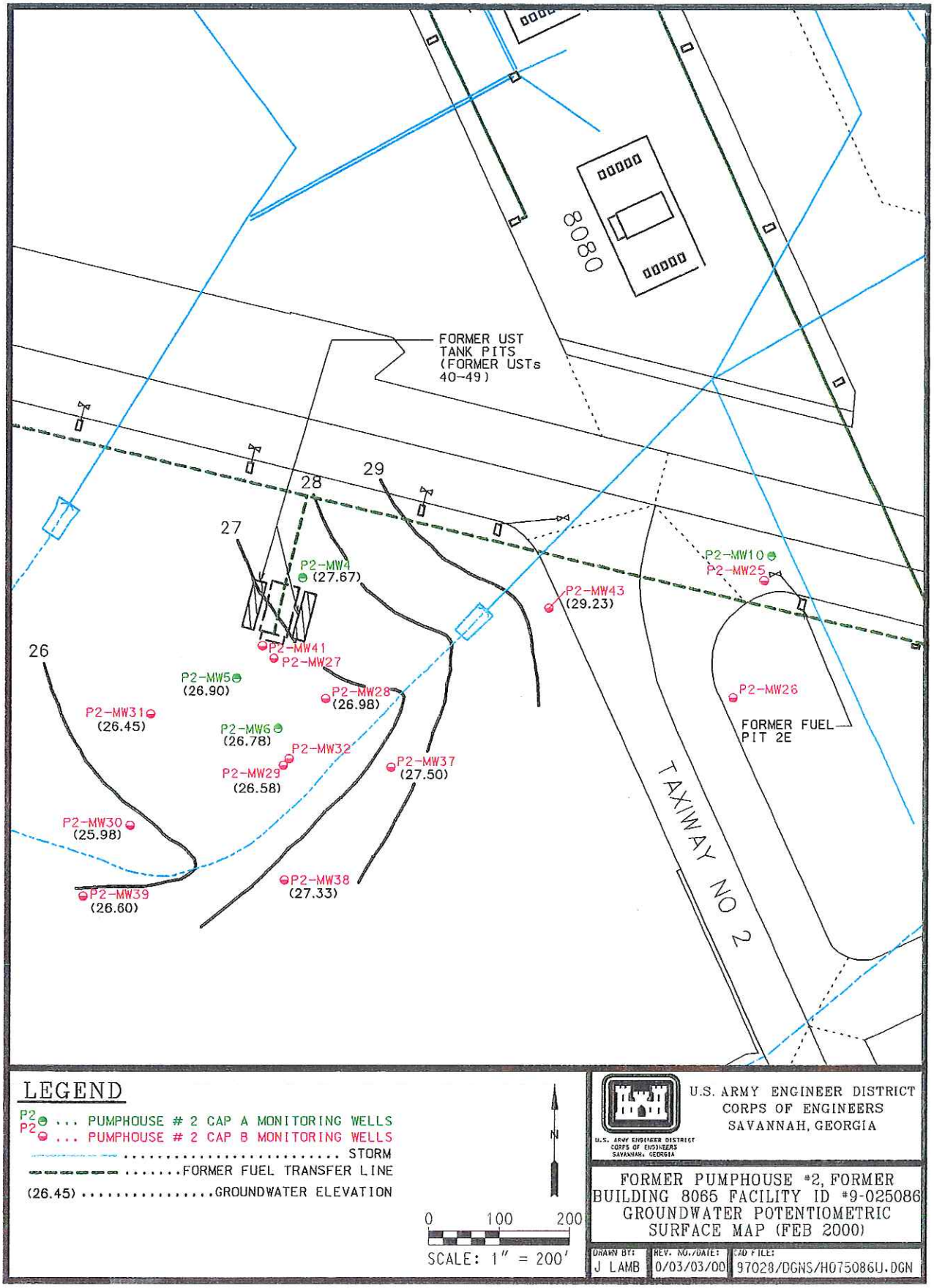


Figure 20. Groundwater Potentiometric Surface Map (February 2000) for the Former Pumphouse #2 Site, Facility ID #9-025086

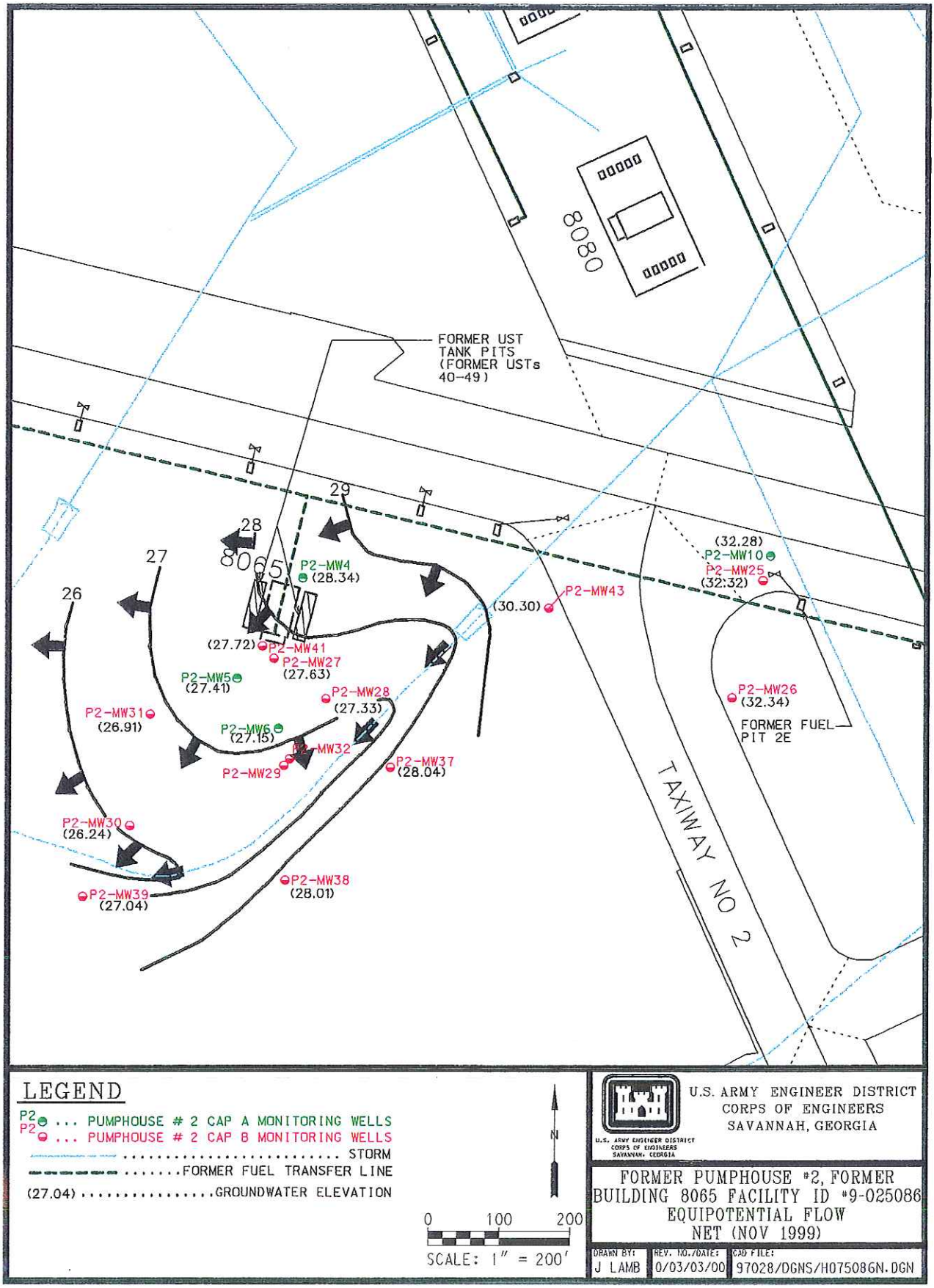


Figure 21. Equipotential Flow Net (December 1999) for the Former Pumphouse #2 Site, Facility ID #9-025086

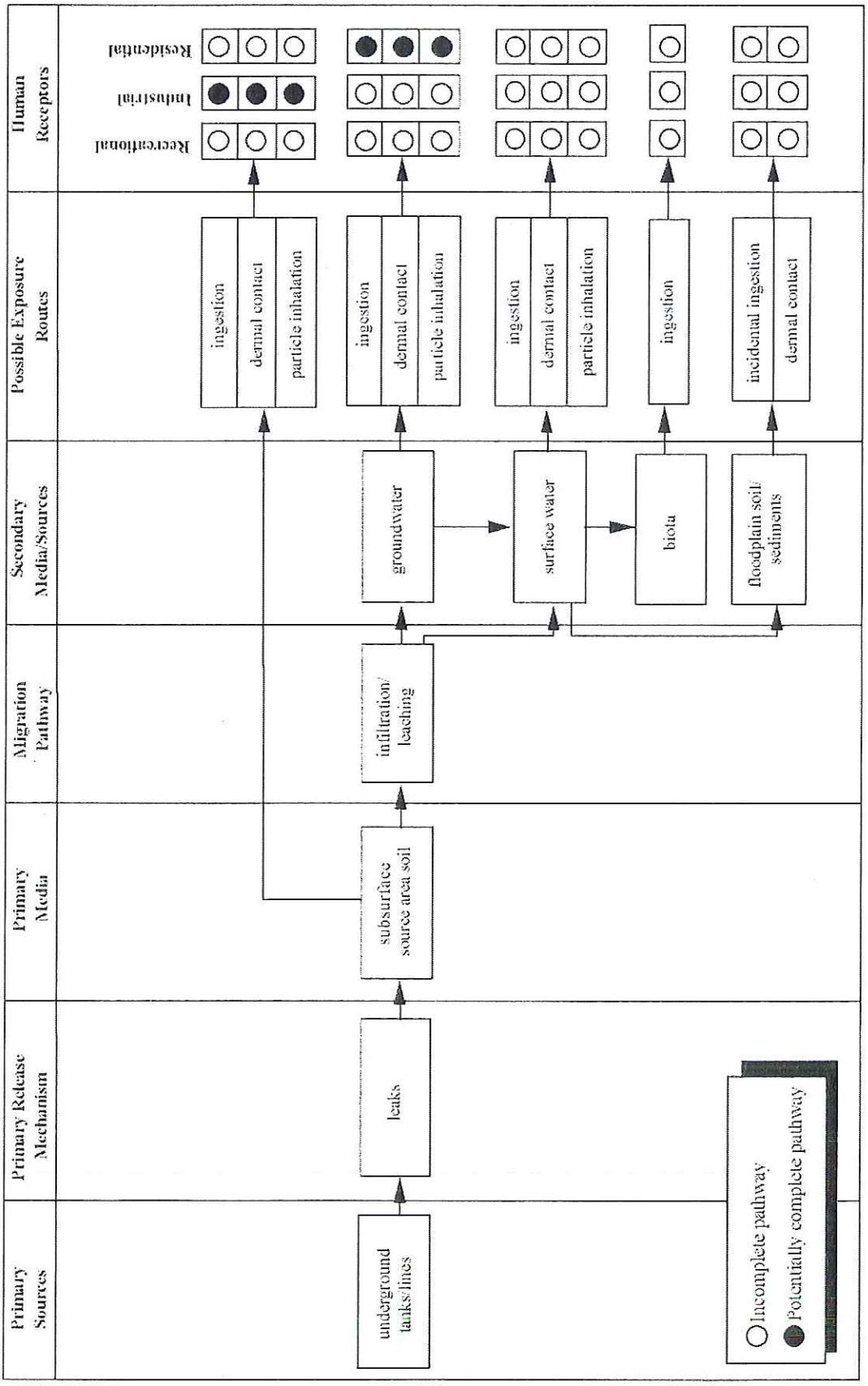


Figure 22. Conceptual Exposure Model for the Former Pumphouse #2 Site, Facility ID #9-025086

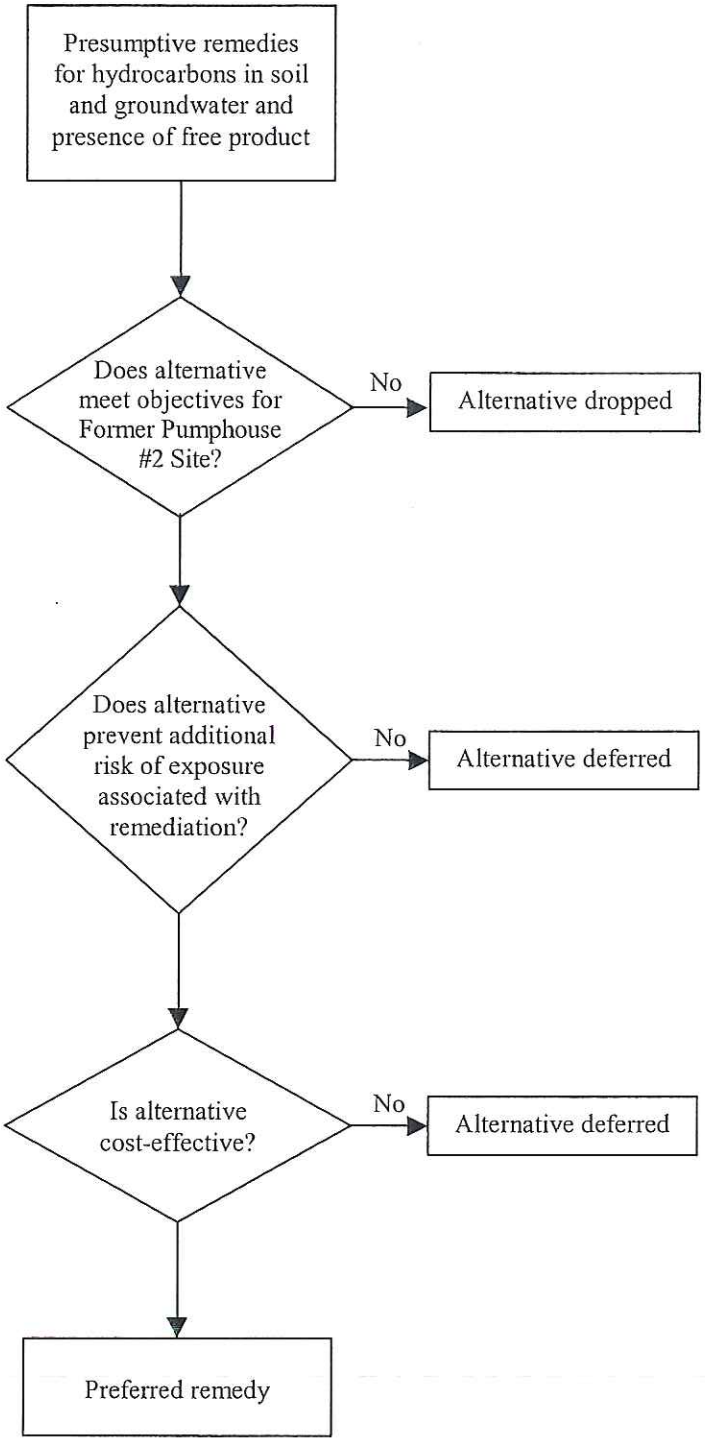


Figure 23. Remedial Alternatives Selection Process for the Former Pumphouse #2 Site, Facility ID #9-025086

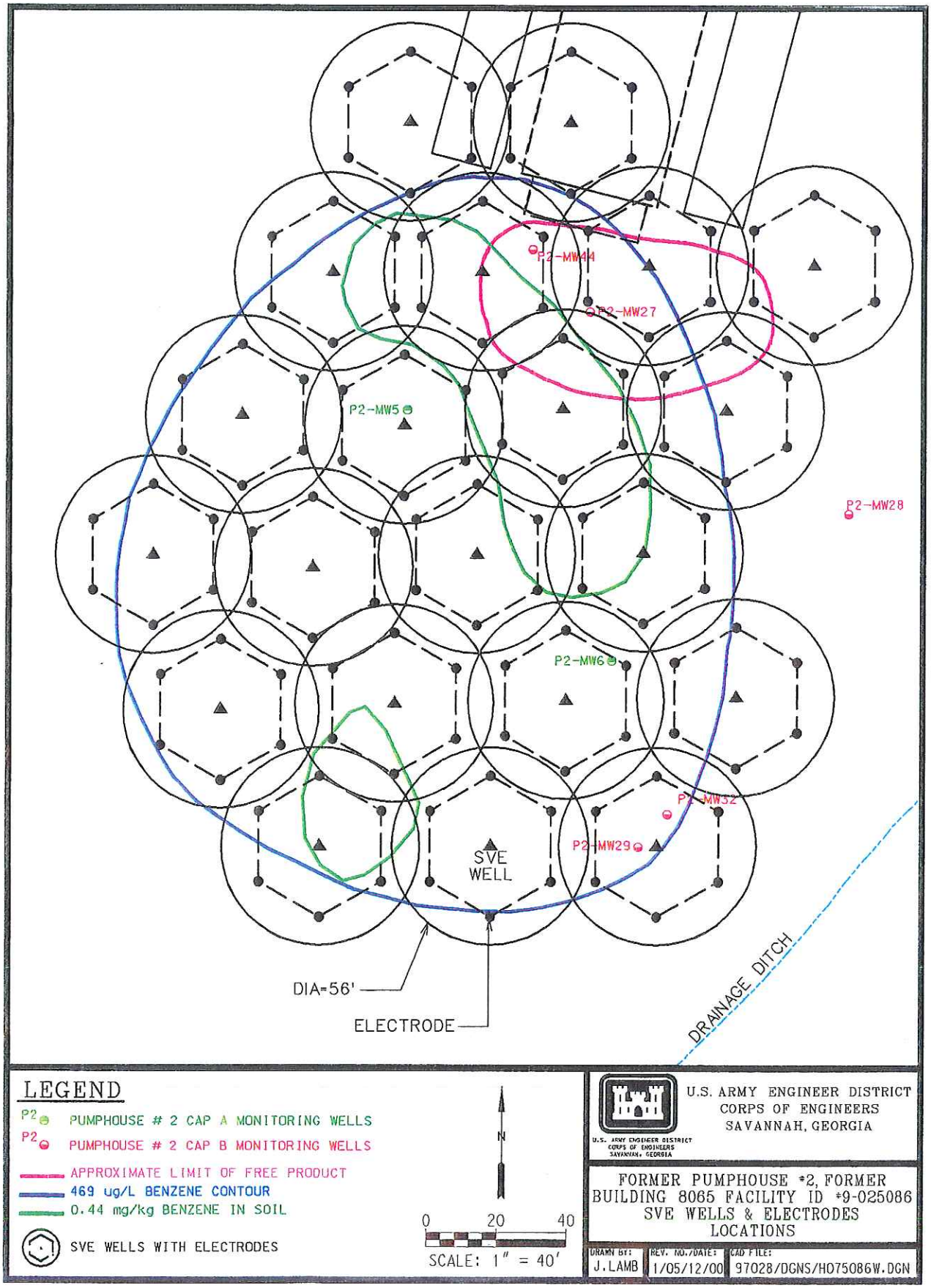


Figure 24. Proposed Site Plan for Six Phase Heating at the Former Pumphouse #2 Site, Facility ID #9-025086

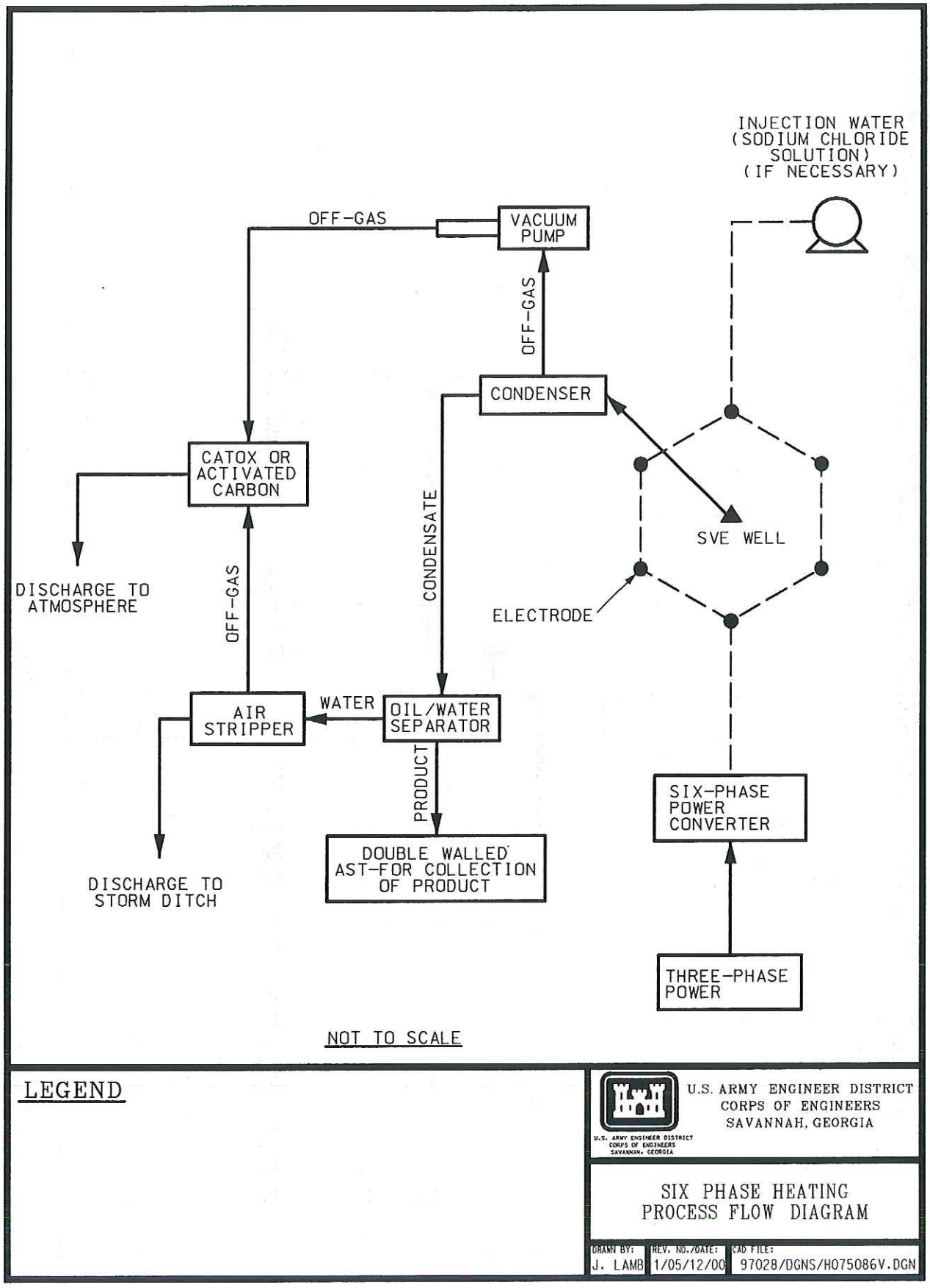


Figure 25. Six Phase Heating Process Flow Diagram at the Former Pumphouse #2 Site, Facility ID #9-025086

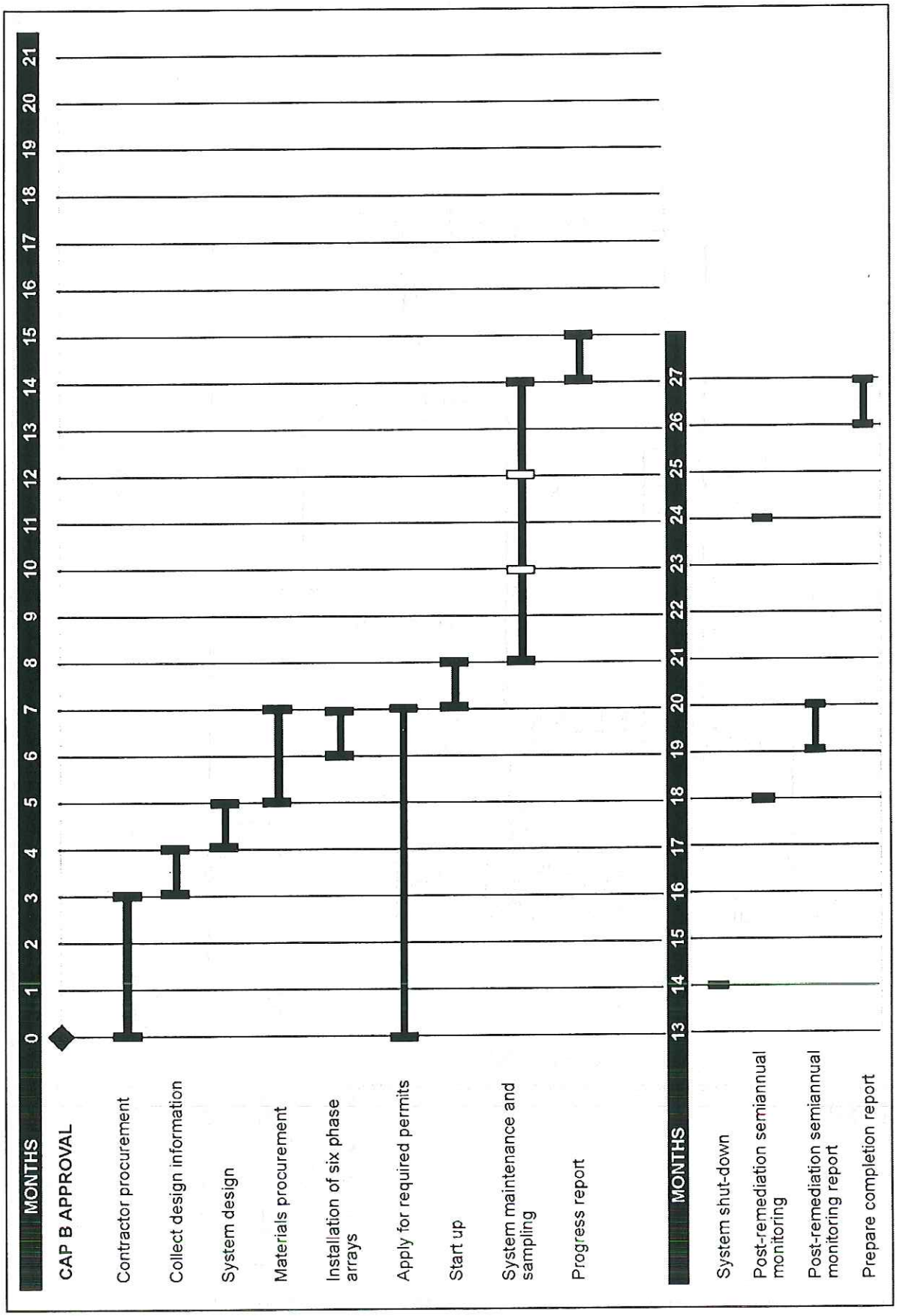


Figure 26. Milestone Schedule for the Remedial Action at the Former Pumphouse #2 Site, Facility ID #9-025086

APPENDIX II

REPORT TABLES

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Table 1a. UST System Closure – Soil Analytical Results
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Depth (ft BGS)	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH (mg/kg)
1995 UST Removal Activities (Anderson Columbia Environmental)								
8065 – S-1	unknown	04/05/95	0.002 U	0.002 U	0.002 U	0.006 U	ND	44.8
8065 – S-2	unknown	04/05/95	0.002 U	0.002 U	0.002 U	0.0061 U	ND	82
8065 – S-3	unknown	04/05/95	0.0024 U	0.0024 U	0.0024 U	0.0072 U	ND	154
1998 UST Removal Activities (Earth Tech) USTs 40 & 41 were removed in 1998. In correspondence dated June 17, 1998 (White 1998), GA EPD approved the request not to conduct soil sampling at the site because the tanks removed in 1998 were located within the area of soil contamination previously defined at the site during the CAP-Part A investigation in 1997.								
GUST Soil Threshold Levels (Table B, Column 1)			0.017	115	18	700	NRC	NRC

Table 1b. UST System Closure – Soil Analytical Results
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (mg/kg)						Total PAHs (mg/kg)
1995 UST Removal Activities (Anderson Columbia Environmental)									
8065 – S-1	unknown	04/05/95							ND
8065 – S-2	unknown	04/05/95							ND
8065 – S-3	unknown	04/05/95							ND
1998 UST Removal Activities (Earth Tech) USTs 40 & 41 were removed in 1998. In correspondence dated June 17, 1998 (White 1998), GA EPD approved the request not to conduct soil sampling at the site because the tanks removed in 1998 were located within the area of soil contamination previously defined at the site during the CAP-Part A investigation in 1997.									
GUST Soil Threshold Levels (Table B, Column 1)									NRC

NOTES:

Bold values exceed STLs.

BGS Below ground surface.
BTEX Benzene, toluene, ethylbenzene, and xylenes.
NRC No regulatory criteria.
PAH Polynuclear Aromatic Hydrocarbons
TPH Total petroleum hydrocarbons.

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.
UJ Indicates that the compound was not detected above an approximated sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
= Indicates that the compound was detected at the concentration reported.

Table 1c. UST System Closure – Groundwater Analytical Results
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)
1995 UST Removal Activities (Anderson Columbia Environmental)						
8065 T-2 GW	3/29/95	**330** =	1090 =	770 =	1174 =	3364
8065 T-3 GW	3/29/95	**520** =	670 =	1150 =	2270 =	4610
8065 T-4 GW	3/29/95	[a]	[a]	[a]	[a]	16710
8065 T-5 GW	3/29/95	**100 U**	245 =	620 =	610 =	1475
8065 T-7 GW	3/29/95	**4660** =	7440 =	1150 =	6920 =	20170
8065 T-8 GW	3/29/95	**15800** =	21400 =	3000 =	17410 =	57610
8065 T-9 GW	3/29/95	**100 U**	5390 =	820 =	5450 =	11660
8065 T-10 GW	3/29/95	**1310** =	1410 =	2250 =	11850 =	16820
1998 UST Removal Activities (Earth Tech) USTs 40 & 41 were removed in 1998. No groundwater sampling was conducted because the tanks removed in 1998 were located within the area of contamination previously defined at the site during the CAP-Part A investigation in 1997.						
In-Stream Water Quality Standards (Chapter 391-3-6)		71.28	200,000	28,718	NRC	NRC

NOTES:

[a] Individual BTEX results were not included in the closure report.

Bold values exceed IWQS

BTEX Benzene, toluene, ethylbenzene, and xylenes

ND Not detected

NRC No regulatory criteria.

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

Table 1d. UST System Closure – Groundwater Analytical Results
(POLYNUCLEAR ANALYTICAL RESULTS)

Sample Location	Date Sampled	Detected PAH Compounds (µg/L)															Total PAHs (µg/L)
		acenaphthene	anthracene	benzo (a) anthracene	benzo(a) pyrene	benzo (b) fluoranthene	benzo(g,h,i) perylene	benzo(k) fluoranthene	chrysene	dibenzo(a,h) anthracene	fluoranthene	fluorene	indeno(1,2,3-cd)	naphthalene	phenanthrene	pyrene	
1995 UST Removal Activities (Anderson Columbia Environmental)																	
8065 T-2 GW		143 =	703 =	**837 =**	**665 =**	241 =	361 =	**241 =**	**837 =**		**752 =**	109 =			703 =	680 =	5911
8065 T-3 GW		334 =	774 =	**546 =**	**880 =**	326 =		**326 =**	**546 =**		**872 =**	226 =		704 =	774 =	950 =	7258
8065 T-4 GW																	1996
8065 T-5 GW		357 =	536 =	**544 =**		375 =			**544 =**		**767 =**	223 =		439 =	536 =	830 =	6494
8065 T-7 GW																	ND
8065 T-8 GW			143 =								119 =			385 =	143 =	111 =	901
8065 T-9 GW			326 =	**470 =**	**806 =**	224 =	453 =	**224 =**	**470 =**	**134 =**	**492 =**		**134 =**		326 =	542 =	4601
8065 T-10 GW			157 =	**140 =**	**273 =**	102 =		**102 =**	**140 =**		228 =				157 =	237 =	1536
1998 UST Removal Activities (Earth Tech) USTs 40 & 41 were removed in 1998. No groundwater sampling was conducted because the tanks removed in 1998 were located within the area of contamination previously defined at the site during the CAP-Part A investigation in 1997.																	
In-Stream Water Quality Standards (Chapter 391-3-6)		NRC	110,000	0.0311	0.0311	NRC	NRC	0.0311	0.0311	0.0311	370	14,000	0.0311	NRC	NRC	11,000	NRC

NOTE:

Bold values exceed IWQS

BGS Below ground surface

ND Not detected

NRC No regulatory criteria.

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

Table 2a. CAP-Part A/B – Soil Analytical Results
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH-DRO (mg/kg)	TPH-GRO (mg/kg)
CAP-Part A Investigation – 1996										
Former Pumphouse #2 Tank Pit Area										
P2-MW04	WB0401	2.0 – 4.0	11/19/96	0.0053 U	0.0053 U	0.0053 U	0.0053 U	ND	370 J	0.19 UJ
P2-MW04	WB0402	13.0 – 15.0	11/19/96	0.0014 U	0.019 U	0.018 U	0.0066 U	ND	12 UJ	6.6 =
P2-MW05	WB0501	8.0 – 10.0	11/19/96	**0.021 U**	0.28 U	1 J	1.6 J	2.6	49 J	200 J
P2-MW05	WB0502	13.0 – 15.0	11/19/96	0.0015 U	0.02 U	0.019 U	0.0069 U	ND	34 J	4.3 =
P2-MW06	WB0601	9.0 – 11.0	11/19/96	**0.054 U**	0.72 J	7.2 J	13 J	20.92	11 UJ	1600 J
P2-MW06	WB0602	14.0 – 16.0	11/19/96	**0.28 J**	0.82 =	0.3 U	0.57 J	1.67	12 UJ	56 =
P2-SB09	SB0901	4.0 – 6.0	11/19/96	0.00026 U	0.0035 U	0.0033 U	0.0012 U	ND	11 UJ	0.2 UJ
P2-SB09	SB0902	10.0 – 12.0	11/19/96	**0.120 U**	110 J	**120 J**	360 J	590	18 J	43000 J
P2-SB10	SB1001	4.0 – 6.0	11/19/96	**0.020 U**	0.82 J	0.26 U	0.32 J	1.14	24 J	130 J
P2-SB10	SB1002	8.0 – 10.0	11/19/96	***5.2 J***	43 J	**120 J**	300 J	468.2	26 J	43000 J
P2-SB11	SB1101	4.0 – 6.0	11/19/96	0.0062 U	0.0062 U	0.0062 U	0.0062 U	ND	23 J	0.22 J
P2-SB11	SB1102	10.0 – 12.0	11/19/96	**0.024 U**	3.1 J	1.4 J	7.1 J	11.6	35 J	5000 J
P2-SB12	SB1201	0.0 – 2.0	11/19/96	0.0053 U	0.0053 U	0.0053 U	0.0053 U	ND	10 UJ	0.19 J
P2-SB12	SB1202	10.0 – 12.0	11/19/96	0.0062 U	0.0062 U	0.0062 U	0.0078 =	0.0078	12 UJ	1.1 =
Former Fuel Pit 2E										
P2-MW10	WB1001	8.0 – 10.0	11/20/96	***1.6 J***	0.83 J	14 J	49 J	65.43	10 =	4700 J
P2-MW10	WB1002	13.0 – 15.0	11/20/96	0.0061 U	0.0061 U	0.0066 =	0.091 =		4.7 =	0.71 J
P2-SB13	SB1301	4.0 – 6.0	11/19/96	0.0059 U	0.0059 U	0.015 =	0.052 =	0.067	12 UJ	2.4 =
P2-SB13	SB1302	10.0 – 12.0	11/19/96	0.0063 U	0.0063 U	0.0063 U	0.0091 =	0.0091	13 UJ	0.74 =
P2-SB14	SB1401	4.0 – 6.0	11/19/96	0.0053 U	0.0053 U	0.0053 U	0.0053 U	ND	11 UJ	0.19 UJ
P2-SB14	SB1402	10.0 – 12.0	11/19/96	0.0062 U	0.0062 U	0.0062 U	0.0062 U	ND	12 UJ	0.28 =
P2-SB15	SB1501	0.0 – 2.0	11/20/96	0.0054 U	0.0054 U	0.0054 U	0.0054 U	ND	4.2 =	0.27 U
P2-SB15	SB1502	4.0 – 6.0	11/20/96	0.0057 U	0.0057 U	0.0057 U	0.0057 U	ND	7.7 =	0.28 U
GUST Soil Threshold Levels (Table B, Column 1)				0.017	115	18	700	NRC	NRC	NRC
Alternate Threshold Levels (Appendix VI)				0.44	2050	389	700	—	—	—

NOTES:

Bold values exceed STLs
Italics values exceed ATLs

BGS	Below ground surface	ND	Not detected
BTEX	Benzene, toluene, ethylbenzene, and xylene	NRC	No regulatory criteria
DRO	Diesel range organics	TPH	Total petroleum hydrocarbon
GRO	Gasoline range organics		

Laboratory Qualifiers

U	Indicates that the compound was not detected above the reported sample quantitation limit.
UJ	Indicates that the compound was not detected above an approximated sample quantitation limit.
J	Indicates that the value for the compound was an estimated value.
=	Indicates that the compound was detected at the concentration reported.

Table 2a. CAP-Part A/B – Soil Analytical Results (continued)
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH-DRO (mg/kg)	TPH-GRO (mg/kg)
CAP-Part B Investigation – 1997										
Former Pumphouse #2 Tank Pit Area										
P2-MW27	WB2701	8.0 – 10.0	05/09/97	**0.020 UJ**	3.5 J	13 J	50 J	66.5	54 =	710 J
P2-MW27	WB2702	13.0 – 15.0	05/09/97	0.0062 U	0.015 =	0.0084 =	0.017 =	0.0404	12 U	0.22 UJ
P2-MW28	WB2801	8.0 – 10.0	05/08/97	0.0055 U	0.0055 U	0.0055 U	0.0055 U	ND	11 U	0.2 U
P2-MW28	WB2802	13.0 – 15.0	05/08/97	0.0066 U	0.0066 U	0.0066 U	0.0066 U	ND	13 U	0.24 U
P2-MW29	WB2901	8.0 – 10.0	05/08/97	0.0055 U	0.0055 U	0.0055 U	0.0055 U	ND	22 =	0.2 U
P2-MW29	WB2902	13.0 – 15.0	05/08/97	0.0063 U	0.0063 U	0.0063 U	0.0063 U	ND	13 U	0.23 U
P2-MW30	WB3001	8.0 – 10.0	05/09/97	0.0057 U	0.0057 U	0.0057 U	0.0057 U	ND	11 U	0.2 UJ
P2-MW30	WB3002	13.0 – 15.0	05/09/97	0.0061 U	0.0096 =	0.0061 U	0.01 =	0.0196	12 U	0.22 UJ
P2-MW31	WB3101	8.0 – 10.0	05/09/97	0.0053 U	0.0053 U	0.0053 U	0.0053 U	ND	12 =	0.19 UJ
P2-MW31	WB3102	13.0 – 15.0	05/09/97	0.0061 U	0.0064 =	0.0061 U	0.0061 U	0.0064	12 U	0.22 UJ
P2-MW32	WB3201	4.0 – 6.0	05/13/97	0.0052 U	0.0052 U	0.0052 U	0.0052 U	ND	10 U	0.19 UJ
P2-MW32	WB3202	8.0 – 10.0	05/13/97	0.0060 U	0.0060 U	0.0060 U	0.0060 U	ND	12 =	0.21 UJ
P2-SB42	SB4201	4.0 – 6.0	05/08/97	0.0062 U	0.025 =	0.033 =	0.036 =	0.094	17 =	0.58 J
P2-SB42	SB4202	8.0 – 10.0	05/08/97	**0.069 U**	0.75 =	2.4 =	17 =	20.15	140 =	170 J
P2-SB43	SB4301	4.0 – 6.0	05/08/97	0.0051 U	0.0051 U	0.0051 U	0.0051 U	ND	68 =	0.18 U
P2-SB43	SB4302	10.0 – 12.0	05/08/97	**0.170 U**	0.77 U	1.0 =	5.7 =	6.7	13 =	130 J
P2-SB44	SB4401	8.0 – 10.0	05/07/97	0.0054 U	0.0054 U	0.0054 U	0.0054 U	ND	140 =	0.062 J
P2-SB44	SB4402	10.0 – 12.0	05/07/97	**0.070 U**	0.32 U	0.32 U	0.37 =	0.37	140 =	70 J
P2-SB45	SB4501	4.0 – 6.0	05/07/97	0.0055 U	0.0095 =	0.0055 U	0.014 =	23.5	9.9 J	0.2 U
P2-SB45	SB4502	8.0 – 10.0	05/07/97	0.0057 U	0.0057 U	0.0057 U	0.0057 U	ND	33 =	0.69 =
P2-SB46	SB4601	4.0 – 6.0	05/07/97	0.0055 U	0.0055 U	0.0055 U	0.0055 U	ND	11 UJ	0.2 U
P2-SB46	SB4602	10.0 – 12.0	05/07/97	**0.067 U**	0.3 U	0.23 J	2.2 =	2.43	18 J	100 J
P2-SB47	SB4701	4.0 – 6.0	05/07/97	0.0055 U	0.0055 U	0.0055 U	0.0055 U	ND	360 J	0.078 J
P2-SB47	SB4702	10.0 – 12.0	05/07/97	**0.067 U**	0.3 U	0.091 J	0.65 =	0.741	22 J	56 J
P2-SB48	SB4801	4.0 – 6.0	05/07/97	0.0057 U	0.0057 U	0.0057 U	0.0057 U	ND	61 J	0.2 U
P2-SB48	SB4802	10.0 – 12.0	05/07/97	***0.67 U***	10 =	16 =	100 =	126	33 J	1900 J
P2-SB49	SB4901	8.0 – 10.0	05/07/97	0.0053 U	0.0053 U	0.0053 U	0.0053 U	ND	11 J	0.11 J
P2-SB49	SB4902	10.0 – 12.0	05/07/97	***1.6 U***	23 =	**38** =	240 =	301	35 J	4400 J
GUST Soil Threshold Levels (Table B, Column 1)				0.017	115	18	700	NRC	NRC	NRC
Alternate Threshold Levels (Appendix VI)				0.44	2050	389	700	—	—	—

NOTES:

Bold values exceed STLs
Italics values exceed ATLs

BGS Below ground surface
BTEX Benzene, toluene, ethylbenzene, and xylene
DRO Diesel range organics
GRO Gasoline range organics
ND Not detected
NRC No regulatory criteria
TPH Total petroleum hydrocarbon

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.
UJ Indicates that the compound was not detected above an approximated sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
= Indicates that the compound was detected at the concentration reported.

Table 2a. CAP-Part A/B – Soil Analytical Results (continued)
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH-DRO (mg/kg)	TPH-GRO (mg/kg)
P2-SB50	SB5001	4.0 – 6.0	05/07/97	0.0055 U	0.0055 U	0.0055 U	0.0055 U	ND	11 UJ	0.2 U
P2-SB50	SB5002	8.0 – 10.0	05/07/97	0.0056 U	0.0056 U	0.0056 U	0.0056 U	ND	11 UJ	0.2 U
Former Fuel Pit 2E										
P2-MW25	WB2501	2.0 – 4.0	05/08/97	0.0052 U	0.0052 U	0.0052 U	0.0052 U	ND	5.1 J	0.19 UJ
P2-MW25	WB2502	8.0 – 10.0	05/08/97	***3.3 U***	15 U	**49** =	270 =	319	13 =	7900 =
P2-MW26	WB2601	4.0 – 6.0	05/08/97	0.0056 U	0.0056 U	0.0056 U	0.0056 U	ND	11 U	0.2 U
P2-MW26	WB2602	8.0 – 10.0	05/08/97	0.0063 U	0.0063 U	0.0063 U	0.0063 U	ND	12 U	0.42 =
P2-SB51	SB5101	2.0 – 4.0	05/07/97	0.0055 U	0.0055 U	0.0055 U	0.0055 U	ND	8.5 J	0.2 U
P2-SB51	SB5102	6.0 – 8.0	05/07/97	**0.066 U**	3.7 U	13 =	97 =	110	32 J	2900 J
P2-SB52	SB5201	4.0 – 6.0	05/07/97	0.0053 U	0.0053 U	0.0053 U	0.0053 U	ND	28 J	0.19 U
P2-SB52	SB5202	6.0 – 8.0	05/07/97	0.0067 U	0.03 U	0.03 U	0.047 =	0.047	10 J	4.8 =
P2-SB53	SB5301	0.0 – 2.0	05/06/97	0.0054 U	0.012 =	0.0054 U	0.0099 =	0.0219	11 U	0.19 U
P2-SB53	SB5302	6.0 – 8.0	05/06/97	***0.49*** =	0.69 =	2.9 =	4.6 =	8.68	15 =	190 =
P2-SB54	SB5401	4.0 – 6.0	05/07/97	0.0054 U	0.0054 U	0.0054 U	0.0054 U	ND	7 J	0.19 U
P2-SB54	SB5402	6.0 – 8.0	05/07/97	0.0057 U	0.0057 U	0.0057 U	0.0057 U	ND	9.3 J	0.2 U
CAP-Part B Investigation – 1999										
Former Pumphouse #2 Tank Pit Area										
P2-MW41	PH2WB4101	10.0 – 12.0	09/30/99	**0.25 U**	0.25 U	0.25 U	1.1 =	1.1	18 =	36 J
P2-MW41	PH2WB4102	26.0 – 28.00	09/30/99	0.0064 U	0.0064 U	0.0064 U	0.013 U	ND	4.3 U	0.32 U
GUST Soil Threshold Levels (Table B, Column 1)				0.017	115	18	700	NRC	NRC	NRC
Alternate Threshold Levels (Appendix VI)				0.44	2050	389	700	—	—	—

NOTES:

Bold values exceed STLs

Italics values exceed ATLs

BGS	Below ground surface	ND	Not detected
BTEX	Benzene, toluene, ethylbenzene, and xylene	NRC	No regulatory criteria
DRO	Diesel range organics	TPH	Total petroleum hydrocarbon
GRO	Gasoline range organics		

Laboratory Qualifiers

U	Indicates that the compound was not detected above the reported sample quantitation limit.
UJ	Indicates that the compound was not detected above an approximated sample quantitation limit.
J	Indicates that the value for the compound was an estimated value.
=	Indicates that the compound was detected at the concentration reported.

Table 2b. CAP-Part A/B – Soil Analytical Results
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Sample ID	Sample Interval (ft BGS)	Date Sampled	Detected PAH Compounds (mg/kg)																	Total PAHs (mg/kg)
				1-methy lnaphthalene	2-methy lnaphthalene	acenaphthene	anthracene	benzo (a) anthracene	benzo(a) pyrene	benzo (b) fluoranthene	benzo(g,h,i) perylene	benzo(k) fluoranthene	chrysene	dibenzo(a,h) anthracene	fluoranthene	fluorene	indeno(1,2,3-cd) pyrene	naphthalene	phenanthrene	pyrene	
CAP-Part A Investigation – 1996																					
Former Pumphouse #2 Tank Pit Area																					
P2-MW04	WB0401	2.0 –4.0	11/19/96																		
P2-MW04	WB0402	13.0 –15.0	11/19/96																		ND
P2-MW05	WB0501	8.0 – 10.0	11/19/96																		ND
P2-MW05	WB0502	13.0 –15.0	11/19/96										0.44 =		1.2 =				1.5 =	1.2 =	4.34
P2-MW06	WB0601	9.0 – 11.0	11/19/96										0.57 =								0.57
P2-MW06	WB0602	14.0 – 16.0	11/19/96							0.66 =			**1.5** =		2.5 =				2.3 =	2.5 =	9.46
P2-SB09	SB0901	4.0 – 6.0	11/19/96						0.53 =				**1.3** =								1.83
P2-SB09	SB0902	10.0 – 12.0	11/19/96																		ND
P2-SB10	SB1001	4.0 – 6.0	11/19/96							**0.81** =			**1.1** =		2.4 =				2.1 =	2.0 =	8.41
P2-SB10	SB1002	8.0 – 10.0	11/19/96							0.5 =			**0.74** =		1.5 =				0.76 =	1.2 =	4.7
P2-SB11	SB1101	4.0 – 6.0	11/19/96							**1.3** =			**1.5** =		3.3 =	0.66 =			3.1 =	2.6 =	12.46
P2-SB11	SB1102	10.0 – 12.0	11/19/96																		ND
P2-SB12	SB1201	0.0 – 2.0	11/19/96			0.59 =			**2.8** =	**3.1** =	0.8 =		**5.0** =		5.6 =	0.82 =	***1.3*** =		4.9 =	4.3 =	27.41
P2-SB12	SB1202	10.0 – 12.0	11/19/96																		ND
Former Fuel Pit 2E																					ND
P2-MW10	WB1001	8.0 – 10.0	11/20/96																		
P2-MW10	WB1002	13.0 –15.0	11/20/96																		ND
P2-SB13	SB1301	4.0 – 6.0	11/19/96																		ND
P2-SB13	SB1302	10.0 – 12.0	11/19/96																		ND
P2-SB14	SB1401	4.0 – 6.0	11/19/96																		ND
P2-SB14	SB1402	10.0 – 12.0	11/19/96																		ND
P2-SB15	SB1501	0.0 – 2.0	11/20/96																		ND
P2-SB15	SB1502	4.0 – 6.0	11/20/96																		ND
GUST Soil Threshold Levels (Table B, Column 1)				NRC	NRC	NRC	NRC	0.660	0.660	0.660	NRC	0.660	0.660	0.660	NRC	NRC	0.660	NRC	NRC	NRC	NRC
Alternate Threshold Limits (Appendix VI)				—	—	—	—	—	6.8	27.0	—	—	10.0	—	—	—	0.660	—	—	—	—

Table footnotes are located on the last page of Table 2b.

Table 2b. CAP-Part A/B – Soil Analytical Results (continued)
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Sample ID	Sample Interval (ft BGS)	Date Sampled	Detected PAH Compounds (mg/kg)																		Total PAHs (mg/kg)
				1-methy lnaphthalene	2-methy lnaphthalene	acenaphthene	anthracene	benzo (a) anthracene	benzo(a) pyrene	benzo (b) fluoranthene	benzo(g,h,i) perylene	benzo(k) fluoranthene	chrysene	dibenzo(a,h) anthracene	fluoranthene	fluorene	indeno(1,2,3-cd) pyrene	naphthalene	phenanthrene	pyrene	
CAP-Part B Investigation – 1997																						
Former Pumphouse #2 Tank Pit Area																						
P2-MW27	WB2701	8.0 – 10.0	05/09/97	0.48 =	0.97 =	0.46 =			0.19 J	0.39 =			0.4 =		1.6 =	0.29 J		0.9 =	1.4 =	1.3 =	8.38
P2-MW27	WB2702	13.0 – 15.0	05/09/97																	0.044 J	0.044
P2-MW28	WB2801	8.0 – 10.0	05/08/97																		ND
P2-MW28	WB2802	13.0 – 15.0	05/08/97																		ND
P2-MW29	WB2901	8.0 – 10.0	05/08/97																		ND
P2-MW29	WB2902	13.0 – 15.0	05/08/97																		ND
P2-MW30	WB3001	8.0 – 10.0	05/09/97										0.12 J		0.064 J						0.184
P2-MW30	WB3002	13.0 – 15.0	05/09/97																		ND
P2-MW31	WB3101	8.0 – 10.0	05/09/97						0.33 J	0.19 J	0.69 =		0.16 J				***0.89 =***			0.05 J	2.31
P2-MW31	WB3102	13.0 – 15.0	05/09/97																		ND
P2-MW32	WB3201	4.0 – 6.0	05/13/97																		ND
P2-MW32	WB3202	8.0 – 10.0	05/13/97	0.037 J	0.62 =											0.079 =					0.736
P2-SB42	SB4201	4.0 – 6.0	05/08/97										0.32 J		0.29 J				0.22 J	0.32 J	1.15
P2-SB42	SB4202	8.0 – 10.0	05/08/97						0.24 J				**3.0 =**		3.3 =					3.9 =	10.44
P2-SB43	SB4301	4.0 – 6.0	05/08/97		0.42 J	0.42 J							**1.6 =**		3.3 =	0.52 J		0.68 =	4.4 =	1.7 =	13.04
P2-SB43	SB4302	10.0 – 12.0	05/08/97										0.29 J		0.65 =				0.54 =	0.6 =	2.08
P2-SB44	SB4401	8.0 – 10.0	05/07/97						0.52 =	**1.4 =**			0.44 =		0.57 =					2.0 =	4.93
P2-SB44	SB4402	10.0 – 12.0	05/07/97												0.38 J					0.48 =	0.86
P2-SB45	SB4501	4.0 – 6.0	05/07/97																		ND
P2-SB45	SB4502	8.0 – 10.0	05/07/97						0.54 =	**1.2 =**			0.6 =				0.56 =			0.5 =	3.4
P2-SB46	SB4601	4.0 – 6.0	05/07/97																		ND
P2-SB46	SB4602	10.0 – 12.0	05/07/97										0.42 =		0.87 =				0.74 =	0.76 =	2.79
P2-SB47	SB4701	4.0 – 6.0	05/07/97																		ND
P2-SB47	SB4702	10.0 – 12.0	05/07/97							0.34 J			**0.73 =**		1.3 =				1.1 =	1.2 =	4.67
P2-SB48	SB4801	4.0 – 6.0	05/07/97																		ND
P2-SB48	SB4802	10.0 – 12.0	05/07/97							0.41 =			**1.0 =**		1.5 =				1.4 =	1.5 =	5.81
GUST Soil Threshold Levels (Table B, Column 1)				NRC	NRC	NRC	NRC	0.660	0.660	0.660	NRC	0.660	0.660	0.660	NRC	NRC	0.660	NRC	NRC	NRC	NRC
Alternate Threshold Limits (Appendix VI)				—	—	—	—	—	6.8	27.0	—	—	10.0	—	—	—	0.660	—	—	—	—

Table footnotes are located on the last page of Table 2b.

Table 2b. CAP-Part A/B – Soil Analytical Results (continued)
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Sample ID	Sample Interval (ft BGS)	Date Sampled	Detected PAH Compounds (mg/kg)																	Total PAHs (mg/kg)
				1-methy lnaphthalene	2-methy lnaphthalene	acenaphthylene	anthracene	benzo (a) anthracene	benzo(a) pyrene	benzo (b) fluoranthene	benzo(g,h,i) perylene	benzo(k) fluoranthene	chrysene	dibenzo(a,h) anthracene	fluoranthene	fluorene	indeno(1,2,3-cd) pyrene	naphthalene	phenanthrene	pyrene	
P2-SB49	SB4901	8.0 – 10.0	05/07/97										0.22 J		0.51 =				0.47 =	0.45 =	1.65
P2-SB49	SB4902	10.0 – 12.0	05/07/97						0.25 J	**0.76 =**			0.63 =		2.5 =	0.26 J			2.7 =	2.0 =	9.1
P2-SB50	SB5001	4.0 – 6.0	05/07/97																		ND
P2-SB50	SB5002	8.0 – 10.0	05/07/97																		ND
Former Fuel Pit 2E																					
P2-MW25	WB2501	2.0 – 4.0	05/08/97																		ND
P2-MW25	WB2502	8.0 – 10.0	05/08/97																		ND
P2-MW26	WB2601	4.0 – 6.0	05/08/97																		ND
P2-MW26	WB2602	8.0 – 10.0	05/08/97																		ND
P2-SB51	SB5101	2.0 – 4.0	05/07/97																		ND
P2-SB51	SB5102	6.0 – 8.0	05/07/97							0.39 J			**0.87 =**		1.6 =				1.5 =	1.4 =	5.76
P2-SB52	SB5201	4.0 – 6.0	05/07/97																		ND
P2-SB52	SB5202	6.0 – 8.0	05/07/97																		ND
P2-SB53	SB5301	0.0 – 2.0	05/06/97	0.051 J																	0.051
P2-SB53	SB5302	6.0 – 8.0	05/06/97			0.049 J															0.049
P2-SB54	SB5401	4.0 – 6.0	05/07/97																		ND
P2-SB54	SB5402	6.0 – 8.0	05/07/97																		ND
CAP-Part B Investigation – 1999																					
Former Pumphouse #2 Tank Pit Area																					
P2-MW41	PH2WB4101	10.0 – 12.0	09/30/99				0.25 =	0.36 =	0.19 =	0.28 =	0.19 =	0.13 =	0.38 =	0.23 J	1.3 =				1.0 =	1.3 =	5.61
P2-MW41	PH2WB4102	26.0 – 28.0	09/30/99																		ND
GUST Soil Threshold Levels (Table B, Column 1)				NRC	NRC	NRC	NRC	0.660	0.660	0.660	NRC	0.660	0.660	0.660	NRC	NRC	0.660	NRC	NRC	NRC	NRC
Alternate Threshold Limits (Appendix VI)				—	—	—	—	—	6.8	27.0	—	—	10.0	—	—	—	0.660	—	—	—	—

NOTES:

Bold values exceed STLs and italics values exceed ATLs

ND Not detected; refer to Appendix V, Tables V-A and V-C, for complete list of PAH results.

BGS Below ground surface

N/A Not applicable

PAH Polynuclear aromatic hydrocarbon

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

Table 3a. CAP-Part A/B – Groundwater Analytical Results
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Sample ID	Screened Interval (ft BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)
CAP-Part A Investigation – 1996								
Former Pumphouse #2 Tank Pit Area								
P2-MW04	HT4-MW04	6.0 – 16.0	12/09/96	1 U	1 U	1 U	2 U	ND
P2-MW05	HT4-MW05	7.5 – 17.5	12/09/96	***2400*** =	280 =	840 =	870 =	4390
P2-MW06	HT4-MW06	7.5 – 17.5	12/09/96	***740*** =	2300 =	770 =	2900 =	6710
Former Fuel Pit 2E								
P2-MW10	HT4-MW10	5.0 – 15.0	12/10/96	**260 J**	25 U	580 J	720 J	1560
CAP-Part B Investigation – 1997								
Former Pumphouse #2 Tank Pit Area								
P2-MW28	MW2801	8.0 – 18.0	05/29/97	40 J	43 J	440 =	2600 =	3123
P2-MW29	MW2901	9.0 – 19.0	05/29/97	***1100*** =	1500 =	770 =	3100 =	6470
P2-MW30	MW3001	9.0 – 19.0	05/29/97	24 J	500 =	240 =	1400 =	2164
P2-MW31	MW3101	8.0 – 18.0	05/29/97	61 =	1100 =	970 =	4100 =	6231
P2-MW32	MW3201	30.0 – 35.0	05/29/97	2.6 =	1 U	2.2 =	2.8 =	7.6
Former Fuel Pit 2E								
P2-MW25	MW2501	5.0 – 15.0	05/29/97	60 =	11 J	330 =	1100 =	1490
P2-MW26	MW2601	5.0 – 15.0	05/29/97	1 U	1 U	1 U	2 U	ND
CAP-Part B Investigation – 1999								
Former Pumphouse #2 Tank Pit Area								
P2-MW04	PH2MW0402	6.0 – 16.0	11/02/99	14 =	1 U	0.95 =	2 U	14.95
P2-MW05	PH2MW0502	7.5 – 17.5	11/02/99	***2700*** =	1100 =	1200 =	1670 =	6430
P2-MW06	PH2MW0602	5.0 – 15.0	11/02/99	***700*** =	2100 =	1200 =	5930 =	9200
P2-MW28	PH2MW2802	8.0 – 18.0	11/02/99	25 U	32 =	450 =	1450 =	1712
P2-MW30	PH2MW3002	9.0 – 19.0	11/02/99	10 U	94 =	210 =	640 =	784
P2-MW31	PH2MW3102	8.0 – 18.0	11/02/99	34 =	77 =	360 =	1660 =	1881
P2-MW32	PH2MW3202	30.0 – 35.0	11/02/99	1 U	1 U	1 U	2 U	ND
P2-MW37	PH2MW3701	8.1 – 18.1	11/02/99	1 U	1 U	1 U	2 U	ND
P2-MW38	PH2MW3801	10.9 – 20.9	11/02/99	1 U	1 U	1 U	2 U	ND
P2-MW39	PH1MW3901	9.1 – 19.1	11/02/99	1 U	1 U	1 U	2 U	ND
P2-MW41	PH2MW4101	5.3 – 25.3	11/02/99	***660*** =	750 =	190 =	840 =	2170
P2-MW43	PH2MW4301	5.6 – 15.6	11/02/99	1 U	1 U	1 U	2 U	ND
CAP-Part B Investigation – 2000								
Former Pumphouse #2 Tank Pit Area								
P2-MW29A	AM2912	7.9 – 17.9	2/18/00	***572*** =	296 =	391 =	1280	
In-Stream Water Quality Standards (GA Chapter 391-3-6)				71.28	200,000	28,718	NRC	NRC
Alternate Concentration Limits (Appendix VI)				469	1,316,000	—	—	—

NOTES:

Bold values exceed IWQS.
Italics values exceed ACLs
BGS Below ground surface
BTEX Benzene, toluene, ethylbenzene, and xylene
ND Not detected
NRC No regulatory criteria

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.
UJ Indicates that the compound was not detected above an approximated sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
= Indicates that the compound was detected at the concentration reported.

Table 3b. CAP-Part A/B – Groundwater Analytical Results
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Sample ID	Screened Interval (ft BGS)	Date Sampled	Detected PAH Compounds (µg/L)																		Total PAHs (µg/L)
				1-methylnaphthalene	2-methylnaphthalene	acenaphthene	acenaphthylene	anthracene	benzo (a) anthracene	benzo(a) pyrene	benzo (b) fluoranthene	benzo(g,h,i) perylene	benzo(k) fluoranthene	chrysene	fluoranthene	fluorene	indeno(1,2,3-cd) pyrene	naphthalene	phenanthrene	pyrene	
CAP-Part A Investigation – 1996																						
Former Pumphouse #2 Tank Pit Area																						
P2-MW04	HT4-MW04	6.0 – 16.0	12/09/96																			ND
P2-MW05	HT4-MW05	7.5 – 17.5	12/09/96				1.2 =	1.5 =							2.1 J	3.2 J		15 =	8 J	1.6 J		32.6
P2-MW06	HT4-MW06	7.5 – 17.5	12/09/96															79 =				79
Former Fuel Pit 2E																						
P2-MW10	HT4-MW10	5.0 – 15.0	12/10/96				2.3 =											9.8 =	0.36 J			12.46
CAP-Part B Investigation – 1997																						
Former Pumphouse #2 Tank Pit Area																						
P2-MW28	MW2801	8.0 – 18.0	05/29/97		3.6 =			0.64 J	0.014 J		0.05 J			0.023 J	1.4 J	0.93 J		6 =	3.4 J			16.057
P2-MW29	MW2901	9.0 – 19.0	05/29/97		2.6 =			0.57 J		0.022 J	0.054 J			**0.05 =**	1.7 J	1.6 J		24 =	4 J			34.596
P2-MW30	MW3001	9.0 – 19.0	05/29/97					0.91 J	**0.16 =**					**0.18 =**	5.9 J	1.7 J		8.2 =	7.6 J	2.9 =		27.55
P2-MW31	MW3101	8.0 – 18.0	05/29/97	10 =		1.9 J		1.2 J	**0.1 J**					**0.12 J**	3.7 J	2.4 J		9.2 =	7.5 J	1.9 J		38.02
P2-MW32	MW3201	30.0 – 35.0	05/29/97					0.015 J											0.16 J	0.12 J		0.295
Former Fuel Pit 2E																						
P2-MW25	MW2501	5.0 – 15.0	05/29/97	0.56 J	2.6 =									0.011 J	0.093 J	0.25 J		8 =	0.16 J			11.674
P2-MW26	MW2601	5.0 – 15.0	05/29/97								0.038 J			0.0072J								0.0452
In-Stream Water Quality Standards (Chapter 391-3-6)				NRC	NRC	NRC	NRC	110,000	0.0311	0.0311	NRC	NRC	0.0311	0.0311	370	14,000	0.0311	NRC	NRC	11,000		NRC
Alternate Concentration Limits (Appendix VI)				—	—	—	—	—	2.0	2.0	—	—	—	2.0	—	—	—	428	—	—		—

NOTES:

Bold values exceed IWQS.

BGS Below ground surface
NRC No regulatory criteria
ND Not detected
PAH Polynuclear aromatic hydrocarbons

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.
UJ Indicates that the compound was not detected above an approximated sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
= Indicates that the compound was detected at the concentration reported.

Table 3b. CAP-Part A/B – Groundwater Analytical Results (continued)
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Sample ID	Screened Interval (ft BGS)	Date Sampled	Detected PAH Compounds (µg/L)																	Total PAHs (µg/L)
				1-methy lnaphthalene	2-methy lnaphthalene	acenaphthene	acenaphthylene	anthracene	benzo (a) anthracene	benzo(a) pyrene	benzo (b) fluoranthene	benzo(g,h,i) perylene	benzo(k) fluoranthene	chrysene	fluoranthene	fluorene	indeno(1,2,3-cd)	naphthalene	phenanthrene	pyrene	
CAP-Part B Investigation – 1999																					
Former Pumphouse #2 Tank Pit Area																					
P2-MW04	PH2MW0402	6.0 – 16.0	11/02/99																		NA
P2-MW05	PH2MW0502	7.5 – 17.5	11/02/99																		NA
P2-MW06	PH2MW0602	5.0 – 15.0	11/02/99																		NA
P2-MW28	PH2MW2802	8.0 – 18.0	11/02/99																		NA
P2-MW30	PH2MW3002	9.0 – 19.0	11/02/99																		NA
P2-MW31	PH2MW3102	8.0 – 18.0	11/02/99																		NA
P2-MW32	PH2MW3202	30.0 – 35.0	11/02/99																		NA
P2-MW37	PH2MW3701	8.1 – 18.1	11/02/99																		ND
P2-MW38	PH2MW3801	10.9 – 20.9	11/02/99																		ND
P2-MW39	PH1MW3901	9.1 – 19.1	11/02/99																		ND
P2-MW41	PH2MW4101	5.3 – 25.3	11/02/99	1.4 =	3.8 =	6.1 =										0.5 =		22 =	1.5 =		35.3
P2-MW43	PH2MW4301	5.6 – 15.6	11/02/99																		ND
CAP-Part B Investigation – 2000																					
Former Pumphouse #2 Tank Pit Area																					
P2-M229	AM2912		2/18/00																		NA
In-Stream Water Quality Standards (Chapter 391-3-6)				NRC	NRC	NRC	NRC	110,000	0.0311	0.0311	NRC	NRC	0.0311	0.0311	370	14,000	0.0311	NRC	NRC	11,000	NRC
Alternate Concentration Limits (Appendix VI)				—	—	—	—	—	2.0	2.0	—	—	—	2.0	—	—	—	428	—	—	—

NOTES:

Bold values exceed IWQS.

BGS Below ground surface
NRC No regulatory criteria
ND Not detected
PAH Polynuclear aromatic hydrocarbons

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.
UJ Indicates that the compound was not detected above an approximated sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
= Indicates that the compound was detected at the concentration reported.

Table 4. CAP-Part B – Free Product Monitoring

Point	8/4/1999			8/19/1999			9/1/1999			9/23/1999			10/8/1999		
	Depth to Product (ft)	Depth to Water (ft)	Product Thickness	Depth to Product (ft)	Depth to Water (ft)	Product Thickness	Depth to Product (ft)	Depth to Water (ft)	Product Thickness	Depth to Product (ft)	Depth to Water (ft)	Product Thickness	Depth to Product (ft)	Depth to Water (ft)	Product Thickness
PD-1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-3		10.73	0	11.08	11.09	0.01		11.20	0		11.33	0		10.54	0
PD-4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-10		11.13	0	11.46	11.47	0	11.57	11.65	0.08	11.68	11.84	0.16	10.88	11.21	0
PD-11		10.77	0	11.08	11.10	0	11.20	11.21	0.01	11.32	11.33	0.01	10.55	10.56	0
PD-12		10.98	0		11.30	0		11.42	0		11.55	0		10.76	0
PD-13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-15		10.82	0		11.07	0		11.19	0		11.31	0		10.56	0
PD-16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-20		11.12	0		11.44	0		11.56	0		11.68	0		10.92	0
PD-21		10.95	0		11.23	0		11.34	0		11.45	0		10.71	0
PD-22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-25		10.95	0		11.24	0		11.35	0		11.47	0		10.75	0
PD-26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PD-31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
P2-MW27	10.67	10.69	0.02	11.46	11.47	0.01	11.15	11.17	0.02	11.28	11.29	0.01		10.52	0
P2-MW41	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm

— Product delineation point did not exist.
nm Not measured.

Table 4. CAP-Part B – Free Product Monitoring (continued)

Point	10/28/1999			12/2/1999			12/15/1999			2/25/2000			3/3/2000		
	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
PD-1	—	—	—	—	—	—	—	—	—	—	—	—	—	11.20	0.00
PD-2	—	—	—	—	—	—		13.15	0	11.49	11.50	0.01		11.44	0.00
PD-3		11.02	0		11.50	0		11.58	0	11.25	13.31	2.06	11.11	13.47	2.36
PD-4	—	—	—		11.20	0		11.31	0		11.36	0		11.31	0.00
PD-5	—	—	—	—	—	—	—	—	—	11.45	11.52	0.07	11.19	12.32	1.13
PD-6	—	—	—	—	—	—	—	—	—		11.28	0		11.27	0.00
PD-7	—	—	—	—	—	—	—	—	—		11.36	0	11.21	11.52	0.31
PD-8	—	—	—	11.61	11.63	0.02	11.70	11.72	0.02	11.24	13.76	2.52	11.25	13.70	2.46
PD-9	—	—	—		11.51	0		11.61	0	11.12	13.59	2.47	11.09	13.54	2.45
PD-10	11.34	11.72	0.38	11.82	12.12	0.30	11.90	12.22	0.32	11.56	14.17	2.61	11.51	14.02	2.54
PD-11	11.01	11.02	0.01	11.47	11.48	0.01		11.56	0	11.03	13.84	2.81	11.00	13.78	2.78
PD-12	—	—	—		11.70	0		11.81	0	11.30	13.99	2.69	11.26	11.88	0.62
PD-13	—	—	—		11.62	0		11.71	0	11.22	13.73	2.51	11.21	13.62	2.41
PD-14	—	—	—		11.39	0		11.47	0	11.52	11.65	0.13	11.46	11.70	0.24
PD-15		11.00	0	11.45	11.46	0.01	11.53	11.54	0.01	10.99	13.71	2.72	10.96	13.69	2.73
PD-16	—	—	—	—	—	—	11.45	11.52	0.07		11.59	0	10.91	13.70	2.79
PD-17	—	—	—	—	—	—	—	—	—		11.58	0	11.51	11.61	0.10
PD-18	—	—	—	—	—	—	—	—	—		11.88	0		11.84	0.00
PD-19	—	—	—	—	—	—	—	—	—		11.65	0		11.61	0.00
PD-20		11.37	0		11.83	0		11.92	0	11.98	12.08	0.10	11.95	12.26	0.31
PD-21	11.15	11.16	0.01	11.59	11.60	0.01	11.67	11.68	0.01	11.74	11.89	0.15	11.68	11.90	0.22
PD-22	—	—	—	—	—	—		13.77	0	11.80	12.21	0.41	11.72	12.38	0.66
PD-23	—	—	—	—	—	—		13.79	0		11.87	0		11.84	0.00
PD-24	—	—	—	—	—	—					12.21	0		12.18	0.00
PD-25		11.17	0		11.59	0		11.68	0	11.75	11.81	0.06	11.69	11.85	0.16
PD-26	—	—	—	—	—	—	—	—	—	—	—	—	11.19	13.73	2.54
PD-27	—	—	—	—	—	—	—	—	—	—	—	—	10.69	13.06	2.37
PD-28	—	—	—	—	—	—	—	—	—	—	—	—		11.52	0.00
PD-29	—	—	—	—	—	—	—	—	—	—	—	—	11.52	11.88	0.36
PD-30	—	—	—	—	—	—	—	—	—	—	—	—		11.71	0.00
PD-31	—	—	—	—	—	—	—	—	—	—	—	—	10.98	13.46	2.48
P2-MW27		10.98	0	11.41	11.42	0.01	11.50	11.51	0.01	11.26	12.54	1.28	NR	NR	NR
P2-MW41		10.74	0		10.81	0	nm	nm	nm	10.82	11.57	0.75	NR	NR	NR

— Product delineation point did not exist.
nm Not measured.
NR Not recorded, absorbent sock located in well.

Table 4. CAP-Part B – Free Product Monitoring (continued)

Point	3/22/00			03/31/2000			04/12/2000		
	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
PD-1		10.59	0	sheen	10.46	sheen		10.71	0
PD-2	10.89	10.91	0.02	10.66	11.45	0.79	10.84	11.75	0.91
PD-3	10.71	12.57	1.86	10.67	12.00	1.33	10.92	11.99	1.07
PD-4	10.81	10.84	0.03	10.49	11.29	0.80	10.71	11.53	0.82
PD-5	10.62	12.10	1.48	10.57	11.60	1.03	10.76	11.82	1.06
PD-6	10.57	11.61	1.04	10.55	10.99	0.44	10.74	11.42	0.68
PD-7	10.51	11.85	1.34	10.49	11.39	0.90	10.61	11.78	1.17
PD-8	11.01	12.12	1.11	10.95	11.61	0.66	11.10	11.95	0.85
PD-9	10.83	12.18	1.35	10.81	11.63	0.82	11.01	11.93	0.92
PD-10	11.14	12.69	1.55	11.11	12.11	1.00	11.35	12.36	1.01
PD-11	10.66	12.69	2.03	10.64	12.11	1.47	10.91	12.11	1.20
PD-12	10.99	12.38	1.39	10.98	12.11	1.13	11.14	12.21	1.07
PD-13	11.04	12.03	0.99	10.92	11.68	0.76	11.09	12.00	0.91
PD-14	10.98	11.18	0.20	10.62	11.59	0.97	10.78	11.95	1.17
PD-15	10.61	12.72	2.11	10.59	12.13	1.54	10.83	12.19	1.36
PD-16	10.71	12.39	1.68	10.63	11.96	1.33	10.79	12.22	1.43
PD-17	10.66	12.35	1.69	10.61	11.96	1.35	10.80	12.22	1.42
PD-18	11.19	12.00	0.81	10.86	12.38	1.52	11.04	12.56	1.52
PD-19	11.02	11.58	0.56	10.67	12.02	1.35	10.83	12.35	1.52
PD-20	11.34	11.93	0.59	11.17	11.75	0.58	11.42	11.85	0.43
PD-21	11.18	11.52	0.34	10.98	11.34	0.36	11.21	11.64	0.43
PD-22	10.98	12.39	1.41	10.94	11.94	1.00	11.11	12.35	1.24
PD-23	11.31	11.71	0.40	10.97	11.06	0.09	11.11	12.45	1.34
PD-24	11.61	11.86	0.25	11.20	12.61	1.41	11.30	13.04	1.74
PD-25	11.08	11.91	0.83	10.93	11.68	0.75	11.12	11.90	0.78
PD-26	10.91	12.22	1.31	10.88	11.70	0.82	11.08	12.06	0.98
PD-27	10.37	11.75	1.38	10.32	11.37	1.05	10.50	11.76	1.26
PD-28	10.67	11.76	1.09	10.57	11.43	0.86	10.78	11.94	1.16
PD-29	10.82	11.69	0.87	10.71	11.39	0.68	10.84	11.90	1.06
PD-30	10.93	12.08	1.15	10.92	11.72	0.80	11.02	12.18	1.16
PD-31	10.85	11.78	0.93	10.74	11.51	0.77	10.85	11.11	0.26
PD-32	—	—	—		10.29	0		10.53	0
PD-33	—	—	—		10.80	0		11.04	0
PD-34	—	—	—		10.93	0		11.17	0
PD-35	—	—	—		11.02	0		11.24	0
PD-36	—	—	—		11.07	0		11.28	0
PD-37	—	—	—		10.61	0		10.81	0
PD-38	—	—	—		10.12	0		10.33	0
PD-39	—	—	—		10.28	0		10.50	0
PD-40	—	—	—		10.59	0		10.83	0
PD-41	—	—	—		10.77	0		11.05	0
PD-42	—	—	—		10.91	0		11.17	0
PD-43	—	—	—		10.21	0		10.44	0
PD-44	—	—	—		10.11	0		10.31	0
PD-45	—	—	—		10.02	0		10.15	0
PD-46	—	—	—		9.86	0		10.10	0
PD-47	—	—	—		9.94	0		10.16	0
PD-48	—	—	—	—	—	—		11.49	0
PD-49	—	—	—	—	—	—		11.69	0
PD-50	—	—	—	—	—	—		11.37	0
PD-51	—	—	—	—	—	—		10.99	0
PD-52	—	—	—	—	—	—		10.80	0
P2-MW27	NR	NR	NR	NR	NR	NR	NR	NR	NR
P2-MW41	NR	NR	NR	NR	NR	NR	NR	NR	NR

— Product delineation point did not exist.
NR Not recorded, absorbent sock located in well

Table 5. CAP-Part A/B – Surface Water Analytical Results

Sample Location	Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)	Total PAH (µg/L)
CAP-Part A Investigation – 1996								
P2-SWE03	HT4-SW03	12/10/96	3.5 J	7.4 J	2.9 J	14 =	27.8	ND
P2-SWE04	HT4-SW04	12/10/96	1 U	1 U	1 U	2 U	ND	ND
P2-SWE05	HT4-SW05	12/10/96	1 U	1 U	1 U	2 U	ND	ND
P2-SWE06	HT4-SW06	12/10/96	2 J	1.4 J	1 U	7.5 J	10.9	ND
CAP-Part B Investigation – 1999								
P2-SW01	PH2-SW1	2/17/99	1 U	1 U	1 U	2 U	ND	ND
P2-SW02	PH2-SW2	2/17/99	2.2 =	1 U	1.6 =	1.4 =	5.2	ND
P2-SW03	PH2-SW3	2/17/99	1 U	2 =	1 U	4.1 =	6.1	ND
P2-SW04	PH2-SWE04	2/17/99	1 U	1 U	1 U	3.1 =	3.1	ND
In-Stream Water Quality Standards (Chapter 391-3-6)			71.28	200,000	28,718	NRC	NRC	NRC

NOTES:

BGS	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and xylene
NA	Not analyzed
ND	Not detected
NRC	No regulatory criteria
PAH	Polynuclear aromatic hydrocarbons

Laboratory Qualifiers

U	Indicates that the compound was not detected above the reported sample quantitation limit.
UJ	Indicates that the compound was not detected above an approximated sample quantitation limit.
J	Indicates that the value for the compound was an estimated value.
=	Indicates that the compound was detected at the concentration reported.

Table 6. CAP-Part A/B – Sediment Analytical Results

Sample Location	Sample ID	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH-DRO (mg/kg)	TPH-GRO (mg/kg)	Total PAH (mg/kg)
CAP-Part A Investigation – 1996										
P2-SWE03	HT4-SE03	12/10/96	0.0078 U	0.0078 U	0.0078 U	0.0078 U	ND	16 U	0.28 U	23.3
P2-SWE04	HT4-SE04	12/10/96	0.0077 U	0.0077 U	0.0077 U	0.0077 U	ND	15 U	0.28 U	ND
P2-SWE05	HT4-SE05	12/10/96	0.0078 U	0.0078 U	0.0078 U	0.0078 U	ND	16 U	0.28 U	ND
P2-SWE06	HT4-SE06	12/10/96	0.0068 U	0.0068 U	0.0068 U	0.0068 U	ND	32 =	0.25 U	110.7
CAP-Part B Investigation – 1999										
			No sediment samples were collected as part of the CAP-Part B investigation.							
GUST Soil Threshold Levels (Table B, Column 1)			0.017	115	18	700	NRC	NRC	NRC	NRC

NOTES:

BGS	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and xylene
ND	Not detected
NRC	No regulatory criteria
PAH	Polynuclear aromatic hydrocarbons

Laboratory Qualifiers

U	Indicates that the compound was not detected above the reported sample quantitation limit.
UJ	Indicates that the compound was not detected above an approximated sample quantitation limit.
J	Indicates that the value for the compound was an estimated value.
=	Indicates that the compound was detected at the concentration reported.

Table 7. CAP-Part A/B – Geotechnical Results

Boring ID	Depth Interval (ft BGS)	Grain size analysis - % Fines	Grain size analysis - % Sand	Grain size analysis - % Gravel	Volumetric Moisture Content	Porosity	Specific Gravity	Bulk Density (lb/ft^3)	Permeability (cm/sec)
P2-MW25	13.0 – 15.0	1.4	98.6	0	—	—	—	—	—
P2-MW26	6.0 – 8.0	1.8	98.2	0	0.409	0.43	2.64	116.9	7.3×10^{-3}
P2-MW26	13.0 – 15.0	2.1	97.9	0	—	—	—	—	—
P2-MW27	7.0 – 9.0	2.8	97.2	0	0.535	0.41	2.59	95.5	5.1×10^{-3}
P2-MW27	13.0 – 15.0	1.7	98.3	0	—	—	—	—	—
P2-MW28	13.0 – 15.0	1.1	98.9	0	—	—	—	—	—
P2-MW29	13.0 – 15.0	1.5	98.5	0	—	—	—	—	—
P2-MW30	18.0 – 20.0	2.4	97.6	0	—	—	—	—	—
P2-MW31	13.0 – 15.0	1.6	98.4	0	—	—	—	—	—
P2-MW31	33.0 – 35.0	16.1	83.9	0	—	—	—	—	—
P2-SB46	8.0 – 10.0	2.2	97.8	0	0.395	0.39	2.59	105.5	5.1×10^{-3}
P2-SB52	5.0 – 7.0	3.5	96.5	0	0.413	0.41	2.61	102.9	7.1×10^{-3}

NP nonplastic

Table 8. CAP-Part A/B – Well Construction Details

Boring/Well Number	Date Installed	Boring Depth (ft BGS)	Screened Interval (ft BGS)	Type of Completion	Coordinates[1]		Ground Surface Elevation	Top of Casing Elevation
					Northing	Easting		
CAP-Part A Investigation – 1996								
P2-MW04	11/19/96	17.0	6.0 – 16.0	2″ PVC	733964.76	818922.64	38.3	38.09
P2-MW05	11/19/96	18.0	7.5 – 17.5	2″ PVC	733822.64	818830.10	38.6	38.26
P2-MW06	11/19/96	18.0	7.5 – 17.5	2″ PVC	733751.69	818888.66	38.4	38.18
P2-MW10	11/19/96	16.0	5.0 – 15.0	2″ PVC	733995.87	819586.24	39.5	39.40
CAP-Part B Investigation – 1997, 1998, 2000								
P2-MW25	5/8/97	15.5	5.0 – 15.0	2″ PVC	733960.72	819575.71	39.4	39.19
P2-MW26	5/8/97	15.5	5.0 – 15.0	2″ PVC	733795.00	819532.08	38.6	38.48
P2-MW27	5/9/97	18.0	7.5 – 17.5	2″ PVC	733850.55	818882.04	38.9	38.69
P2-MW28	5/9/97	18.5	8.0 – 18.0	2″ PVC	733793.32	818955.70	39.4	39.28
P2-MW29	5/8/97	20.0	9.0 – 19.0	2″ PVC	733698.95	818896.35	40.5	40.24
P2-MW30	5/9/97	20.0	9.0 – 19.0	2″ PVC	733614.02	818678.24	39.5	39.30
P2-MW31	5/9/97	19.0	8.0 – 18.0	2″ PVC	733771.83	818706.60	37.0	37.16
P2-MW32	5/13/97	35.0	30.0 – 35.0	2″ PVC	733708.22	818904.59	40.3	40.13
P2-MW37	9/28/99	19.0	8.1 – 18.1	2″ PVC	733695.96	819048.31	42.5	42.22
P2-MW38	9/28/99	21.0	10.9 – 20.9	2″ PVC	733536.47	818898.30	43.0	42.81
P2-MW39	9/28/99	20.0	9.1 – 19.1	2″ PVC	733513.63	818612.68	40.8	40.63
P2-MW41	9/30/99	50.0	5.3 – 25.3	4″ PVC	733867.94	818865.58	38.6	38.17
P2-MW43	9/27/99	16.0	5.6 – 15.6	2″ PVC	733921.70	819270.98	38.6	38.42
P2-MW29A	2/18/00	18.0	7.9 – 17.9	¾″ PVC	733704.20	818893.20	40.4	40.02

NOTES:

[1] Survey coordinates were provided by Metcalf & Eddy. No reference datum was provided, however, the datum is assumed to be NAD27 and NGVD29. Survey coordinates for P2-MW29A are provided in NAD27 and NGVD29.

Table 9. CAP-Part A/B – Groundwater Elevations

Well Number	Date Measured	Ground Surface Elevation (ft MSL)	Top of Casing Elevation (ft MSL)	Screened Interval (ft BGS)	Depth of Free Product (ft BTOC)	Water Depth (ft BTOC)	Product Thickness (ft)	Groundwater Elevation. (ft MSL)
CAP-Part A Investigation – 1996								
P2-MW04	12/9/96	38.3	38.09	6.0 – 16.0	ND	10.24	0	27.85
P2-MW05	12/9/96	38.6	38.26	7.5 – 17.5	ND	11.27	0	26.99
P2-MW06	12/9/96	38.4	38.18	7.5 – 17.5	ND	11.39	0	26.79
P2-MW10	12/9/96	39.5	39.40	5.0 – 15.0	ND	7.86	0	31.54
CAP-Part B Investigation – 1997								
P2-MW04	5/29/97	38.3	38.09	6.0 – 16.0	ND	10.32	0	27.77
P2-MW05	5/29/97	38.6	38.26	7.5 – 17.5	ND	11.33	0	26.93
P2-MW06	5/29/97	38.4	38.18	7.5 – 17.5	ND	11.41	0	26.77
P2-MW10	5/29/97	39.5	39.40	5.0 – 15.0	ND	8.36	0	31.04
P2-MW25	5/29/97	39.4	39.19	5.0 – 15.0	ND	8.04	0	31.15
P2-MW26	5/29/97	38.6	38.48	5.0 – 15.0	ND	7.30	0	31.18
P2-MW27	5/29/97	38.9	38.69	7.5 – 17.5	10.45	11.42	0.97	27.27
P2-MW28	5/29/97	39.4	39.28	8.0 – 18.0	ND	12.30	0	26.98
P2-MW29	5/29/97	40.5	40.24	9.0 – 19.0	ND	13.68	0	26.56
P2-MW30	5/29/97	39.5	39.30	9.0 – 19.0	ND	13.28	0	26.02
P2-MW31	5/29/97	37.0	37.16	8.0 – 18.0	ND	10.69	0	26.47
P2-MW32	5/29/97	40.3	40.13	30.0 – 35.0	ND	12.77	0	27.36
CAP-Part B Investigation – 1999								
P2-MW04	11/1/99	38.3	38.09	6.0 – 16.0	ND	9.75	0	28.34
P2-MW05	11/1/99	38.6	38.26	7.5 – 17.5	ND	10.85	0	27.41
P2-MW06	11/1/99	38.4	38.18	7.5 – 17.5	ND	11.03	0	27.15
P2-MW10	11/1/99	39.5	39.40	5.0 – 15.0	ND	7.12	0	32.28
P2-MW25	11/1/99	39.4	39.19	5.0 – 15.0	ND	6.87	0	32.32
P2-MW26	11/1/99	38.6	38.48	5.0 – 15.0	ND	6.14	0	32.34
P2-MW27	11/1/99	38.9	38.69	7.5 – 17.5	ND	11.07	0	27.62
P2-MW28	11/1/99	39.4	39.28	8.0 – 18.0	ND	11.95	0	27.33
P2-MW29	11/1/99	40.5	40.24	9.0 – 19.0		destroyed		
P2-MW30	11/1/99	39.5	39.30	9.0 – 19.0	ND	13.06	0	26.24
P2-MW31	11/1/99	37.0	37.16	8.0 – 18.0	ND	10.25	0	26.91
P2-MW32	11/1/99	40.3	40.13	30.0 – 35.0	ND	12.41	0	27.72
P2-MW37	11/1/99	42.5	42.22	8.1 – 18.1	ND	14.18	0	28.04
P2-MW38	11/1/99	43.0	42.81	10.9 – 20.9	ND	14.80	0	28.01
P2-MW39	11/1/99	40.8	40.63	9.1 – 19.1	ND	13.59	0	27.04
P2-MW41	11/1/99	38.6	38.17	5.3 – 25.3	ND	10.45	0	27.72
P2-MW43	11/1/99	38.6	38.42	5.6 – 15.6	ND	8.12	0	30.30

Table 9. CAP-Part A/B – Groundwater Elevations (continued)

Well Number	Date Measured	Ground Surface Elevation (ft MSL)	Top of Casing Elevation (ft MSL)	Screened Interval (ft BGS)	Depth of Free Product (ft BTOC)	Water Depth (ft BTOC)	Product Thickness (ft)	Corrected Groundwater Elevation. (ft MSL)
CAP-Part B Investigation – 2000								
P2-MW04	2/24/00	38.3	38.09	6.0 – 16.0	ND	10.42	0	27.67
P2-MW05	2/24/00	38.6	38.26	7.5 – 17.5	ND	11.36	0	26.90
P2-MW06	2/24/00	38.4	38.18	7.5 – 17.5	ND	11.40	0	26.78
P2-MW27	2/24/00	38.9	38.69	7.5 – 17.5	11.26	12.54	1.28	26.30
P2-MW28	2/24/00	39.4	39.28	8.0 – 18.0	ND	12.30	0	26.98
P2-MW29A	2/24/00	40.4	40.02	7.9 – 17.9	ND	13.44	0	26.58
P2-MW30	2/24/00	39.5	39.30	9.0 – 19.0	ND	13.32	0	25.98
P2-MW31	2/24/00	37.0	37.16	8.0 – 18.0	ND	10.71	0	26.45
P2-MW32	2/24/00	40.3	40.13	30.0 – 35.0	ND	12.88	0	27.25
P2-MW37	2/24/00	42.5	42.22	8.1 – 18.1	ND	14.72	0	27.50
P2-MW38	2/24/00	43.0	42.81	10.9 – 20.9	ND	15.48	0	27.33
P2-MW39	2/24/00	40.8	40.63	9.1 – 19.1	ND	14.03	0	26.60
P2-MW41	2/24/00	38.6	38.17	5.3 – 25.3	10.82	11.57	0.75	26.51
P2-MW43	2/24/00	38.6	38.42	5.6 – 15.6	ND	9.19	0	29.23

Table 10. CAP-Part A – Soil Data Risk-based Screening Results

Station:	Screening Levels			P2-MW04	P2-MW04	P2-MW05	P2-MW05	P2-MW06	P2-MW06
Sample ID:	GUST Soil	Risk-based		WB0401	WB0402	WB0501	WB0502	WB0601	WB0602
Sample Interval (ft BGS):	Threshold	Screening	Leaching to	2.0 - 4.0	13.0 - 15.0	8.0 - 10.0	13.0 - 15.0	9.0 - 11.0	14.0 - 16.0
Collection Date:	Levels[a]	Level[b]	Groundwater[c]	11/19/1996	11/19/1996	11/19/1996	11/19/1996	11/19/1996	11/19/1996
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS									
Benzene	0.017	197.4	0.03	0.0053 U	0.0014 U	**0.021 U**	0.0015 U	**0.054 U**	**0.28 J**
Toluene	115	408,800	12	0.0053 U	0.019 U	0.28 U	0.02 U	0.72 J	0.82 =
Ethylbenzene	18	204,400	13	0.0053 U	0.018 U	1 J	0.019 U	7.2 J	0.3 U
Xylenes	700	1,000,000	190	0.0053 U	0.0066 U	1.6 J	0.0069 U	13 J	0.57 J
POLYNUCLEAR AROMATIC HYDROCARBONS									
1-Methylnaphthalene	N/A[d]	—	—	0.70 U	0.40 U	0.36 U	0.41 U	0.37 U	0.41 U
2-Methlynaphthalene	N/A[d]	—	—	0.70 U	0.40 U	0.36 U	0.41 U	0.37 U	0.41 U
Acenaphthene	N/A[d]	12,264	570	0.70 U	0.40 U	0.36 U	0.41 U	0.37 U	0.41 U
Acenaphthylene	N/A[d]	61,320	4,200	0.70 U	0.40 U	0.36 U	0.41 U	0.37 U	0.41 U
Anthracene	N/A[d]	613,200	12,000	[f]	[f]	[f]	[f]	[f]	[f]
Benoz(a)anthracene	0.660	7.84	2	[g]	[g]	[g]	[g]	[g]	[g]
Benzo(a)pyrene	0.660	0.784	8	**0.70 U**	0.40 U	0.36 U	0.41 U	0.37 U	0.53 =
Benzo(b)fluoranthene	0.660	7.84	5	**0.70 U**	0.40 U	0.36 U	0.41 U	0.66 =	0.41 U
Benzo(g,h,i)perylene	N/A[d]	—	—	0.70 U	0.40 U	0.36 U	0.41 U	0.37 U	0.41 U
Benzo(k)fluoranthene	0.660	78.4	49	[h]	[h]	[h]	[h]	[h]	[h]
Chrysene	0.660	784	160	**0.70 U**	0.40 U	0.44 =	0.57 =	**1.5 =**	**1.3 =**
Dibenzo(a,h)anthracene	0.660	0.784	2	[i]	[i]	[i]	[i]	[i]	[i]
Fluoranthene	N/A[d]	81,760	4,300	0.70 U	0.40 U	1.2 =	0.41 U	2.5 =	0.41 U
Fluorene	N/A[d]	81,760	560	0.70 U	0.40 U	0.36 U	0.41 U	0.37 U	0.41 U
Indeno(1,2,3-cd)pyrene	0.660	7.840	14	**0.70 U**	0.40 U	0.36 U	0.41 U	0.37 U	0.41 U
Naphthalene	N/A[d]	40,880	84	0.70 U	0.40 U	0.36 U	0.41 U	0.37 U	0.41 U
Phenanthrene[e]	N/A[d]	61,320	4,200	0.70 U	0.40 U	1.5 =	0.41 U	2.3 =	0.41 U
Pyrene	N/A[d]	61,320	4200	0.70 U	0.40 U	1.2 =	0.41 U	2.5 =	0.41 U
OTHER ANALYTES									
TPH-Diesel Range Organics	N/A[d]	—	—	370 J	12 UJ	49 J	34 J	11 UJ	12 UJ
TPH-Gasoline Range Organics	N/A[d]	—	—	0.19 UJ	6.6 =	200 J	4.3 =	1600 J	56 =

[a] Average or higher groundwater pollution susceptibility area (where ≤500 feet to a surface water body).
[b] Protective of soil exposure during Industrial Land Use.
[c] Protective of groundwater ingestion. Used a dilution attenuation factor of 20.
[d] Not applicable. The screening level exceeds the expected soil concentration under free product condition.
[e] Values based on pyrene as a surrogate chemical.
[f] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene.
[g] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene.
[h] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene.
[i] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene.

Bold values indicate results exceeding Georgia UST soil threshold levels.
Italicized values indicate results exceeding risk-based screening levels.
Underlined values indicate results exceeding leaching to groundwater screening levels.

U	Indicates that the compound was not detected above the reported sample quantitation limit.
J	Indicates that the value for the compound was an estimated value.
UJ	Indicates that the sample was not detected above an approximate sample quantitation limit.
R	Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.
=	Indicates that the compound was detected at the concentration reported.

Table 10. CAP-Part A – Soil Data Risk-based Screening Results (continued)

Station:	Screening Levels			P2-MW10	P2-MW10	P2-SB09	P2-SB09	P2-SB10	P2-SB10
Sample ID:				WB1001	WB1002	SB0901	SB0902	SB1001	SB1002
Sample Interval (ft BGS):	GUST Soil Threshold Levels[a]	Risk-based Screening Level[b]	Leaching to Groundwater[c]	8.0 - 10.0	13.0 - 15.0	4.0 - 6.0	10.0 - 12.0	4.0 - 6.0	8.0 - 10.0
Collection Date:				11/20/1996	11/20/1996	11/19/1996	11/19/1996	11/19/1996	11/19/1996
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS									
Benzene	0.017	197.4	0.03	**1.6** J	0.0061 U	0.00026 U	**0.120** U	**0.020** U	**5.2** J
Toluene	115	408,800	12	0.83 J	0.0061 U	0.0035 U	110 J	0.82 J	43 J
Ethylbenzene	18	204,400	13	14 J	0.0066 =	0.0033 U	120 J	0.26 U	**120** J
Xylenes	700	1,000,000	190	49 J	0.091 =	0.0012 U	360 J	0.32 J	300 J
POLYNUCLEAR AROMATIC HYDROCARBONS									
1-Methylnaphthalene	N/A[d]	—	—	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.39 U
2-Methlynaphthalene	N/A[d]	—	—	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.39 U
Acenaphthene	N/A[d]	12,264	570	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.39 U
Acenaphthylene	N/A[d]	61,320	4,200	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.39 U
Anthracene	N/A[d]	613,200	12,000	[f]	[f]	[f]	[f]	[f]	[f]
Benoz(a)anthracene	0.660	7.84	2	[g]	[g]	[g]	[g]	[g]	[g]
Benzo(a)pyrene	0.660	0.784	8	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.39 U
Benzo(b)fluoranthene	0.660	7.84	5	0.41 U	0.41 U	0.36 U	**0.81** =	0.5 =	**1.3** =
Benzo(g,h,i)perylene	N/A[d]	—	—	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.39 U
Benzo(k)fluoranthene	0.660	78.4	49	[h]	[h]	[h]	[h]	[h]	[h]
Chrysene	0.660	784	160	0.41 U	0.41 U	0.36 U	**1.1** =	**0.74** =	**1.5** =
Dibenzo(a,h)anthracene	0.660	0.784	2	[i]	[i]	[i]	[i]	[i]	[i]
Fluoranthene	N/A[d]	81,760	4,300	0.41 U	0.41 U	0.36 U	2.4 =	1.5 =	3.3 =
Fluorene	N/A[d]	81,760	560	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.66 =
Indeno(1,2,3-cd)pyrene	0.660	7.840	14	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.39 U
Naphthalene	N/A[d]	40,880	84	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.39 U
Phenanthrene[e]	N/A[d]	61,320	4,200	0.41 U	0.41 U	0.36 U	2.1 =	0.76 =	3.1 =
Pyrene	N/A[d]	61,320	4200	0.41 U	0.41 U	0.36 U	2.0 =	1.2 =	2.6 =
OTHER ANALYTES									
TPH-Diesel Range Organics	N/A[d]	—	—	10 =	4.7 =	11 UJ	18 J	24 J	26 J
TPH-Gasoline Range Organics	N/A[d]	—	—	4700 J	0.71 J	0.2 U	43000 J	130 J	43000 J

[a] Average or higher groundwater pollution susceptibility area (where ≤500 feet to a surface water body).
[b] Protective of soil exposure during Industrial Land Use.
[c] Protective of groundwater ingestion. Used a dilution attenuation factor of 20.
[d] Not applicable. The screening level exceeds the expected soil concentration under free product condition.
[e] Values based on pyrene as a surrogate chemical.
[f] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene.
[g] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene.
[h] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene.
[i] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene.

Bold values indicate results exceeding Georgia UST soil threshold levels.
Italicized values indicate results exceeding risk-based screening levels.
Underlined values indicate results exceeding leaching to groundwater screening levels.

U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
UJ Indicates that the sample was not detected above an approximate sample quantitation limit.
R Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.
= Indicates that the compound was detected at the concentration reported.

Table 10. CAP-Part A – Soil Data Risk-based Screening Results (continued)

Station:	Screening Levels			P2-SB11	P2-SB11	P2-SB12	P2-SB12	P2-SB13	P2-SB13
Sample ID:	GUST Soil	Risk-based		SB1101	SB1102	SB1201	SB1202	SB1301	SB1302
Sample Interval (ft BGS):	Threshold	Screening	Leaching to	4.0 - 6.0	10.0 - 12.0	0.0 - 2.0	10.0 - 12.0	4.0 - 6.0	10.0 - 12.0
Collection Date:	Levels[a]	Level[b]	Groundwater[c]	11/19/1996	11/19/1996	11/19/1996	11/19/1996	11/19/1996	11/19/1996
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS									
Benzene	0.017	197.4	0.03	0.0062 U	**0.024 U**	0.0053 U	0.0062 U	0.0059 U	0.0063 U
Toluene	115	408,800	12	0.0062 U	3.1 J	0.0053 U	0.0062 U	0.0059 U	0.0063 U
Ethylbenzene	18	204,400	13	0.0062 U	1.4 J	0.0053 U	0.0062 U	0.015 =	0.0063 U
Xylenes	700	1,000,000	190	0.0062 U	7.1 J	0.0053 U	0.0078 =	0.052 =	0.0091 =
POLYNUCLEAR AROMATIC HYDROCARBONS									
1-Methylnaphthalene	N/A[d]	—	—	0.41 U	0.41 U	0.35 U	0.41 U	0.39 U	0.42 U
2-Methlynaphthalene	N/A[d]	—	—	0.41 U	0.41 U	0.35 U	0.41 U	0.39 U	0.42 U
Acenaphthene	N/A[d]	12,264	570	0.41 U	0.59 =	0.35 U	0.41 U	0.39 U	0.42 U
Acenaphthylene	N/A[d]	61,320	4,200	0.41 U	0.41 U	0.35 U	0.41 U	0.39 U	0.42 U
Anthracene	N/A[d]	613,200	12,000	[f]	[f]	[f]	[f]	[f]	[f]
Benoz(a)anthracene	0.660	7.84	2	[g]	[g]	[g]	[g]	[g]	[g]
Benzo(a)pyrene	0.660	0.784	8	0.41 U	**2.8** =	0.35 U	0.41 U	0.39 U	0.42 U
Benzo(b)fluoranthene	0.660	7.84	5	0.41 U	**3.1** =	0.35 U	0.41 U	0.39 U	0.42 U
Benzo(g,h,i)perylene	N/A[d]	—	—	0.41 U	0.8 =	0.35 U	0.41 U	0.39 U	0.42 U
Benzo(k)fluoranthene	0.660	78.4	49	[h]	[h]	[h]	[h]	[h]	[h]
Chrysene	0.660	784	160	0.41 U	**5** =	0.35 U	0.41 U	0.39 U	0.42 U
Dibenzo(a,h)anthracene	0.660	0.784	2	[i]	[i]	[i]	[i]	[i]	[i]
Fluoranthene	N/A[d]	81,760	4,300	0.41 U	5.6 =	0.35 U	0.41 U	0.39 U	0.42 U
Fluorene	N/A[d]	81,760	560	0.41 U	0.82 =	0.35 U	0.41 U	0.39 U	0.42 U
Indeno(1,2,3-cd)pyrene	0.660	7.840	14	0.41 U	**1.3** =	0.35 U	0.41 U	0.39 U	0.42 U
Naphthalene	N/A[d]	40,880	84	0.41 U	0.41 U	0.35 U	0.41 U	0.39 U	0.42 U
Phenanthrene[e]	N/A[d]	61,320	4,200	0.41 U	4.9 =	0.35 U	0.41 U	0.39 U	0.42 U
Pyrene	N/A[d]	61,320	4200	0.41 U	4.3 =	0.35 U	0.41 U	0.39 U	0.42 U
OTHER ANALYTES									
TPH-Diesel Range Organics	N/A[d]	—	—	23 J	35 J	10 UJ	12 UJ	12 UJ	13 UJ
TPH-Gasoline Range Organics	N/A[d]	—	—	0.22 J	5000 J	0.19 J	1.1 =	2.4 =	0.74 =

[a] Average or higher groundwater pollution susceptibility area (where ≤500 feet to a surface water body).
[b] Protective of soil exposure during Industrial Land Use.
[c] Protective of groundwater ingestion. Used a dilution attenuation factor of 20.
[d] Not applicable. The screening level exceeds the expected soil concentration under free product condition.
[e] Values based on pyrene as a surrogate chemical.
[f] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene.
[g] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene.
[h] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene.
[i] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene.

Bold values indicate results exceeding Georgia UST soil threshold levels.
Italicized values indicate results exceeding risk-based screening levels.
Underlined values indicate results exceeding leaching to groundwater screening levels.

U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
UJ Indicates that the sample was not detected above an approximate sample quantitation limit.
R Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.
= Indicates that the compound was detected at the concentration reported.

Table 10. CAP-Part A – Soil Data Risk-based Screening Results (continued)

Station:	Screening Levels			P2-SB14	P2-SB14	P2-SB15	P2-SB15
Sample ID:				SB1401	SB1402	SB1501	SB1502
Sample Interval (ft BGS):	GUST Soil Threshold	Risk-based Screening	Leaching to	4.0 - 6.0	10.0 - 12.0	0.0 - 2.0	4.0 - 6.0
Collection Date:	Levels[a]	Level[b]	Groundwater[c]	11/19/1996	11/19/1996	11/20/1996	11/20/1996
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.017	197.4	0.03	0.0053 U	0.0062 U	0.0054 U	0.0057 U
Toluene	115	408,800	12	0.0053 U	0.0062 U	0.0054 U	0.0057 U
Ethylbenzene	18	204,400	13	0.0053 U	0.0062 U	0.0054 U	0.0057 U
Xylenes	700	1,000,000	190	0.0053 U	0.0062 U	0.0054 U	0.0057 U
POLYNUCLEAR AROMATIC HYDROCARBONS							
1-Methylnaphthalene	N/A[d]	—	—	0.35 U	0.41 U	0.36 U	0.38 U
2-Methlynaphthalene	N/A[d]	—	—	0.35 U	0.41 U	0.36 U	0.38 U
Acenaphthene	N/A[d]	12,264	570	0.35 U	0.41 U	0.36 U	0.38 U
Acenaphthylene	N/A[d]	61,320	4,200	0.35 U	0.41 U	0.36 U	0.38 U
Anthracene	N/A[d]	613,200	12,000	[f]	[f]	[f]	[f]
Benoz(a)anthracene	0.660	7.84	2	[g]	[g]	[g]	[g]
Benzo(a)pyrene	0.660	0.784	8	0.35 U	0.41 U	0.36 U	0.38 U
Benzo(b)fluoranthene	0.660	7.84	5	0.35 U	0.41 U	0.36 U	0.38 U
Benzo(g,h,i)perylene	N/A[d]	—	—	0.35 U	0.41 U	0.36 U	0.38 U
Benzo(k)fluoranthene	0.660	78.4	49	[h]	[h]	[h]	[h]
Chrysene	0.660	784	160	0.35 U	0.41 U	0.36 U	0.38 U
Dibenzo(a,h)anthracene	0.660	0.784	2	[i]	[i]	[i]	[i]
Fluoranthene	N/A[d]	81,760	4,300	0.35 U	0.41 U	0.36 U	0.38 U
Fluorene	N/A[d]	81,760	560	0.35 U	0.41 U	0.36 U	0.38 U
Indeno(1,2,3-cd)pyrene	0.660	7.840	14	0.35 U	0.41 U	0.36 U	0.38 U
Naphthalene	N/A[d]	40,880	84	0.35 U	0.41 U	0.36 U	0.38 U
Phenanthrene[e]	N/A[d]	61,320	4,200	0.35 U	0.41 U	0.36 U	0.38 U
Pyrene	N/A[d]	61,320	4200	0.35 U	0.41 U	0.36 U	0.38 U
OTHER ANALYTES							
TPH-Diesel Range Organics	N/A[d]	—	—	11 UJ	12 UJ	4.2 =	7.7 =
TPH-Gasoline Range Organics	N/A[d]	—	—	0.19 U	0.28 =	0.27 U	0.28 U

[a] Average or higher groundwater pollution susceptibility area (where ≤500 feet to a surface water body).
[b] Protective of soil exposure during Industrial Land Use.
[c] Protective of groundwater ingestion. Used a dilution attenuation factor of 20.
[d] Not applicable. The screening level exceeds the expected soil concentration under free product condition.
[e] Values based on pyrene as a surrogate chemical.
[f] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene.
[g] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene.
[h] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene.
[i] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene.

Bold values indicate results exceeding Georgia UST soil threshold levels.
Italicized values indicate results exceeding risk-based screening levels.
Underlined values indicate results exceeding leaching to groundwater screening levels.

U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
UJ Indicates that the sample was not detected above an approximate sample quantitation limit.
R Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.
= Indicates that the compound was detected at the concentration reported.

Table 11. CAP-Part A – Sediment Data Risk-based Screening Results

Station: / Sample ID: / Collection Date: / Units:	GUST Soil Threshold Levels[a] (mg/kg)	P2-SWE03 HT4-SE03 12/10/1996 (mg/kg)	P2-SWE04 HT4-SE04 12/10/1996 (mg/kg)	P2-SWE05 HT4-SE05 12/10/1996 (mg/kg)	P2-SE06 HT4-SE06 12/10/1996 (mg/kg)
VOLATILE ORGANIC COMPOUNDS					
Benzene	0.017	0.0078 U	0.0077 U	0.0078 U	0.0068 U
Toluene	115	0.0078 U	0.0077 U	0.0078 U	0.0068 U
Ethylbenzene	18	0.0078 U	0.0077 U	0.0078 U	0.0068 U
Xylenes	700	0.0078 U	0.0077 U	0.0078 U	0.0068 U
POLYNUCLEAR AROMATIC HYDROCARBONS					
1-Methylnaphthalene	N/A[b]	0.52 U	0.51 U	0.52 U	2.3 U
2-Methlynaphthalene	N/A[b]	0.52 U	0.51 U	0.52 U	2.3 U
Acenaphthene	N/A[b]	0.52 U	0.51 U	0.52 U	2.3 U
Acenaphthylene	N/A[b]	0.52 U	0.51 U	0.52 U	2.3 U
Anthracene	N/A[b]	[d]	[d]	[d]	[d]
Benoz(a)anthracene	0.660	[e]	[e]	[e]	[e]
Benzo(a)pyrene	0.660	**1.9** =	0.51 U	0.52 U	**8.5** J
Benzo(b)fluoranthene	0.660	**3.7** =	0.51 U	0.52 U	**16** J
Benzo(g,h,i)perylene	N/A[b]	1.1 =	0.51 U	0.52 U	5.6 J
Benzo(k)fluoranthene	0.660	[f]	[f]	[f]	[f]
Chrysene	0.660	**3.5** =	0.51 U	0.52 U	**21** J
Dibenzo(a,h)anthracene	0.660	[g]	[g]	[g]	[g]
Fluoranthene	N/A[b]	4.8 =	0.51 U	0.52 U	20 J
Fluorene	N/A[b]	0.52 U	0.51 U	0.52 U	2.3 U
Indeno(1,2,3-cd)pyrene	0.660	**1.5** =	0.51 U	0.52 U	**7** J
Naphthalene	N/A[b]	0.52 U	0.51 U	0.52 U	2.3 U
Phenanthrene[c]	N/A[b]	2.8 =	0.51 U	0.52 U	12 J
Pyrene	N/A[b]	4 J	0.51 U	0.52 U	16 J
OTHER ANALYTES					
TPH-DRO	N/A[b]	16 U	15 U	16 U	32 =
TPH-GRO	N/A[b]	0.28 U	0.28 U	0.28 U	0.25 U

[a] Average or higher groundwater pollution susceptibility area (where ≤500 feet to a surface water body)

[b] Not applicable. The screening level exceeds the expected soil concentration under free product condition.

[c] Values based on pyrene as a surrogate chemical.

[d] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene.

[e] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene.

[f] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene.

[g] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene.

Bold values indicate results exceeding Georgia UST soil threshold levels.

U Indicates that the compound was not detected above the reported sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

UJ Indicates that the sample was not detected above an approximate sample quantitation limit.

R Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.

= Indicates that the compound was detected at the concentration reported.

Table 12. CAP-Part A – Groundwater Data Risk-based Screening Results

Station:	Screening Levels		P2-MW04	P2-MW05	P2-MW06	P2-MW10
Sample ID:	In-Stream		HT4-MW04	HT4-MW05	HT4-MW06	HT4-MW10
Screened Interval (ft BGS):	Water Quality		6.0 - 16.0	7.5 - 17.5	7.5 - 17.5	5.0 - 15.0
Collection Date:	Standards	Risk-based[a]	12/09/1996	12/09/1996	12/09/1996	12/10/1996
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
VOLATILE ORGANIC COMPOUNDS						
Benzene	71	0.36	1 U	**2400** =	**740** =	**260** J
Toluene	200,000	750	1 U	280 =	2300 =	25 U
Ethylbenzene	28,718	1300	1 U	840 =	770 =	580 J
Xylenes	—	12000	2 U	870 =	2900 =	720 J
POLYNUCLEAR AROMATIC HYDROCARBONS						
1-Methylnaphthalene	—	—	1 U	1 U	5 U	1 U
2-Methlynaphthalene	—	—	1 U	1 U	5 U	1 U
Acenaphthene	—	365	1 U	1 U	5 U	1 U
Acenaphthylene	—	182.5	1 U	1.2 =	5 U	2.3 =
Anthracene	110,000	182.5	0.2 U	1.5 =	1 U	0.2 U
Benoz(a)anthracene	0.0311	0.092	**0.2** U	**0.2** U	**1** U	**0.2** U
Benzo(a)pyrene	0.0311	0.0092	**0.2** U	**0.2** U	**1.0** U	**0.2** U
Benzo(b)fluoranthene	—	0.092	0.2 U	0.2 U	1.0 U	0.2 U
Benzo(g,h,i)perylene	—	—	0.5 U	0.5 U	2.5 U	0.5 U
Benzo(k)fluoranthene	0.0311	0.92	**0.5** U	**0.5** U	**2.5** U	**0.5** U
Chrysene	0.0311	9.2	**0.2** U	**0.2** U	**1.0** U	**0.2** U
Dibenzo(a,h)anthracene	0.0311	0.0092	**1** U	**1** U	**5** U	**1** U
Fluoranthene	370	1460	0.5 U	2.1 J	2.5 U	0.5 U
Fluorene	14,000	243	0.5 U	3.2 J	2.5 U	0.5 U
Indeno(1,2,3-cd)pyrene	0.0311	0.092	**0.5** U	**0.5** U	**2.5** U	**0.5** U
Naphthalene	—	6.5	1 U	15 =	79.0 =	9.8 =
Phenanthrene[b]	—	182.5	0.2 U	8 J	1.0 U	0.36 J
Pyrene	11,000	182.5	0.5 U	1.6 J	2.5 U	0.5 U

[a] Protective of tap water ingestion by a resident.
[b] Values based on pyrene as a surrogate chemical.
Bold values indicate results exceeding Georgia In-Stream Water Quality Standards.
Underlined values indicate results exceeding risk-based screening levels.

U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
UJ Indicates that the sample was not detected above an approximate sample quantitation limit.
R Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.
= Indicates that the compound was detected at the concentration reported.

Table 13. CAP-Part A – Surface Water Data Risk-based Screening Results

Station: / Sample ID: / Collection Date: / Units:	In-Stream Water Quality Standards (µg/L)	P2-SWE03 HT4-SW03 12/10/1996 (µg/L)	P2-SWE04 HT4-SW04 12/10/1996 (µg/L)	P2-SWE05 HT4-SW05 12/10/1996 (µg/L)	P2-SWE06 HT4-SW06 12/10/1996 (µg/L)
VOLATILE ORGANIC COMPOUNDS					
Benzene	71	3.5 J	1 U	1 U	2 J
Toluene	200,000	7.4 J	1 U	1 U	1.4 J
Ethylbenzene	28,718	2.9 J	1 U	1 U	1 U
Xylenes	—	14 =	2 U	2 U	7.5 J
POLYNUCLEAR AROMATIC HYDROCARBONS					
1-Methylnaphthalene	—	1 U	1 U	1 U	1 U
2-Methlynaphthalene	—	1 U	1 U	1 U	1 U
Acenaphthene	—	1 U	1 U	1 U	1 U
Acenaphthylene	—	1 U	1 U	1 U	1 U
Anthracene	110,000	0.2 U	0.2 U	0.2 U	0.2 U
Benzo(a)anthracene	0.0311	**0.2 U**	**0.2 U**	**0.2 U**	**0.2 U**
Benzo(a)pyrene	0.0311	**0.2 U**	**0.2 U**	**0.2 U**	**0.2 U**
Benzo(b)fluoranthene	—	0.2 U	0.2 U	0.2 U	0.2 U
Benzo(g,h,i)perylene	—	0.5 U	0.5 U	0.5 U	0.5 U
Benzo(k)fluoranthene	0.0311	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**
Chrysene	0.0311	**0.2 U**	**0.2 U**	**0.2 U**	**0.2 U**
Dibenzo(a,h)anthracene	0.0311	**1 U**	**1 U**	**1 U**	**1 U**
Fluoranthene	370	0.5 U	0.5 U	0.2 U	0.5 U
Fluorene	14,000	0.5 U	0.5 U	0.2 U	0.5 U
Indeno(1,2,3-cd)pyrene	0.0311	**0.5 U**	**0.5 U**	**0.2 U**	**0.5 U**
Naphthalene	—	1 U	1 U	1 U	1 U
Phenanthrene	—	0.2 U	0.2 U	0.2 U	0.2 U
Pyrene	11,000	0.5 U	0.5 U	0.2 U	0.5 U

Bold values indicate results exceeding Georgia In-Stream Water Quality Standards.

U Indicates that the compound was not detected above the reported sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

UJ Indicates that the sample was not detected above an approximate sample quantitation limit.

R Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.

= Indicates that the compound was detected at the concentration reported.

Table 14. CAP-Part B – Soil Data Risk-based Screening Results

Station:	Screening Levels			P2-MW25	P2-MW25	P2-MW26	P2-MW26	P2-MW27	P2-MW27
Sample ID:	GUST Soil	Risk-based		WB2501	WB2502	WB2601	WB2602	WB2701	WB2702
Sample Interval (ft BGS):	Threshold	Screening	Leaching to	2.0 - 4.0	8.0 - 10.0	4.0 - 6.0	8.0 - 10.0	8.0 - 10.0	13.0 - 15.0
Collection Date:	Levels[a]	Level[b]	Groundwater[c]	05/08/1997	05/08/1997	05/08/1997	05/08/1997	05/09/1997	05/09/1997
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS									
Benzene	0.017	197.4	0.03	0.0052 U	**3.3 U**	0.0056 U	0.0063 U	**0.02 UJ**	0.0062 U
Toluene	115	408,800	12	0.0052 U	15 U	0.0056 U	0.0063 U	3.5 J	0.015 =
Ethylbenzene	18	204,400	13	0.0052 U	**49** =	0.0056 U	0.0063 U	13 J	0.0084 =
Xylene (total)	700	1,000,000	190	0.0052 U	270 =	0.0056 U	0.0063 U	50 J	0.017 =
POLYNUCLEAR AROMATIC HYDROCARBONS									
1-Methylnaphthalene	N/A[d]	—	—	0.34 U	0.4 U	0.37 U	0.42 U	0.48 =	0.41 U
2-Methylnaphthalene	N/A[d]	—	—	0.34 U	0.4 U	0.37 U	0.42 U	0.97 =	0.41 U
Acenaphthene	N/A[d]	12,264	570	0.34 U	0.4 U	0.37 U	0.42 U	0.46 =	0.41 U
Acenaphthylene	N/A[d]	61,320	4,200	0.34 U	0.4 U	0.37 U	0.42 U	0.35 U	0.41 U
Anthracene	N/A[d]	613,200	12,000	[f]	[f]	[f]	[f]	[f]	[f]
Bezno(a)anthracene	0.660	7.84	2	[g]	[g]	[g]	[g]	[g]	[g]
Benzo(a)pyrene	0.660	0.784	8	0.34 U	0.4 U	0.37 U	0.42 U	0.19 J	0.41 U
Benzo(b)fluoranthene	0.660	7.84	5	0.34 U	0.4 U	0.37 U	0.42 U	0.39 =	0.41 U
Benzo(g,h,i)perylene	N/A[d]	—	—	0.34 U	0.4 U	0.37 U	0.42 U	0.35 U	0.41 U
Benzo(k)fluoranthene	0.660	78.4	49	[h]	[h]	[h]	[h]	[h]	[h]
Chrysene	0.660	784	160	0.34 U	0.4 U	0.37 U	0.42 U	0.4 =	0.41 U
Dibenzo(a,h)anthracene	0.660	0.784	2	[i]	[i]	[i]	[i]	[i]	[i]
Fluoranthene	N/A[d]	81,760	4,300	0.34 U	0.4 U	0.37 U	0.42 U	1.6 =	0.41 U
Fluorene	N/A[d]	81,760	560	0.34 U	0.4 U	0.37 U	0.42 U	0.29 J	0.41 U
Indeno(1,2,3-cd)pyrene	0.660	7.840	14	0.34 U	0.4 U	0.37 U	0.42 U	0.35 U	0.41 U
Naphthalene	N/A[d]	40,880	84	0.34 U	0.4 U	0.37 U	0.42 U	0.9 =	0.41 U
Phenanthrene[e]	N/A[d]	61,320	4,200	0.34 U	0.4 U	0.37 U	0.42 U	1.4 =	0.41 U
Pyrene	N/A[d]	61,320	4200	0.34 U	0.4 U	0.37 U	0.42 U	1.3 =	0.044 J
OTHER ANALYTES									
TPH - Diesel Range Organics	N/A[d]	—	—	5.1 J	13 =	11 U	12 U	54 =	12 U
TPH - Gasoline Range Organics	N/A[d]	—	—	0.17 UJ	7900 =	0.2 U	0.42 =	710 J	0.22 UJ

[a] Average or higher groundwater pollution susceptibility area (where ≤500 feet to a surface water body).
[b] Protective of soil exposure during Industrial Land Use.
[c] Protective of groundwater ingestion. Used a dilution attenuation factor of 20.
[d] Not applicable. The screening level exceeds the expected soil concentration under free product condition.
[e] Values based on pyrene as a surrogate chemical.
[f] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene.
[g] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene.
[h] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene.
[i] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene.

Bold values indicate results exceeding Georgia UST soil threshold levels.
Italicized values indicate results exceeding risk-based screening levels.
Underlined values indicate results exceeding leaching to groundwater screening levels.

U	Indicates that the compound was not detected above the reported sample quantitation limit.
J	Indicates that the value for the compound was an estimated value.
UJ	Indicates that the sample was not detected above an approximate sample quantitation limit.
R	Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.
=	Indicates that the compound was detected at the concentration reported.

Table 14. CAP-Part B – Soil Data Risk-based Screening Results (continued)

Station:	Screening Levels			P2-MW28	P2-MW28	P2-MW29	P2-MW29	P2-MW30	P2-MW30
Sample ID:				WB2801	WB2802	WB2901	WB2902	WB3001	WB3002
Sample Interval (ft BGS):	GUST Soil Threshold Levels[a]	Risk-based Screening Level[b]	Leaching to Groundwater[c]	8.0 - 10.0	13.0 - 15.0	8.0 - 10.0	13.0 - 15.0	8.0 - 10.0	13.0 - 15.0
Collection Date:				05/08/1997	05/08/1997	05/08/1997	05/08/1997	05/09/1997	05/09/1997
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS									
Benzene	0.017	197.4	0.03	0.0055 U	0.0066 U	0.0055 U	0.0063 U	0.0057 U	0.0061 U
Toluene	115	408,800	12	0.0055 U	0.0066 U	0.0055 U	0.0063 U	0.0057 U	0.0096 =
Ethylbenzene	18	204,400	13	0.0055 U	0.0066 U	0.0055 U	0.0063 U	0.0057 U	0.0061 U
Xylene (total)	700	1,000,000	190	0.0055 U	0.0066 U	0.0055 U	0.0063 U	0.0057 U	0.01 =
POLYNUCLEAR AROMATIC HYDROCARBONS									
1-Methylnaphthalene	N/A[d]	—	—	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
2-Methylnaphthalene	N/A[d]	—	—	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Acenaphthene	N/A[d]	12,264	570	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Acenaphthylene	N/A[d]	61,320	4,200	0.37 U [f]	0.43 U [f]	0.36 U [f]	0.42 U [f]	0.38 U [f]	0.40 U [f]
Anthracene	N/A[d]	613,200	12,000	[g]	[g]	[g]	[g]	[g]	[g]
Bezno(a)anthracene	0.660	7.84	2						
Benzo(a)pyrene	0.660	0.784	8	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Benzo(b)fluoranthene	0.660	7.84	5	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Benzo(g,h,i)perylene	N/A[d]	—	—	0.37 U [h]	0.43 U [h]	0.36 U [h]	0.42 U [h]	0.38 U [h]	0.40 U [h]
Benzo(k)fluoranthene	0.660	78.4	49						
Chrysene	0.660	784	160	0.37 U [i]	0.43 U [i]	0.36 U [i]	0.42 U [i]	0.12 J [i]	0.40 U [i]
Dibenzo(a,h)anthracene	0.660	0.784	2						
Fluoranthene	N/A[d]	81,760	4,300	0.37 U	0.43 U	0.36 U	0.42 U	0.064 J	0.40 U
Fluorene	N/A[d]	81,760	560	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Indeno(1,2,3-cd)pyrene	0.660	7.840	14	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Naphthalene	N/A[d]	40,880	84	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Phenanthrene[e]	N/A[d]	61,320	4,200	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Pyrene	N/A[d]	61,320	4200	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
OTHER ANALYTES									
TPH - Diesel Range Organics	N/A[d]	—	—	11 U	13 U	22 =	13 U	11 U	12 U
TPH - Gasoline Range Organics	N/A[d]	—	—	0.2 U	0.24 U	0.2 U	0.23 U	0.2 UJ	0.22 UJ

[a] Average or higher groundwater pollution susceptibility area (where ≤500 feet to a surface water body).
[b] Protective of soil exposure during Industrial Land Use.
[c] Protective of groundwater ingestion. Used a dilution attenuation factor of 20.
[d] Not applicable. The screening level exceeds the expected soil concentration under free product condition.
[e] Values based on pyrene as a surrogate chemical.
[f] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene.
[g] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene.
[h] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene.
[i] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene.

Bold values indicate results exceeding Georgia UST soil threshold levels.
Italicized values indicate results exceeding risk-based screening levels.
Underlined values indicate results exceeding leaching to groundwater screening levels.

U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
UJ Indicates that the sample was not detected above an approximate sample quantitation limit.
R Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.
= Indicates that the compound was detected at the concentration reported.

Table 14. CAP-Part B – Soil Data Risk-based Screening Results (continued)

Station:	Screening Levels			P2-MW31	P2-MW31	P2-MW32	P2-MW32	P2-SB42	P2-SB42
Sample ID:	GUST Soil	Risk-based		WB3101	WB3102	WB3201	WB3202	SB4201	SB4202
Sample Interval (ft BGS):	Threshold	Screening	Leaching to	8.0 - 10.0	13.0 - 15.0	4.0 - 6.0	8.0 - 10.0	4.0 - 6.0	8.0 - 10.0
Collection Date:	Levels[a]	Level[b]	Groundwater[c]	05/09/1997	05/09/1997	05/13/1997	05/13/1997	05/08/1997	05/08/1997
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS									
Benzene	0.017	197.4	0.03	0.0053 U	0.0061 U	0.0052 U	0.006 U	0.0062 U	**<u>0.069</u> U**
Toluene	115	408,800	12	0.0053 U	0.0064 =	0.0052 U	0.006 U	0.025 =	0.75 =
Ethylbenzene	18	204,400	13	0.0053 U	0.0061 U	0.0052 U	0.006 U	0.033 =	2.4 =
Xylene (total)	700	1,000,000	190	0.0053 U	0.0061 U	0.0052 U	0.006 U	0.036 =	17 =
POLYNUCLEAR AROMATIC HYDROCARBONS									
1-Methylnaphthalene	N/A[d]	—	—	0.35 U	0.40 U	0.34 U	0.037 J	0.42 U	0.83 U
2-Methylnaphthalene	N/A[d]	—	—	0.35 U	0.40 U	0.34 U	0.62 =	0.42 U	0.83 U
Acenaphthene	N/A[d]	12,264	570	0.35 U	0.40 U	0.34 U	0.39 U	0.42 U	0.83 U
Acenaphthylene	N/A[d]	61,320	4,200	0.35 U	0.40 U	0.34 U	0.39 U	0.42 U	0.83 U
Anthracene	N/A[d]	613,200	12,000	[f]	[f]	[f]	[f]	[f]	[f]
Bezno(a)anthracene	0.660	7.84	2	[g]	[g]	[g]	[g]	[g]	[g]
Benzo(a)pyrene	0.660	0.784	8	0.33 J	0.40 U	0.34 U	0.39 U	0.42 U	0.24 J
Benzo(b)fluoranthene	0.660	7.84	5	0.19 J	0.40 U	0.34 U	0.39 U	0.42 U	**0.83 U**
Benzo(g,h,i)perylene	N/A[d]	—	—	0.69 =	0.40 U	0.34 U	0.39 U	0.42 U	0.83 U
Benzo(k)fluoranthene	0.660	78.4	49	[h]	[h]	[h]	[h]	[h]	[h]
Chrysene	0.660	784	160	0.16 J	0.40 U	0.34 U	0.39 U	0.32 J	**3 =**
Dibenzo(a,h)anthracene	0.660	0.784	2	[i]	[i]	[i]	[i]	[i]	[i]
Fluoranthene	N/A[d]	81,760	4,300	0.35 U	0.40 U	0.34 U	0.39 U	0.29 J	3.3 =
Fluorene	N/A[d]	81,760	560	0.35 U	0.40 U	0.34 U	0.079 =	0.42 U	0.83 U
Indeno(1,2,3-cd)pyrene	0.660	7.840	14	**0.89 =**	0.40 U	0.34 U	0.39 U	0.42 U	**0.83 U**
Naphthalene	N/A[d]	40,880	84	0.35 U	0.40 U	0.34 U	0.39 U	0.42 U	0.83 U
Phenanthrene[e]	N/A[d]	61,320	4,200	0.35 U	0.40 U	0.34 U	0.39 U	0.22 J	0.83 U
Pyrene	N/A[d]	61,320	4200	0.05 J	0.40 U	0.34 U	0.39 U	0.32 J	3.9 =
OTHER ANALYTES									
TPH - Diesel Range Organics	N/A[d]	—	—	12 =	12 U	10 U	12 =	17 =	140 =
TPH - Gasoline Range Organics	N/A[d]	—	—	0.19 UJ	0.22 UJ	0.19 UJ	0.21 UJ	0.58 J	170 J

[a] Average or higher groundwater pollution susceptibility area (where ≤500 feet to a surface water body).
[b] Protective of soil exposure during Industrial Land Use.
[c] Protective of groundwater ingestion. Used a dilution attenuation factor of 20.
[d] Not applicable. The screening level exceeds the expected soil concentration under free product condition.
[e] Values based on pyrene as a surrogate chemical.
[f] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene.
[g] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene.
[h] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene.
[i] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene.

Bold values indicate results exceeding Georgia UST soil threshold levels.
Italicized values indicate results exceeding risk-based screening levels.
Underlined values indicate results exceeding leaching to groundwater screening levels.

U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
UJ Indicates that the sample was not detected above an approximate sample quantitation limit.
R Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.
= Indicates that the compound was detected at the concentration reported.

Table 14. CAP-Part B – Soil Data Risk-based Screening Results (continued)

Station:	Screening Levels			P2-SB43	P2-SB43	P2-SB44	P2-SB44	P2-SB45	P2-SB45
Sample ID:	GUST Soil	Risk-based		SB4301	SB4302	SB4401	SB4402	SB4501	SB4502
Sample Interval (ft BGS):	Threshold	Screening	Leaching to	4.0 - 6.0	10.0 - 12.0	8.0 - 10.0	10.0 - 12.0	4.0 - 6.0	8.0 - 10.0
Collection Date:	Levels[a]	Level[b]	Groundwater[c]	05/08/1997	05/08/1997	05/07/1997	05/07/1997	05/07/1997	05/07/1997
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS									
Benzene	0.017	197.4	0.03	0.0051 U	**0.17 U**	0.0054 U	**0.07 U**	0.0055 U	0.0057 U
Toluene	115	408,800	12	0.0051 U	0.77 U	0.0054 U	0.32 U	0.0095 =	0.0057 U
Ethylbenzene	18	204,400	13	0.0051 U	1.0 =	0.0054 U	0.32 U	0.0055 U	0.0057 U
Xylene (total)	700	1,000,000	190	0.0051 U	5.7 =	0.0054 U	0.37 =	0.014 =	0.0057 U
POLYNUCLEAR AROMATIC HYDROCARBONS									
1-Methylnaphthalene	N/A[d]	—	—	0.68 U	0.41 U	0.36 U	0.36 U	0.37 U	0.38 U
2-Methylnaphthalene	N/A[d]	—	—	0.42 J	0.41 U	0.36 U	0.36 U	0.37 U	0.38 U
Acenaphthene	N/A[d]	12,264	570	0.42 J	0.41 U	0.36 U	0.36 U	0.37 U	0.38 U
Acenaphthylene	N/A[d]	61,320	4,200	0.68 U	0.41 U	0.36 U	0.36 U	0.37 U	0.38 U
Anthracene	N/A[d]	613,200	12,000	[f]	[f]	[f]	[f]	[f]	[f]
Bezno(a)anthracene	0.660	7.84	2	[g]	[g]	[g]	[g]	[g]	[g]
Benzo(a)pyrene	0.660	0.784	8	**0.68 U**	0.41 U	0.52 =	0.36 U	0.37 U	0.54 =
Benzo(b)fluoranthene	0.660	7.84	5	**0.68 U**	0.41 U	**1.4 =**	0.36 U	0.37 U	**1.2 =**
Benzo(g,h,i)perylene	N/A[d]	—	—	0.68 U	0.41 U	0.36 U	0.36 U	0.37 U	0.38 U
Benzo(k)fluoranthene	0.660	78.4	49	[h]	[h]	[h]	[h]	[h]	[h]
Chrysene	0.660	784	160	**1.6 =**	0.29 J	0.44 =	0.36 U	0.37 U	0.6 =
Dibenzo(a,h)anthracene	0.660	0.784	2	[i]	[i]	[i]	[i]	[i]	[i]
Fluoranthene	N/A[d]	81,760	4,300	3.3 =	0.65 =	0.57 =	0.38 J	0.37 U	0.38 U
Fluorene	N/A[d]	81,760	560	0.52 J	0.41 U	0.36 U	0.36 U	0.37 U	0.38 U
Indeno(1,2,3-cd)pyrene	0.660	7.840	14	**0.68 U**	0.41 U	0.36 U	0.36 U	0.37 U	0.56 =
Naphthalene	N/A[d]	40,880	84	0.68 =	0.41 U	0.36 U	0.36 U	0.37 U	0.38 U
Phenanthrene[e]	N/A[d]	61,320	4,200	4.4 =	0.54 =	0.36 U	0.36 U	0.37 U	0.38 U
Pyrene	N/A[d]	61,320	4200	1.7 =	0.6 =	2.0 =	0.48 =	0.37 U	0.5 =
OTHER ANALYTES									
TPH - Diesel Range Organics	N/A[d]	—	—	68 =	13 =	140 =	140 =	9.9 J	33 =
TPH - Gasoline Range Organics	N/A[d]	—	—	0.18 U	130 J	0.062 J	70 J	0.2 U	0.69 =

[a] Average or higher groundwater pollution susceptibility area (where ≤500 feet to a surface water body).
[b] Protective of soil exposure during Industrial Land Use.
[c] Protective of groundwater ingestion. Used a dilution attenuation factor of 20.
[d] Not applicable. The screening level exceeds the expected soil concentration under free product condition.
[e] Values based on pyrene as a surrogate chemical.
[f] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene.
[g] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene.
[h] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene.
[i] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene.

Bold values indicate results exceeding Georgia UST soil threshold levels.
Italicized values indicate results exceeding risk-based screening levels.
Underlined values indicate results exceeding leaching to groundwater screening levels.

U	Indicates that the compound was not detected above the reported sample quantitation limit.
J	Indicates that the value for the compound was an estimated value.
UJ	Indicates that the sample was not detected above an approximate sample quantitation limit.
R	Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.
=	Indicates that the compound was detected at the concentration reported.

Table 14. CAP-Part B – Soil Data Risk-based Screening Results (continued)

Station:	Screening Levels			P2-SB46	P2-SB46	P2-SB47	P2-SB47	P2-SB48	P2-SB48
Sample ID:	GUST Soil	Risk-based		SB4601	SB4602	SB4701	SB4702	SB4801	SB4802
Sample Interval (ft BGS):	Threshold	Screening	Leaching to	4.0 - 6.0	10.0 - 12.0	4.0 - 6.0	10.0 - 12.0	4.0 - 6.0	10.0 - 12.0
Collection Date:	Levels[a]	Level[b]	Groundwater[c]	05/07/1997	05/07/1997	05/07/1997	05/07/1997	05/07/1997	05/07/1997
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS									
Benzene	0.017	197.4	0.03	0.0055 U	**<u>0.067</u> U**	0.0055 U	**<u>0.067</u> U**	0.0057 U	**<u>0.67</u> U**
Toluene	115	408,800	12	0.0055 U	0.3 U	0.0055 U	0.3 U	0.0057 U	10 =
Ethylbenzene	18	204,400	13	0.0055 U	0.23 J	0.0055 U	0.091 J	0.0057 U	16 =
Xylene (total)	700	1,000,000	190	0.0055 U	2.2 =	0.0055 U	0.65 =	0.0057 U	100 =
POLYNUCLEAR AROMATIC HYDROCARBONS									
1-Methylnaphthalene	N/A[d]	—	—	0.36 U	0.41 U	1.8 U	0.40 U	0.37 U	0.41 U
2-Methylnaphthalene	N/A[d]	—	—	0.36 U	0.41 U	1.8 U	0.40 U	0.37 U	0.41 U
Acenaphthene	N/A[d]	12,264	570	0.36 U	0.41 U	1.8 U	0.40 U	0.37 U	0.41 U
Acenaphthylene	N/A[d]	61,320	4,200	0.36 U	0.41 U	1.8 U	0.40 U	0.37 U	0.41 U
Anthracene	N/A[d]	613,200	12,000	[f]	[f]	[f]	[f]	[f]	[f]
Bezno(a)anthracene	0.660	7.84	2	[g]	[g]	[g]	[g]	[g]	[g]
Benzo(a)pyrene	0.660	0.784	8	0.36 U	0.41 U	**1.8 U**	0.40 U	0.37 U	0.41 U
Benzo(b)fluoranthene	0.660	7.84	5	0.36 U	0.41 U	**1.8 U**	0.34 J	0.37 U	0.41 =
Benzo(g,h,i)perylene	N/A[d]	—	—	0.36 U	0.41 U	1.8 U	0.40 U	0.37 U	0.41 U
Benzo(k)fluoranthene	0.660	78.4	49	[h]	[h]	[h]	[h]	[h]	[h]
Chrysene	0.660	784	160	0.36 U	0.42 =	**1.8 U**	**0.73 =**	0.37 U	**1 =**
Dibenzo(a,h)anthracene	0.660	0.784	2	[i]	[i]	[i]	[i]	[i]	[i]
Fluoranthene	N/A[d]	81,760	4,300	0.36 U	0.87 =	1.8 U	1.3 =	0.37 U	1.5 =
Fluorene	N/A[d]	81,760	560	0.36 U	0.41 U	1.8 U	0.40 U	0.37 U	0.41 U
Indeno(1,2,3-cd)pyrene	0.660	7.840	14	0.36 U	0.41 U	**1.8 U**	0.40 U	0.37 U	0.41 U
Naphthalene	N/A[d]	40,880	84	0.36 U	0.41 U	1.8 U	0.40 U	0.37 U	0.41 U
Phenanthrene[e]	N/A[d]	61,320	4,200	0.36 U	0.74 =	1.8 U	1.1 =	0.37 U	1.4 =
Pyrene	N/A[d]	61,320	4200	0.36 U	0.76 =	1.8 U	1.2 =	0.37 U	1.5 =
OTHER ANALYTES									
TPH - Diesel Range Organics	N/A[d]	—	—	11 UJ	18 J	360 J	22 J	61 J	33 J
TPH - Gasoline Range Organics	N/A[d]	—	—	0.2 U	100 J	0.078 J	56 J	0.2 U	1900 J

[a] Average or higher groundwater pollution susceptibility area (where ≤500 feet to a surface water body).
[b] Protective of soil exposure during Industrial Land Use.
[c] Protective of groundwater ingestion. Used a dilution attenuation factor of 20.
[d] Not applicable. The screening level exceeds the expected soil concentration under free product condition.
[e] Values based on pyrene as a surrogate chemical.
[f] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene.
[g] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene.
[h] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene.
[i] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene.

Bold values indicate results exceeding Georgia UST soil threshold levels.
Italicized values indicate results exceeding risk-based screening levels.
Underlined values indicate results exceeding leaching to groundwater screening levels.

U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
UJ Indicates that the sample was not detected above an approximate sample quantitation limit.
R Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.
= Indicates that the compound was detected at the concentration reported.

Table 14. CAP-Part B – Soil Data Risk-based Screening Results (continued)

Station:	Screening Levels			P2-SB49	P2-SB49	P2-SB50	P2-SB50	P2-SB51	P2-SB51	P2-SB52
Sample ID:	GUST Soil Threshold Levels[a]	Risk-based Screening Level[b]	Leaching to Groundwater[c]	SB4901	SB4902	SB5001	SB5002	SB5101	SB5102	SB5201
Sample Interval (ft BGS):				8.0 - 10.0	10.0 - 12.0	4.0 - 6.0	8.0 - 10.0	2.0 - 4.0	6.0 - 8.0	4.0 - 6.0
Collection Date:				05/07/1997	05/07/1997	05/07/1997	05/07/1997	05/07/1997	05/07/1997	05/07/1997
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS										
Benzene	0.017	197.4	0.03	0.0053 U	**1.6** U	0.0055 U	0.0056 U	0.0055 U	**0.066** U	0.0053 U
Toluene	115	408,800	12	0.0053 U	23 =	0.0055 U	0.0056 U	0.0055 U	3.7 U	0.0053 U
Ethylbenzene	18	204,400	13	0.0053 U	**38** =	0.0055 U	0.0056 U	0.0055 U	13 =	0.0053 U
Xylene (total)	700	1,000,000	190	0.0053 U	240 =	0.0055 U	0.0056 U	0.0055 U	97 =	0.0053 U
POLYNUCLEAR AROMATIC HYDROCARBONS										
1-Methylnaphthalene	N/A[d]	—	—	0.35 U	0.40 U	0.37 U	0.38 U	0.37 U	0.40 U	0.35 U
2-Methylnaphthalene	N/A[d]	—	—	0.35 U	0.40 U	0.37 U	0.38 U	0.37 U	0.40 U	0.35 U
Acenaphthene	N/A[d]	12,264	570	0.35 U	0.40 U	0.37 U	0.38 U	0.37 U	0.40 U	0.35 U
Acenaphthylene	N/A[d]	61,320	4,200	0.35 U	0.40 U	0.37 U	0.38 U	0.37 U	0.40 U	0.35 U
Anthracene	N/A[d]	613,200	12,000	[f]	[f]	[f]	[f]	[f]	[f]	[f]
Bezno(a)anthracene	0.660	7.84	2	[g]	[g]	[g]	[g]	[g]	[g]	[g]
Benzo(a)pyrene	0.660	0.784	8	0.35 U	0.25 J	0.37 U	0.38 U	0.37 U	0.40 U	0.35 U
Benzo(b)fluoranthene	0.660	7.84	5	0.35 U	**0.76** =	0.37 U	0.38 U	0.37 U	0.39 J	0.35 U
Benzo(g,h,i)perylene	N/A[d]	—	—	0.35 U	0.40 U	0.37 U	0.38 U	0.37 U	0.40 U	0.35 U
Benzo(k)fluoranthene	0.660	78.4	49	[h]	[h]	[h]	[h]	[h]	[h]	[h]
Chrysene	0.660	784	160	0.22 J	0.63 =	0.37 U	0.38 U	0.37 U	**0.87** =	0.35 U
Dibenzo(a,h)anthracene	0.660	0.784	2	[i]	[i]	[i]	[i]	[i]	[i]	[i]
Fluoranthene	N/A[d]	81,760	4,300	0.51 =	2.5 =	0.37 U	0.38 U	0.37 U	1.6 =	0.35 U
Fluorene	N/A[d]	81,760	560	0.35 U	0.26 J	0.37 U	0.38 U	0.37 U	0.40 U	0.35 U
Indeno(1,2,3-cd)pyrene	0.660	7.840	14	0.35 U	0.40 U	0.37 U	0.38 U	0.37 U	0.40 U	0.35 U
Naphthalene	N/A[d]	40,880	84	0.35 U	0.40 U	0.37 U	0.38 U	0.37 U	0.40 U	0.35 U
Phenanthrene[e]	N/A[d]	61,320	4,200	0.47 =	2.7 =	0.37 U	0.38 U	0.37 U	1.5 =	0.35 U
Pyrene	N/A[d]	61,320	4200	0.45 =	2.0 =	0.37 U	0.38 U	0.37 U	1.4 =	0.35 U
OTHER ANALYTES										
TPH - Diesel Range Organics	N/A[d]	—	—	11 J	35 J	11 UJ	11 UJ	8.5 J	32 J	28 J
TPH - Gasoline Range Organics	N/A[d]	—	—	0.11 J	4400 J	0.2 U	0.2 U	0.2 U	2900 J	0.19 U

[a] Average or higher groundwater pollution susceptibility area (where ≤500 feet to a surface water body).
[b] Protective of soil exposure during Industrial Land Use.
[c] Protective of groundwater ingestion. Used a dilution attenuation factor of 20.
[d] Not applicable. The screening level exceeds the expected soil concentration under free product condition.
[e] Values based on pyrene as a surrogate chemical.
[f] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene.
[g] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene.
[h] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene.
[i] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene.

Bold values indicate results exceeding Georgia UST soil threshold levels.
Italicized values indicate results exceeding risk-based screening levels.
Underlined values indicate results exceeding leaching to groundwater screening levels.

U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
UJ Indicates that the sample was not detected above an approximate sample quantitation limit.
R Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.
= Indicates that the compound was detected at the concentration reported.

Table 14. CAP-Part B – Soil Data Risk-based Screening Results (continued)

Station:	Screening Levels			P2-SB52	P2-SB53	P2-SB53	P2-SB54	P2-SB54	P2-MW41	P2-MW41
Sample ID:	GUST Soil	Risk-based		SB5202	SB5301	SB5302	SB5401	SB5402	PH2-WB4101	PH2-WB4102
Sample Interval (ft BGS):	Threshold	Screening	Leaching to	6.0 - 8.0	0.0 - 2.0	6.0 - 8.0	4.0 - 6.0	6.0 - 8.0	10.0 - 12.0	26.0 - 28.0
Collection Date:	Levels[a]	Level[b]	Groundwater[c]	05/07/1997	05/06/1997	05/06/1997	05/07/1997	05/07/1997	09/30/1999	09/30/1999
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS										
Benzene	0.017	197.4	0.03	0.0067 U	0.0054 U	**<u>0.49</u>** =	0.0054 U	0.0057 U	**<u>0.25</u>** U	0.0064 U
Toluene	115	408,800	12	0.03 U	0.012 =	0.69 =	0.0054 U	0.0057 U	0.25 U	0.0064 U
Ethylbenzene	18	204,400	13	0.03 U	0.0054 U	2.9 =	0.0054 U	0.0057 U	0.25 U	0.0064 U
Xylene (total)	700	1,000,000	190	0.047 =	0.0099 =	4.6 =	0.0054 U	0.0057 U	1.1 =	0.013 U
POLYNUCLEAR AROMATIC HYDROCARBONS										
1-Methylnaphthalene	N/A[d]	—	—	0.38 U	0.051 J	0.36 U	0.36 U	0.38 U	0.25 U	0.026 U
2-Methylnaphthalene	N/A[d]	—	—	0.38 U	0.35 U	0.36 U	0.36 U	0.38 U	0.25 U	0.026 U
Acenaphthene	N/A[d]	12,264	570	0.38 U	0.35 U	0.36 U	0.36 U	0.38 U	0.62 U	0.065 U
Acenaphthylene	N/A[d]	61,320	4,200	0.38 U	0.35 U	0.049 J	0.36 U	0.38 U	0.25 U	0.026 U
Anthracene	N/A[d]	613,200	12,000	[f]	[f]	[f]	[f]	[f]	0.25 =	0.0052 U
Bezno(a)anthracene	0.660	7.84	2	[g]	[g]	[g]	[g]	[g]	0.36 =	0.0052 U
Benzo(a)pyrene	0.660	0.784	8	0.38 U	0.35 U	0.36 U	0.36 U	0.38 U	0.19 =	0.0052 U
Benzo(b)fluoranthene	0.660	7.84	5	0.38 U	0.35 U	0.36 U	0.36 U	0.38 U	0.28 =	0.0052 U
Benzo(g,h,i)perylene	N/A[d]	—	—	0.38 U	0.35 U	0.36 U	0.36 U	0.38 U	0.19 =	0.013 U
Benzo(k)fluoranthene	0.660	78.4	49	[h]	[h]	[h]	[h]	[h]	0.13 =	0.0052 U
Chrysene	0.660	784	160	0.38 U	0.35 U	0.36 U	0.36 U	0.38 U	0.38 =	0.0052 U
Dibenzo(a,h)anthracene	0.660	0.784	2	[i]	[i]	[i]	[i]	[i]	0.23 J	0.013 U
Fluoranthene	N/A[d]	81,760	4,300	0.38 U	0.35 U	0.36 U	0.36 U	0.38 U	1.3 =	0.013 U
Fluorene	N/A[d]	81,760	560	0.38 U	0.35 U	0.36 U	0.36 U	0.38 U	0.12 U	0.013 U
Indeno(1,2,3-cd)pyrene	0.660	7.840	14	0.38 U	0.35 U	0.36 U	0.36 U	0.38 U	0.12 U	0.013 U
Naphthalene	N/A[d]	40,880	84	0.38 U	0.35 U	0.36 U	0.36 U	0.38 U	0.25 U	0.026 U
Phenanthrene[e]	N/A[d]	61,320	4,200	0.38 U	0.35 U	0.36 U	0.36 U	0.38 U	1 =	0.0052 U
Pyrene	N/A[d]	61,320	4200	0.38 U	0.35 U	0.36 U	0.36 U	0.38 U	1.3 =	0.013 U
OTHER ANALYTES										
TPH - Diesel Range Organics	N/A[d]	—	—	10 J	11 U	15 =	7 J	9.3 J	18 =	4.3 U
TPH - Gasoline Range Organics	N/A[d]	—	—	4.8 =	0.19 U	190 =	0.19 U	0.2 U	36 J	0.32 U

[a] Average or higher groundwater pollution susceptibility area (where ≤500 feet to a surface water body).
[b] Protective of soil exposure during Industrial Land Use.
[c] Protective of groundwater ingestion. Used a dilution attenuation factor of 20.
[d] Not applicable. The screening level exceeds the expected soil concentration under free product condition.
[e] Values based on pyrene as a surrogate chemical.
[f] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene.
[g] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene.
[h] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene.
[i] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene.

Bold values indicate results exceeding Georgia UST soil threshold levels.
Italicized values indicate results exceeding risk-based screening levels.
Underlined values indicate results exceeding leaching to groundwater screening levels.

U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
UJ Indicates that the sample was not detected above an approximate sample quantitation limit.
R Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.
= Indicates that the compound was detected at the concentration reported.

Table 15. CAP-Part B – Groundwater Data Risk-based Screening Results

Station:	Screening Levels		P2-MW25	P2-MW26	P2-MW28	P2-MW29	P2-MW30	P2-MW31	P2-MW32
Sample ID:	In-Stream		MW2501	MW2601	MW2801	MW2901	MW3001	MW3101	MW3201
Screened Interval (ft BGS):	Water Quality		5.0 - 15.0	5.0 - 15.0	8.0 - 18.0	9.0 - 19.0	9.0 - 19.0	8.0 - 18.0	30.0 - 35.0
Collection Date:	Standards	Risk-based[a]	05/29/1997	05/29/1997	05/29/1997	05/29/1997	05/29/1997	05/29/1997	05/29/1997
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
VOLATILE ORGANIC COMPOUNDS									
Benzene	71	0.36	60 =	1 U	40 J	**1100 =**	24 J	61 =	2.6 =
Toluene	200,000	750	11 UJ	1 U	43 J	1500 =	500 =	1100 =	1 U
Ethylbenzene	28,718	1300	330 =	1 U	440 =	770 =	240 =	970 =	2.2 =
Xylene (total)	NRC	12000	1100 =	2 U	2600 =	3100 =	1400 =	4100 =	2.8 =
POLYNUCLEAR AROMATIC HYDROCARBONS									
1-Methylnaphthalene	—	—	0.56 J	1 U	2 U	1 U	5 U	10 =	1 U
2-Methylnaphthalene	—	—	2.6 =	1 U	3.6 =	2.6 =	5 U	5 U	1 U
Acenaphthene	—	365	1 R	1 R	2 R	1 R	5 R	1.9 J	1 R
Acenaphthylene	—	182.5	1 U	1 U	2 U	1 U	5 U	5 U	1 U
Anthracene	110,000	182.5	0.2 U	0.2 U	0.64 J	0.57 J	0.91 J	1.2 J	0.015 J
Benzo(a)anthracene	0.0311	0.092	0.0311 U	0.0311 U	0.014 J	0.0311 U	**0.16 =**	**0.1 J**	0.0311 U
Benzo(a)pyrene	0.0311	0.0092	0.0311 U	0.0311 U	**0.062 U**	0.022 J	**0.156 U**	**0.156 U**	0.0311 U
Benzo(b)fluoranthene	—	0.092	0.2 U	0.038 J	0.05 J	0.054 J	1 U	1 U	0.2 U
Benzo(k)fluoranthene	—	—	0.5 U	0.5 U	1 U	0.5 U	2.5 U	2.5 U	0.5 U
Benzo(g,h,i)perylene	0.0311	0.92	0.0311 U	0.0311 U	**0.062 U**	0.0311 U	**0.156 U**	**0.156 U**	0.0311 U
Chrysene	0.0311	9.2	0.011 J	0.0072 J	0.023 J	**0.05 =**	**0.18 =**	**0.12 J**	0.0311 U
Dibenzo(a,h)anthracene	0.0311	0.0092	**0.036 U**	**0.036 U**	**0.072 U**	**0.036 U**	**0.18 U**	**0.18 U**	**0.036 U**
Fluoranthene	370	1460	0.093 J	0.5 U	1.4 J	1.7 J	5.9 J	3.7 J	0.5 U
Fluorene	14,000	243	0.25 J	0.5 R	0.93 J	1.6 J	1.7 J	2.4 J	0.5 R
Indeno(1,2,3-cd)pyrene	0.0311	0.092	0.0311 U	0.0311 U	**0.062 U**	0.0311 U	**0.156 U**	**0.156 U**	0.0311 U
Naphthalene	—	6.5	8 =	1 U	6 =	24 =	8.2 =	9.2 =	1 U
Phenanthrene[b]	—	182.5	0.16 J	0.2 U	3.4 J	4 J	7.6 J	7.5 J	0.16 J
Pyrene	11,000	182.5	0.5 U	0.5 U	1 U	0.5 U	2.9 =	1.9 J	0.12 J

[a] Protective of tap water ingestion by a resident.
[b] Values based on pyrene as a surrogate chemical.
Bold values indicate results exceeding Georgia In-Stream Water Quality Standards.
Underlined values indicate results exceeding risk-based screening levels.

U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
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R Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.
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Table 15. CAP-Part B – Groundwater Data Risk-based Screening Results (continued)

Station:	Screening Levels		P2-MW04	P2-MW05	P2-MW06	P2-MW28	P2-MW30	P2-MW31
Sample ID:	In-Stream		PH2MW0402	PH2MW0502	PH2MW0602	PH2MW2802	PH2MW3002	PH2MW3102
Screened Interval (ft BGS):	Water Quality		6.0 - 16.0	7.5 - 17.5	5.0 - 15.0	8.0 - 18.0	9.0 - 19.0	8.0 - 18.0
Collection Date:	Standards	Risk-based[a]	11/02/1999	11/02/1999	11/02/1999	11/02/1999	11/02/1999	11/02/1999
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
VOLATILE ORGANIC COMPOUNDS								
Benzene	71	0.36	14 =	**2700** =	**700** =	25 U	10 U	34 =
Toluene	200,000	750	1 U	1100 =	2100 =	32 =	94 =	77 =
Ethylbenzene	28,718	1300	0.95 =	1200 =	1200 =	450 =	210 =	360 =
Xylene (total)	NRC	12000	2 U	1670 =	5930 =	1450 =	640 =	1660 =
POLYNUCLEAR AROMATIC HYDROCARBONS								
1-Methylnaphthalene	—	—	*	*	*	*	*	*
2-Methylnaphthalene	—	—	*	*	*	*	*	*
Acenaphthene	—	365	*	*	*	*	*	*
Acenaphthylene	—	182.5	*	*	*	*	*	*
Anthracene	110,000	182.5	*	*	*	*	*	*
Benzo(a)anthracene	0.0311	0.092	*	*	*	*	*	*
Benzo(a)pyrene	0.0311	0.0092	*	*	*	*	*	*
Benzo(b)fluoranthene	—	0.092	*	*	*	*	*	*
Benzo(k)fluoranthene	—	—	*	*	*	*	*	*
Benzo(g,h,i)perylene	0.0311	0.92	*	*	*	*	*	*
Chrysene	0.0311	9.2	*	*	*	*	*	*
Dibenzo(a,h)anthracene	0.0311	0.0092	*	*	*	*	*	*
Fluoranthene	370	1460	*	*	*	*	*	*
Fluorene	14,000	243	*	*	*	*	*	*
Indeno(1,2,3-cd)pyrene	0.0311	0.092	*	*	*	*	*	*
Naphthalene	—	6.5	*	*	*	*	*	*
Phenanthrene[b]	—	182.5	*	*	*	*	*	*
Pyrene	11,000	182.5	*	*	*	*	*	*

[a] Protective of tap water ingestion by a resident.
[b] Values based on pyrene as a surrogate chemical.
Bold values indicate results exceeding Georgia In-Stream Water Quality Standards.
Underlined values indicate results exceeding risk-based screening levels.

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= Indicates that the compound was detected at the concentration reported.

Table 15. CAP-Part B – Groundwater Data Risk-based Screening Results (continued)

Station:	Screening Levels		P2-MW32	P2-MW37	P2-MW38	P2-MW39	P2-MW41	P2-MW43	P2-MW29A
Sample ID:	In-Stream		PH2MW3202	PH2MW3701	PH2MW3801	PH2MW3901	PH2MW4101	PH2MW4301	AM2912
Screened Interval (ft BGS):	Water Quality		30.0 - 35.0	8.1 - 18.1	10.9 - 20.9	9.1 - 19.1	5.3 - 25.3	5.6 - 15.6	7.9 - 17.9
Collection Date:	Standards	Risk-based[a]	11/02/1999	11/02/1999	11/02/1999	11/02/1999	11/02/1999	11/02/1999	2/18/200
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
VOLATILE ORGANIC COMPOUNDS									
Benzene	71	0.36	1 U	1 U	1 U	1 U	**660** =	1 U	**572** =
Toluene	200,000	750	1 U	1 U	1 U	1 U	750 =	1 U	296 =
Ethylbenzene	28,718	1300	1 U	1 U	1 U	1 U	190 =	1 U	391 =
Xylene (total)	NRC	12000	2 U	2 U	2 U	2 U	840 =	2 U	1280 =
POLYNUCLEAR AROMATIC HYDROCARBONS									
1-Methylnaphthalene	—	—	*	1 U	1 U	1 U	1.4 =	1 U	*
2-Methylnaphthalene	—	—	*	1 U	1 U	1 U	3.8 =	1 U	*
Acenaphthene	—	365	*	1 U	1 U	1 U	1 U	1 U	*
Acenaphthylene	—	182.5	*	1 U	1 U	1 U	6.1 =	1 U	*
Anthracene	110,000	182.5	*	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	*
Benzo(a)anthracene	0.0311	0.092	*	**0.2 U**	**0.2 U**	**0.2 U**	**0.2 U**	**0.2 U**	*
Benzo(a)pyrene	0.0311	0.0092	*	**0.2 U**	**0.2 U**	**0.2 U**	**0.2 U**	**0.2 U**	*
Benzo(b)fluoranthene	—	0.092	*	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	*
Benzo(k)fluoranthene	—	—	*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	*
Benzo(g,h,i)perylene	0.0311	0.92	*	**0.2 U**	**0.2 U**	**0.2 U**	**0.2 U**	**0.2 U**	*
Chrysene	0.0311	9.2	*	**0.2 U**	**0.2 U**	**0.2 U**	**0.2 U**	**0.2 U**	*
Dibenzo(a,h)anthracene	0.0311	0.0092	*	**0.2 U**	**0.2 U**	**0.2 U**	**0.2 U**	**0.2 U**	*
Fluoranthene	370	1460	*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	*
Fluorene	14,000	243	*	0.5 U	0.5 U	0.5 U	0.5 =	0.5 U	*
Indeno(1,2,3-cd)pyrene	0.0311	0.092	*	**0.2 U**	**0.2 U**	**0.2 U**	**0.2 U**	**0.2 U**	*
Naphthalene	—	6.5	*	1 U	1 U	1 U	22 =	1 U	*
Phenanthrene[b]	—	182.5	*	0.2 U	0.2 U	0.2 U	1.5 =	0.2 U	*
Pyrene	11,000	182.5	*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	*

[a] Protective of tap water ingestion by a resident.
[b] Values based on pyrene as a surrogate chemical.
Bold values indicate results exceeding Georgia In-Stream Water Quality Standards.
Underlined values indicate results exceeding risk-based screening levels.

U Indicates that the compound was not detected above the reported sample quantitation limit.
J Indicates that the value for the compound was an estimated value.
UJ Indicates that the sample was not detected above an approximate sample quantitation limit.
R Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.
= Indicates that the compound was detected at the concentration reported.

Table 16. CAP-Part B – Surface Water Data Risk-based Screening Results

Station:	In-Stream	P2-SW01	P2-SW02	P2-SW03	P2-SW04
Sample ID:	Water Quality	PH2-SW1	PH2-SW2	PH2-SW3	PH2-SWE04
Collection Date:	Standards	02/17/1999	02/17/1999	02/17/1999	02/17/1999
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
VOLATILE ORGANIC COMPOUNDS					
Benzene	71	1 U	2.2 =	1 U	1 U
Toluene	200,000	1 U	1 U	2 =	1 U
Ethylbenzene	28,718	1 U	1.6 =	1 U	1 U
Xylenes	NRC	2 U	1.4 =	4.1 =	3.1 =
POLYNUCLEAR AROMATIC HYDROCARBONS					
1-Methylnaphthalene	—	2.1 U	2.1 U	2.1 U	2.0 U
2-Methlynaphthalene	—	2.1 U	2.1 U	2.1 U	2.0 U
Acenaphthene	—	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene	—	2.1 U	2.1 U	2.1 U	2.0 U
Anthracene	110,000	0.68 U	0.69 U	0.68 U	0.67 U
Benzo(a)anthracene	0.0311	**0.13 U**	**0.14 U**	**0.13 U**	**0.13 U**
Benzo(a)pyrene	0.0311	**0.10 U**	**0.10 U**	**0.10 U**	**0.10 U**
Benzo(b)fluoranthene	—	0.19 U	0.19 U	0.19 U	0.18 U
Benzo(g,h,i)perylene	—	0.78 U	0.79 U	0.78 U	0.77 U
Benzo(k)fluoranthene	0.0311	**0.18 U**	**0.18 U**	**0.18 U**	**0.17 U**
Chrysene	0.0311	**0.15 U**	**0.16 U**	**0.15 U**	**0.15 U**
Dibenzo(a,h)anthracene	0.0311	**0.31 U**	**0.31 U**	**0.31 U**	**0.30 U**
Fluoranthene	370	0.22 U	0.22 U	0.22 U	0.21 U
Fluorene	14,000	0.22 U	0.22 U	0.22 U	0.21 U
Indeno(1,2,3-cd)pyrene	0.0311	**0.44 U**	**0.45 U**	**0.44 U**	**0.43 U**
Naphthalene	—	1.0 U	1.0 U	1.0 U	1.0 U
Phenanthrene	—	0.66 U	0.67 U	0.66 U	0.7 U
Pyrene	11,000	0.28 U	0.28 U	0.28 U	0.27 U

Bold values indicate results exceeding Georgia In-Stream Water Quality Standards.

U Indicates that the compound was not detected above the reported sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

UJ Indicates that the sample was not detected above an approximate sample quantitation limit.

R Indicates that the sample results are unusable and the presence or absence of the compound could not be verified.

= Indicates that the compound was detected at the concentration reported.

Table 17. AT123D Predicted Maximum 2-Year Concentrations at the Former Pumphouse #2 Monitoring Well Locations

Station ID	Distance from the source (m)	Predicted 2-Yr Maximum Benzene Concentration in Groundwater[1] (µg/L)	Recent Observed Benzene Concentration in Groundwater (µg/L)
Former Tank Pit Area			
MW-04	88	782	14
MW-05	63	580	2700
MW-06	125	1,030	700
MW-27	25	309	never sampled
MW-28	100	878	40
MW-29	175	1,110	1100
MW-30	325	223	ND
MW-31	194	1,040	34
MW-37	238	759	ND
MW-38	338	178	ND
MW-39	450	16.9	ND
MW-41	12	239	660
MW-43	387	67.2	ND
Former Fuel Pit 2E			
MW-10	0.0	54	260
MW-25	31	78.7	60
MW-26	213	11	ND
MW-43	325	0.9	ND

[1] It should be noted here that the predicted maximum concentrations at the well locations are expected to occur around November 2001 assuming that the free product is removed and are based on the November 1999 concentration of 2700 µg/L in P2-MW05 for the former tank pit area and a continuous, steady state source of 260 µg/L for former Fuel Pit 2E and that groundwater is moving towards the well. This is a highly conservative assumption for many well locations (e.g., P2-MW04, etc.) that are upgradient of the source based on groundwater flow direction.

Table 18. Evaluation of Corrective Action Technologies

Action/ Technology	Description	Effectiveness	Implementability	Costs
No Action	The "No Action" alternative provides a baseline against which other actions can be compared. Under the "No Action" alternative, all source units, surface water, and groundwater would be left "as is," without implementing any removal, treatment, or other mitigating actions to reduce existing or potential future exposure.	This alternative would not address remedial response objectives of the site. This alternative does not provide protection of human health or the environment. In addition, site-specific ATLs or ACLs would not be achieved.	There is no implementability involved for this alternative because no action is taken.	There would be no cost associated with the "No Action" alternative.
Monitored Natural Attenuation	This action would require the monitoring of contaminant levels to ensure that the mass of contamination is being reduced over time. A total of 7 wells would be sampled semiannually until benzene concentrations were below the ACL of 469 µg/L.	Natural attenuation of BTEX constituents through biodegradation is known to be occurring at the site and would be effective. However, the free product that occurs at the site is limiting the effectiveness of the natural attenuation, which requires approximately 10 years to successfully meet the site objectives (i.e., ACLs) once the free product is eliminated.	This alternative is readily implementable and would only require the monitoring of 7 wells for BTEX at the site.	Low to moderate; semiannual sampling/ monitoring of 7 wells are required.
Excavation	Excavation involves the removal of "hot spots" of soil contamination. The area of benzene soil contamination greater than 0.44 mg/kg would be removed to the depth of the water table 10 to 12 feet BGS.	Excavation has already proven to be effective in reducing the contamination level in soil at the site; however, it is not effective for groundwater remediation.	Excavation is a readily implementable alternative because it would only require excavation equipment, an operator, and disposal.	High; excavation and disposal of unsaturated soil.

Table 18. Evaluation of Corrective Action Technologies (continued)

Action/ Technology	Description	Effectiveness	Implementability	Costs
Enhanced Bioremediation (Pure Oxygen Injection)	Enhanced biodegradation is the enhancement of one aspect of natural attenuation. The activity of naturally occurring microbes is stimulated by injecting 98 percent pure oxygen to enhance in situ biological degradation of organic contaminants. Nutrients or other additives may be used to encourage the natural biodegradation process.	Technology proven for site contaminants and is most effective for dissolved phase groundwater and low to moderate level soil contamination. However, the technology alone does not address the free product at the site. Site-specific ACLs would be achieved if implemented with a product removal system.	Equipment readily available, applicable to small site. Bioremediation process may require continuous monitoring and maintenance to prevent plugging of injection wells by microbial growth or mineral precipitation. Needs to be used in conjunction with a free product removal system, which is readily available.	Moderate; Fort Stewart owns two oxygen injection systems, but implementation would be dependent upon availability of one of the systems. Costs increase with the addition of a free product removal system.
Enhanced Bioremediation (PHOSter® II)	Similar to pure oxygen injection, the PHOSter® II technology enhances natural attenuation through injection of vapor-phase phosphorous, nitrogen, and air. In soils, enhanced Bioremediation using air/nutrient injection is referred to as "bioventing."	PHOSter® II is an innovative technology that has been demonstrated at other sites to be effective for fuels and related BTEX components. Technical performance is highly uncertain due to limited full-scale implementation. However, the technology alone does not address the free product at the site. Site-specific ACLs would be achieved if implemented with a product removal system.	Equipment readily available and applicable to small sites. Because this technology is innovative and relatively new, there is a relatively high uncertainty regarding the radius of influence and the treatment time required. Longer-term operations may require monitoring to prevent plugging of injection wells by microbial growth or mineral precipitation.	Moderate; similar to enhanced bioremediation using pure oxygen injections; costs dependent on required treatment time. Costs increase with the addition of a free product removal system.
Enhanced Product Recovery	Enhanced product recovery is the process of injecting air into the vadose zone outside of the product plume and pulling a vacuum in recovery wells to create a gradient promote product movement toward the recovery wells	Technology is a proven form of promoting free product removal. However, it must be used in conjunction with other technologies to achieve the site-specific ATLs and ACLs in soil and groundwater.	Equipment readily available; however, the system needs to be used in conjunction with a remediation system that addresses soil and groundwater contamination.	Moderate; costs are dependent on the size of the free product plume and the treatment time.

Table 18. Evaluation of Corrective Action Technologies (continued)

Action/ Technology	Description	Effectiveness	Implementability	Costs
Soil Vapor Extraction/Air Sparging /Groundwater Extraction	Soil vapor extraction is a high flow rate system to pull air through the soil pores and volatilize BTEX compounds. It also increases aerobic biological degredation in the soil. Groundwater extraction removes dissolved phase contamination, speeds up the flushing process, and exposes more soils to SVE. Air sparging involves injecting air under pressure into the groundwater to volatilize groundwater contaminants and to promote biodegradation by increasing dissolved oxygen concentrations. Volatilized vapors migrate into the vadose zone where they can be extracted via the SVE system.	The effectiveness of each of these technologies has been demonstrated. They remove contaminants by both physical and biological processes. When the three technologies are deployed simultaneously, site cleanup is relatively quick and predictable Site-specific ATLs and ACLs can be achieved in 12 to 24 months	Equipment readily available. Compressors and treatment system components would need to be operated for approximately one year. Once major mass removal is accomplished, sparging system can be operated at low flow to continue biological degradation. Approximately 20 SVE, 10 sparge, and 4 groundwater extraction wells would have to be installed. Monitoring and maintenance of collection, distribution, and treatment systems would be required.	Moderate to moderate/high; more capital equipment costs than other options, but shorter operational life. Costs are dependent on off gas treatment for the SVE unit.
Six-Phase Soil Heating	This innovative technology utilizes electric current to heat the groundwater and soil pore moisture to the boiling point. The volatized compounds are collected via a SVE system.	This technology provides rapid, uniform heating to the interval specified in the vadose and saturated zones, thus targeting the area of soil, groundwater, and free product. Light non-aqueous phase liquids are cleaned up by smear zone heating. Steam is produced in-situ, which drives the contaminants toward the SVE well within each hexagon. Site-specific ATLs and ACLs can be achieved in 6 to 12 months with removal of the free product.	It requires the installation of subsurface electrical probes as well as a SVE system. The three-phase power that supplied the former pumphouse is available for the operation of this system. Approximately 20 hexagons, which include 6 electrodes and 1 SVE well, would have to be installed.	Moderate to high; more capital equipment costs than other options, but shorter operational life.

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APPENDIX III

WATER RESOURCES SURVEY DOCUMENTATION

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WATER RESOURCES SURVEY DOCUMENTATION

1.0 LOCAL WATER RESOURCES

As required by the GA EPD UST CAP-Part A Guidance (GA EPD 1998b), a water resource survey documenting information for public and non-public water supply wells, surface water bodies, underground utilities, and potential receptors was conducted for the Former Pumphouse #2 site. The information presented in this section provides the supporting documentation for Section II.B.1 of the CAP-Part B Report.

1.1 WATER SUPPLY WELL SURVEY

The water supply well survey was conducted using the following GA EPD guidelines/requirements:

- HAAF is located in an area of average or higher groundwater pollution susceptibility (GA EPD 1976).
- Locate all public supply wells, as defined by the GA EPD, that exist within 2 miles of the investigation sites.
- Locate all non-public supply wells that exist within 0.5 miles of the investigation sites.
- Locate all supply wells nearest the investigation sites.
- Locate all wells downgradient of the investigation sites.

The required survey was accomplished by obtaining information for the Fort Stewart DPW and the City of Savannah Bureau of Water Operations, performing a field survey, obtaining a U.S. Environmental Protection Agency site map displaying Public Water Supply for HAAF, and conducting a U.S. Geological Survey database search. A summary of the information obtained from the survey is provided in the following sections.

1.1.1 Fort Stewart Directorate of Public Works Survey Summary

According to the DPW, nine water supply wells are located within the confines of the HAAF area. These wells have the potential to provide up to 3890 gpm of water to occupants of the HAAF installation. The Fort Stewart DPW was unable to provide documentation listing the companies responsible for well installation and drillers' logs showing as-built information and subsurface geologic data. The DPW provided well locations, pump rates, treatment methods, casing depths, and total depths for three of the nine wells located within three miles of the subject site (Table III-A). However, documentation of subsurface geology based on HAAF drill logs remains extremely limited. Therefore, other references containing deep-well information were used to document the subsurface geology and aquifer characteristics beneath the HAAF area.

Wells 1, 2, and 3 are located within a two mile radius of the Former Pumphouse #2 site. Wells 1 and 2 are both public water supply wells located in the cantonment area of HAAF, and constitute the main water supply system at the HAAF installation. Well 1, located at Building 711 on the corner of Moore Road and Douglas Street, is a 12-inch-diameter well with a 100-hp turbine pump serving a 100,000-gallon elevated storage tank (Tank 1) through 10-inch lines. Water from Well 1 is injected with hydrofluosilic acid and chlorine gas solution at the well house. Well 2, located at Building 1205 on the corner of Neal Street and Strachan Road, is a 12-inch-diameter well with a 100-hp turbine pump serving a 200,000-gallon elevated tank (Tank 2) through 10-inch lines. Water from Well 2 is also injected with hydrofluosilic acid and chlorine gas solution at the well house. Wells 1 and 2 provide water to a 500,000-gallon elevated storage tank (Tank 3) located on Middleground Road behind Noncommissioned Officer family housing. This tank provides potable water to 694 service connections, which are used by an average of at least 5,000 individuals year-round.

Well 3, is a public supply well located outside the cantonment area of HAAF. Well 3, located at Building 8455, is a 4.0-inch-diameter well with a 1.0-hp electric submersible pump serving a 1,000-gallon hydropneumatic storage tank through 1.5-inch galvanized steel lines. Water from Well 3 is treated with calcium hypochlorite solution and is consumed by approximately 25 people during daytime hours, year-round.

Pump rates, casing depths, bore depths, treatment methods, and storage tank information for Wells 1, 2, and 3 are provided in Table III-A.

1.1.2 City of Savannah Bureau of Water Operations Survey Summary

Four City of Savannah water supply wells are located outside the boundary of HAAF, within two miles of the Former Pumphouse #2 site. The closest of these wells is Well 15, which is located 1.5 miles south of the site. Data concerning casing depths, borehole depths, casing sizes, and capacities are listed in Table III-B. The City of Savannah Bureau of Water Operations was unable to provide drilling logs or as-built well information.

1.2 SURFACE WATER BODIES

Surface water(s) in the state of Georgia shall mean any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs producing 100,000 gallons per day, and all other bodies of surface water, natural or artificial, lying within or forming a part of the boundaries of the State, which are not entirely confined and retained completely upon the property of a single individual, partnership, or corporation (GA EPD 1998a). The surface water body survey was conducted using the following GA EPD guidelines/requirements:

- surface water bodies that exist within one mile of the investigation sites,
- all surface water bodies nearest the investigation sites if these bodies lie outside the one-mile radius of concern,
- all surface water bodies downgradient of the investigation sites, and
- the storm and sanitary sewers adjacent to investigation sites.

The locations of surface water bodies at HAAF were obtained from USGS topographic maps, and from maps provided by the DPW. Storm and sanitary sewer location maps, storm sewer invert elevations, and storm sewer and culvert construction details were provided by the DPW.

1.3 POTENTIAL RECEPTOR SURVEY SUMMARY OF THE FORMER PUMPHOUSE #2 SITE

Metcalf & Eddy conducted a field potential receptor survey for the Former Pumphouse #2 site. The site and adjacent areas were surveyed for locations of surface water bodies, utility lines, and basements. Basements do not exist in the buildings adjacent to the site. Additional information, provided by the FS DPW, was used to determine the location of the nearest public supply wells and downgradient surface water bodies not located during the field survey.

1.3.1 Water Supply Wells Near the Former Pumphouse #2 Site

The following information is presented to provide supplemental information to Section II.B.1 of the CAP-Part B Report and provides detailed information relating to public and non-public water supply wells located two miles and one-half mile respectively from the Former Pumphouse #2 site.

- Well 1, located on the corner of Moore Road and Douglas Street, at Building 711, is located approximately 5,700 feet north (upgradient) of the Former Pumphouse #2 site.

- Well 2, located at Building 1205 on the corner of Neal Street and Strachan Road, is located approximately 3,600 feet northeast (upgradient) of the Former Pumphouse #2 site.

- Well 3, located at Building 8455, is approximately 6,700 feet southwest (downgradient) of the Former Pumphouse #2 site.

Therefore, the Former Pumphouse #2 site is classified as being located greater than 500 feet to these withdrawal points. Based on the estimated nature and extent of petroleum-related groundwater contamination at the site, there is no indication that Wells 1, 2, or 3 have been impacted. Therefore, collection and analysis of groundwater samples from Wells 1, 2, or 3 is not recommended.

1.3.2 Surface Water Bodies Near the Former Pumphouse #2 Site

A man-made drainage ditch is located approximately 160 feet southeast and south of the Former Pumphouse #2 site. The man-made surface water drainage feature flows west toward Lamar Canal, which is located approximately 7,000 feet west of the Former Pumphouse #2 site. The surface water then flows to the southwest until it reaches Springfield Canal, which eventually joins the Little Ogeechee River more than 3 miles downstream of the site. Because of the ditch 160 feet southeast of the Former Pumphouse #2 site, the site is classified as being less than 500 feet to a downgradient surface water body.

1.3.3 Underground Utilities at the Former Pumphouse #2 Site

There are numerous underground water, electrical, and abandoned fuel lines that connect the former fuel pits located at the edge of the taxiway north of the former tank pits. These underground lines are located upgradient of the area of contamination around the former tank pits and are located within the area of contamination near Fuel Pit 2E. The invert depth of the former fuel transfer line in the vicinity of Fuel Pit 2E is approximately 5.8 feet BGS. There are two wells located in the vicinity of Fuel Pit 2E, and in November 1999, the depths to groundwater in these wells were 7.12 feet in P2-MW10 and 6.87 feet in P2-MW25. Thus, the invert depth of the former fuel transfer line is located approximately 1.0 feet above the water table. The water and electrical lines run adjacent to the former fuel transfer line. It is estimated that the invert depths of these utilities are no more than 5 feet BGS.

Table III-A. Water Supply Well Information Provided by the Fort Stewart DPW

Building	Well ID	Year Drilled	Bore Depth	Casing Depth	Pump Rate (gpm)	Number of Service Connections	Population	Public or Non-Public Supply
711	1	1941	550	250	1300	525	7500	Public
1205	2	1941	600	250	1300	525	7500	Public
8455	3	1951	360	40	30	2	25	Public
8581	4a	1976	300	92	80	10	15	Public

Table III-B. Water Supply Information Provided by the City of Savannah Bureau of Water Operations

Well ID	Year Drilled	Bore Depth	Casing Depth	Pump Rate (gpm)	Number of Service Connections	Population	Public or Non-Public Supply
6	TBD	750	1240	1500	TBD	TBD	Public
13	TBD	TBD	TBD	2200	TBD	TBD	Public
14	TBD	800	338	571	TBD	TBD	Public
15	TBD	414	252	1000	TBD	TBD	Public
23	TBD	639	320	1056	TBD	TBD	Public
25	TBD	540	287	1120	TBD	TBD	Public
27	TBD	550	321	1468	TBD	TBD	Public

NOTE: TBD = to be determined

APPENDIX IV

SOIL BORING LOGS

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Hole No. MW04

DRILLING LOG	DIVISION SAM	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: Pumphouse 1, 2, 6
2. LOCATION (Coordinates or Station): HAAF
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): MW04
5. NAME OF DRILLER: M. Gibble
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 17.0'
8. DEPTH DRILLED INTO ROCK: 0
9. TOTAL DEPTH OF HOLE: 17.0'
10. SIZE AND TYPE OF BIT: 6¼" ID HSA
11. DATUM FOR ELEVATION SHOWN (MSL or MSL): MSC
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: 27.85 (12/9/96)
16. DATE HOLE: STARTED 11/19/96; COMPLETED 11/19/96
17. ELEVATION TOP OF HOLE: 38.07 TOC
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: D. Humphris

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0	0.8 SW/D	SAND: fine-med; Gy Br 10YR 5/2, dry, silty 5%, well sorted, tr. gravel on top (SW)	100	1	BLOWS / Hand auger / OVA, ppm: BZ-0, HS-32
	2		: as above, Lt Gy 7/2, tr. glauconite to sky gld Br. 4/4, dry, v. loose-firm, well sorted, silty 10% (SW/SM)	100	2	4-5-10-11 Lab / BZ-0, HS-35
	4		: as above, to a Pale Br 10YR 6/3, dry loose, well sorted, tr. glauconite, silty 5%, 15% at top (SM/SW)	75	3	10-7-6-8 / BZ-0, HS-5
	6		Cuttings mix of above	—	—	Auger
	8		: Lt. Gy 7/1, well sorted, tr. glauconite, firm-v. firm, dry, massive. (clean sand) (SW)	46	4	3" spoon 14-14-14-23 / BZ-0, HS-4
	10		: Cuttings - mix of above	—	—	Auger; ≈ initial wet cuttings ≈ in well at install
	12					3" spoon
	14		: as above, wet, firm-v. firm. (clean sand) (SW)	71	5	22-14-20-25 odor Lab + tech / BZ-0, HS-40
	16		Cuttings as above	—	—	Auger
	18		E.O.B. @ 17.0'			
	20					

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 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. | PROJECT | HOLE NO.

Hole No. MW05

DRILLING LOG	DIVISION SAV	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: Pumphouse 1, 2, 6
2. LOCATION (Coordinates or Station): SAV 6A
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): MW05
5. NAME OF DRILLER: M. Gribble
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 18.0'
8. DEPTH DRILLED INTO ROCK: 0
9. TOTAL DEPTH OF HOLE: 18.0'
10. SIZE AND TYPE OF BIT: 6¼" ID HSA
11. DATUM FOR ELEVATION SHOWN (MSL or MLW): 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: 26.99 (12/9/96)
16. DATE HOLE: STARTED 11/19/96; COMPLETED 11/19/96
17. ELEVATION TOP OF HOLE: 38.26
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: D. Humphus

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	OVA, ppm
	2		Sand; fine-med, Yel Br 10YR5/4, well sorted silty 5%, tr. glauconite, dry. (SW)	100	1	BLOWS Hand auger	BZ-0 HS-0
	4		as above, loose-firm (SW)	92	2	8-11-11-14	BZ-0 HS-18
	6		as above, to Lt Gy 10YR 7/1. (clean sand) (SW)	75	3	4-8-14-14	BZ-0 HS-35
	8		Cuttings mix of above	—	Auger		
	10		as above to Lt. Br Gy 10YR 6/2, damp. silty 5%, well sorted, tr. glauconite, uniform (SW)	80	4	5-5-6-10 1ab auger	BZ-0 HS-1000+
	12		Cuttings as above	—	Auger	Initial wet cuttings ▽ in well at install	
	14		: as above: Gy-6/1, wet (Clean Sand) (SW)	80	5	7-10-14-20 1ab & Geotech	BZ-0 HS-180
	16		as above	—	Auger		
	18		E.O.B. @ 18.0' bgs				
	20						

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 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. | PROJECT | HOLE NO.

Hole No. MW06

DRILLING LOG	DIVISION SAV	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: Pumphouses 1, 2, 6
2. LOCATION (Coordinates or Station): SAV GA
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): MW06
5. NAME OF DRILLER: M. Gribble
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 18.0'
8. DEPTH DRILLED INTO ROCK: 0
9. TOTAL DEPTH OF HOLE: 18.0'
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: 26.79 (12/9/96)
16. DATE HOLE: STARTED 11/19/96; COMPLETED 11/19/96
17. ELEVATION TOP OF HOLE: 38.18 TOC
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Humphs

ELEVATION a	DEPTH b	LEGEND	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
	2		SAND: fine-med; Pale Br 10YR 6/3, well sorted, silty 5%, dry (SW)	100	1	BLOWS: Hand auger; OVA, ppm: BZ - 0, HS - 0.1
	4		: as above, loose-firm, dry, grading to white 8/1, tr. glauconite (SW)	83	2	8-8-7-14; BZ - 0, HS - 0.1
	6		as above; loose-firm, dry, grading to Lt. Br by 10YR 6/2 well sorted (SW)	83	3	5-7-8-16; BZ = 0, HS = 0
	8		Cuttings mix as above	—	Auger	
	10		as above: uniform, wet at bottom, v. loose-firm (SW) ← wet	67	4	3-8-14-18 Lab + bedrock; BZ = 0, HS = 1000+; ≠ initial wet sample; ≠ in well at install
	12		Cuttings mix as above	—	Auger	
	14		: as above, darker gray color due to wetness, well sorted, tr. glauconite, silty 5% (SW)	58	5	2-8-19-27 Lab; BZ = 0, HS = 120
	16		Cuttings as above	—	Auger	
	18		T.D. B. @ 18.0' bgs			
	20					

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 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

Hole No. MW10

DRILLING LOG	DIVISION SAV.	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS
1. PROJECT Pumphouse 1, 2, 6		10. SIZE AND TYPE OF BIT 6 1/4" ID HSA	
2. LOCATION (Coordinates or Station) SAV 6A		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)	MW10	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5	UNDISTURBED —
5. NAME OF DRILLER M. Gribble		14. TOTAL NUMBER CORE BOXES —	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER 31.54 (12/9/96)	
7. THICKNESS OF OVERBURDEN 16.0'		16. DATE HOLE STARTED 11/20/96	COMPLETED 11/20/96
8. DEPTH DRILLED INTO ROCK 0		17. ELEVATION TOP OF HOLE 39.40 TOC	
9. TOTAL DEPTH OF HOLE 16.0'		18. TOTAL CORE RECOVERY FOR BORING — %	
		19. SIGNATURE OF INSPECTOR D. Humphries	

ELEVATION a	DEPTH b	LEGEND VI	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
			CONCRETE: 15"	NA	1	BLOWS / Hand Auger / odor / (VA Form) B2-0 HS-140
	2		SAND: fine-med, well sorted, silty 10%, dk YellBr 10YR 4/4, dry. (SM)			
			as above, loose-firm, dry			5-9-11-13 B2-0 HS-90
	4		white-sl, tr. glaucanite, silt 5% well sorted (beach sand) (SW)	75	2	
			as above, firm-v.firm. uniform dry. tr. glaucanite + mica. (SW)	67	3	15-21-23-23 B2-0 HS-82
	6		Cutting mix of above	—	Auger	
	8		as above: LtBr by 2.5Y 6/3, well sorted, wet, silty 5%, tr. glaucanite v. loose-firm. (SW)	90	4	▽ in well at install / 4-7-11-18 ▽ initial w.t. sample / Lab Geotech B2-0 HS-71006
	10		Cuttings mix of above	—	Auger	
	12					
	14		as above, gy 2.5Y 5/1, 10% glaucanite wet, well sorted, uniform, loose-v.firm. (many samples) (SW)	67	5	7-18-19-25 Lab B2-0 HS-150
	16		Cuttings as above	—	Auger	
			E.O.B. @ 16.0' bgs			
	18					
	20					

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 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. | PROJECT | HOLE NO.

Hole No. MW 25

DRILLING LOG

DIVISION: SAN DIST
INSTALLATION: HAAF
SHEET 1 OF 1 SHEETS

1. PROJECT: Pumphouse 1, 2, 6 CAP B
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): MW 25
5. NAME OF DRILLER: K. Durham
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 15.5'
8. DEPTH DRILLED INTO ROCK: 0
9. TOTAL DEPTH OF HOLE: 15.5'
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 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 31.15'
16. DATE HOLE: STARTED 5/8/97; COMPLETED 5/8/97
17. ELEVATION TOP OF HOLE: 39.19' TOC
18. TOTAL CORE RECOVERY FOR BORING: —
19. SIGNATURE OF INSPECTOR: D. Henry

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
			1'+ Asphalt/concrete	hand auger	1	BLOWS: NA; OVA, ppm: BZ-0, HS-500
	2		SAND: fine-med, 10YR 5/4, well sorted, silty 5%, HC odor, (SW)			
			: As above Lt. Br Gy 10YR 6/2 (SW)	hand auger	2	NA Lab; BZ-0, HS-1000+
	4		: white 10YR 8/1, well sorted, tr heavy mins, dry, loose-firm, silty 5%. HC odor (SW)	75	3	6-8-15-13; BZ-2, HS-480
	6		As above.	—	↑ Auger ↓	
	8		: as above, 10YR 6/1 Gray. loose-firm. wet, HC odor. uniform, tr. heavy mins, (SW)	67	4	5-10-16-20 ▽ initial wet sample Lab; BZ-0, HS-1000+
	10		Cuttings as above	—	↑ Auger ↓	
	12		: as above, uniform. loose-firm tr. heavy mins. + mica. (SW)	54	5	6-10-19-20 Geotech; BZ-0
	14		E.O.B. @ 15.5' bgs		Auger	
	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).

ENG FORM ... | PROJECT | HOLE NO.

Hole No. MW26

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

1. PROJECT: Pumphouse 1,2,6 CAP B
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): MW26
5. NAME OF DRILLER: K. Durham
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 15.5'
8. DEPTH DRILLED INTO ROCK: Ø
9. TOTAL DEPTH OF HOLE: 15.5'
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 1
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 31.18'
16. DATE HOLE: STARTED 5/8/97; COMPLETED 5/8/97
17. ELEVATION TOP OF HOLE: 38.48' TOC
18. TOTAL CORE RECOVERY FOR BORING: — %
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
	2		SAND: fine med; dk GY 10YR 4/1 to Y RED Br 5/6 well sorted, silty 5%, tr. heavy mins. dry (SW)	hand auger	1	BLOWS: NA; OVA, ppm: BZ- 0, HS- 0
	4		: as above, v. Pale Br 7/4 to dk Yel Br - 4/6 dry (SW)	hand auger	2	NA; BZ- 0, HS- 0
	6		as above, Br Yel 10YR 6/6, well sorted, silty 5%, tr. heavy mins, loose. moist. (SW)	92	3	6-7-9-7; Lab; BZ- 0, HS- 0.5
	8		Cuttings as above, moist-wet	—	Auger ↑↓	Push Shelby Tube 6-8'; ∑ 1Hr well at Install; initial wet Sample
	10		Yel Br 10YR 5/4, wet, well sorted silty 5%, tr. mica + heavy mins, v. loose-firm. (SW)	67	4	3-5-9-14; ∑ Lab; BZ- 0, HS- 2.5
	12		Cuttings as above.	—	Auger ↑↓	
	14		: Lt Gy 10YR 7/1, well sorted, tr. heavy mins in bands, silty 5%, uniform v. loose-firm. (SW)	50	5	3-5-14-16; geotech; BZ-0
	16		Auger			
	18		E.O.B @ 15.5' logs			

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 ... | PROJECT | HOLE NO.

Hole No. MW 28

DRILLING LOG	DIVISION: SAN DIST	INSTALLATION: HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: Pumphouse 1,2,6 CAP B	10. SIZE AND TYPE OF BIT: 6 1/4" ID HSA
2. LOCATION (Coordinates or Station)	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 28	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5; UNDISTURBED Ø
5. NAME OF DRILLER: K. Durham	14. TOTAL NUMBER CORE BOXES: —
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER: 26.98'
7. THICKNESS OF OVERBURDEN: 18.5'	16. DATE HOLE: STARTED 5/8/97; COMPLETED 5/8/97
8. DEPTH DRILLED INTO ROCK: Ø	17. ELEVATION TOP OF HOLE: 39.28' TOC
9. TOTAL DEPTH OF HOLE: 18.5'	18. TOTAL CORE RECOVERY FOR BORING: — %
	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		SAND - fine-med; Yel Br 10YR 5/4, well sorted, silty 5-10%, tr. heavy mins. dry. (SW)	hand auger	1	BLOWS: NA; OVA, ppm: BZ-0, HS-0
	2		as above v. pale Br 10YR 7/3 silty 5%, (SW)	hand auger	2	NA; BZ-0, HS-0
	4		as above, loose, well sorted, tr mica + heavy mins. dry. silty 5%. Br. Yel 10YR 6/6 / Lt. Br 10YR 7/6 (SW)	100	3	5-5-6-9; BZ-0, HS-0
	6		Cuttings mix of above	—	Auger	
	8		: as above; v. pale Br 10YR 7/4, v. loose - firm, dry, well sorted, silty 5%, tr. heavy mins. (SW)	58	4	3-6-10-15 Lab.; BZ-0, HS-0
	10		Cuttings mix of above	—	Auger	
	12					▽ in well at install
	14		: Lt. Br 6Y 10YR 6/2, loose, firm, wet (SW)	67	5	7-12-15-20; ▽ initial wet sample BZ-0, HS-34; Lab + geotech
	16		Cuttings as above, wet	—	Auger	
	18					
	20		E.O.B. @ 18.5'			

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 ... | PROJECT | HOLE NO.

Hole No. MW29

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

1. PROJECT: Pumphouse 1,2,6 CAPB
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): MW29
5. NAME OF DRILLER: K. Dunnigan
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 20.0'
8. DEPTH DRILLED INTO ROCK: Ø
9. TOTAL DEPTH OF HOLE: 20.0'
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 6; UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 26.56'
16. DATE HOLE: STARTED 5/8/97; COMPLETED 5/8/97
17. ELEVATION TOP OF HOLE: 40.24' TOC
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Humphus

ELEVATION a	DEPTH b	LEGEND (11/c14)	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
	2		SAND: fine - med, Lt. Gy 10YR 7/2, dry silty 5%, tr. heavy mins. well sorted v. dk Gy-3/1 (SW)	hand auger	1	BLOWS: NA; OVA. ppm: BZ- 0, HS- 0
	4		: as above; YelBr -5Y4+to Lt Gy-7/1 well sorted, tr. heavy mins. dry. (SW)	hand auger	2	NA; BZ- 0, HS- 0
	6		; white 10YR 8/1 loose- from, (SW)	71	3	6-7-10-11; BZ- HS- 0
	8		Cuttings mix of above	—	Auger	
	10		: as above, Pale Br 10YR 6/3, loose dry. SW	67	4	5-7-7-7; BZ-0, HS- 2
	12		Cuttings mix of above	—	Auger	
	14		as above: wet, uniform (SW)	67	5	3" spoon 3-8-12-14 ▽ initial wet sample for BZ-0, ▽ in well at install for Geotech + Lab HS-98
	16		Cuttings as above.	—	Auger	
	18		as above; loose-U. from. (SW)	63	6	5-10-17-26; BZ-0
	20		E.O.B @ 20.0'			

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 ... | PROJECT | HOLE NO.

Hole No. MW30

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

1. PROJECT: Pumphouse 1,2,6 CAPB
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): MW30
5. NAME OF DRILLER: K. Durham
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 20.0'
8. DEPTH DRILLED INTO ROCK: Ø
9. TOTAL DEPTH OF HOLE: 20.0'
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 6; UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 26.02'
16. DATE HOLE: STARTED 5/9/97; COMPLETED 5/9/97
17. ELEVATION TOP OF HOLE: 39.30' TOC
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Humphus

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; dk GY Br 10YR 4/2, well sorted silty 10-20%, tr. heavy mins. dry (SM)	hand auger	1	BLOWS: NA; OVA, ppm: BZ- 0, HS- 1
	2–4		as above; lt. GY 10YR 7/2, silty 5%, well sorted, tr heavy mins. dry. (SW)	hand auger	2	NA; BZ- 0, HS- 0
	4–6		as above v. loose; v. dk Br 10YR 2/2 - well sorted, silty 5-10% (SW)	100	3	4-4-4-3; BZ- 0, HS- 0
	6–8		Cuttings mix of above	—	Auger	
	8–10		as above well sorted (SM); v. dk Br 10YR 2/2 & dk red Br - 4/4 silty 10-15% v. loose-firm, dry. (SW); v. Pale Br 10YR 6/2 - silty 5%	75	4	3-7-12-15 Lab; BZ- 0, HS- 0
	10–12		Cuttings as above; wet	—	Auger	
	12–14		as above GY 10YR 6/1, wet, silty 5% tr heavy mins. v loose-firm. (SW)	63	5	2-4-14-17 ▼ initial wet sample BZ- 0; ▼ level of metal lab; HS- 50
	14–16		Cuttings as above	—	Auger	
	16–18		as above, uniform, loose-firm (SW)	50	6	5-11-17-20 bedrock; BZ-
	18–20		E.O.B. @ 20.0' bgs			
	20–22					

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 [illegible] | PROJECT | HOLE NO.

Hole No. MW31

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

1. PROJECT: Pumphouse 1,2,6 CAP B
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): MW31
5. NAME OF DRILLER: K. Durham
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 19.0'
8. DEPTH DRILLED INTO ROCK: Ø
9. TOTAL DEPTH OF HOLE: 19.0'
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 Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 26.47
16. DATE HOLE: STARTED 5/1/97; COMPLETED 5/9/97
17. ELEVATION TOP OF HOLE: 37.16' TOC
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Hamp

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	
	2		SAND: fine-med; v. dk Gy Br 10YR 3/2, well sorted, silty 5%-10%. tr. heavy mins. Br-5/3. dry. (SW)	hand auger	1	BLOWS: NA	OVA, ppm: BZ-0 HS-0
	4		: as above, silty 5% (SW)	hand auger	2	NA	BZ-0 HS-0
	6		: as above, white 10YR 8/1, loose-firm well sorted, silty 5%, tr. heavy mins. Br 10YR 2/3 (SW)	83	3	8-12-12-11 ~~D&H~~	BZ-0 HS-1.5
	8		Cuttings as above	—	Auger		
	10		: as above; Pale Br 10YR 6/3, well sorted, v. loose-v. firm, moist, silty 5% tr. heavy mins. (SW)	63	4	3" spoon 5-11-22-30 Lab	BZ-0 HS-0.5
	12		Cuttings as above wet HC odor	—	Auger	2 in well at install	
	14		: as above, Gy 10YR 6/1, well sorted silty 5% (SW)	63	5	5-7-13-21 Lab Grotech	BZ-0 HS-80
	16		Cuttings as above	—	Auger		
	18						
	20		E.O.B. @ 19.0				

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 ____ | PROJECT | HOLE NO.

Hole No. MW32

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

1. PROJECT: Pumphouse 1,2,6 CAP B
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): MW32
5. NAME OF DRILLER: K. Durham
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 35.0'
8. DEPTH DRILLED INTO ROCK: Ø
9. TOTAL DEPTH OF HOLE: 35.0'
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 9; UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 27.36'
16. DATE HOLE: STARTED 5/13/97; COMPLETED 5/13/97
17. ELEVATION TOP OF HOLE: 40.13' TOC
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
	2		SAND: fine-med; Pale Br 10YR 6/3 to Lt Gy-7/1 well sorted, silty 5%, dry. tr. heavy mins. (SW)	hand auger	1	BLOWS: NA; OVA, ppm: BZ-0, HS-0
	4		Blk as above, silt 20%, Br 10YR 5/3. dry, well sorted, Yell Br 10YR 5/4 (SW)	hand auger	2	NA; BZ-0, HS-0
	6		as above - grading to Lt. Gy 10YR 7/1, well sorted, dry, silty 5%, tr. heavy mins - clean sand (SW) loose	75	3	7-7-10-9 Lab; BZ-0, HS-1
	8		Cuttings as above	—	Auger	
	10		: as above, Lt olive Br 2.5Y 5/3, well sorted, v loose-loose, silty 5%, moist-wet. (SW)	60	4	3-3-5-5 Lab; BZ-0, HS-2; Initial wet sample
	12		Cuttings as above	—	Auger	
	14		: Olive Gy 5Y 5/2. loose-firm, well sorted, silty 5%, tr. mica-heavy mins uniform. (SW)	75	5	6-7-14-18; BZ-0
	16		Cuttings as above - Heodor	—	Auger	
	18		: as above, Gy 5Y 6/1, loose-v. firm, well sorted, silty 5%, tr. heavy mins. (SW)	67	6	7-11-26-25; BZ-0
	20		Cuttings as above	—	Auger	
	22		as above, uniform, v. loose-loose tr. mica + heavy mins. (SW)	100	7	2-8-8-8; BZ-0
	24				Auger	
	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 ... | PROJECT | HOLE NO.

DRILLING LOG (Cont Sheet) | ELEVATION TOP OF HOLE | **Hole No.** MW32

PROJECT: Pumphouse 1, 2, 6 | INSTALLATION: HAAF | SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY 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		: as above, v. loose-loose tr mica + heavy mins. - Lt. Yellow 2.5Y 6/3; SI/Hy 5-10% (SW)	100	8	6-3-7-7 BZ=0
	30		Cuttings as above	—	↑ Auger ↓	
	32					
	34		: as above - Bright Yellow 10YR 6/6. tr. clay microdominal, tr mica + heavy mins. v. loose-loose. wellsorted - fine-coarse (SW)	33	9	1-2-5-7 BZ=0 Geotech
	36		E.O.B. @ 35.0' 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 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. | PROJECT | HOLE NO.

Hole No. MW 37

DRILLING LOG	DIVISION SAN	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS
1. PROJECT	Pumphouses #1 & #2	10. SIZE AND TYPE OF BIT	6¼" I.D. HSA
2. LOCATION (Coordinates or Station)	PH #2	11. DATUM FOR ELEVATION SHOWN (TBM or 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 37	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED – / UNDISTURBED –
5. NAME OF DRILLER	M. Gribble	14. TOTAL NUMBER CORE BOXES	–
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER	
		16. DATE HOLE	STARTED 9/28/99 / COMPLETED 9/28/99
7. THICKNESS OF OVERBURDEN	19.0'	17. ELEVATION TOP OF HOLE	
8. DEPTH DRILLED INTO ROCK	–	18. TOTAL CORE RECOVERY FOR BORING	– %
9. TOTAL DEPTH OF HOLE	19.0' bgs	19. SIGNATURE OF INSPECTOR	D. Rowell

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		SAND - silty 5% v. fine, well sorted, color varies w/depth. (SW)	AUGER	No. SAMPLES	∇ 14.2' bgs
	20					EOB @ 19' bgs

Hole No. MW 38

DRILLING LOG	DIVISION SAV	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT	Pumphouses #1 + #2
2. LOCATION (Coordinates or Station)	PH #2
3. DRILLING AGENCY	PSI
4. HOLE NO. (As shown on drawing title and file number)	MW 38
5. NAME OF DRILLER	M. Gribble
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	21.0'
8. DEPTH DRILLED INTO ROCK	—
9. TOTAL DEPTH OF HOLE	21.0' bgs
10. SIZE AND TYPE OF BIT	6 1/4" I.D. HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	CME 75
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED — / UNDISTURBED —
14. TOTAL NUMBER CORE BOXES	—
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 9/28/99 / COMPLETED 9/28/99
17. ELEVATION TOP OF HOLE	
18. TOTAL CORE RECOVERY FOR BORING	— %
19. SIGNATURE OF INSPECTOR	D. Powell

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
	2, 4, 6, 8, 10, 12, 14, 16, 18, 20		SAND - silt 0-5% v. fine grained, well sorted, color varies w/depth. (SW)	AUGER	NO SAMPLES	▽ 15' bgs EOB @ 21.0' bgs

Hole No. MW 39

DRILLING LOG	DIVISION SAN	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS
1. PROJECT Pumphouses #1 + #2		10. SIZE AND TYPE OF BIT 6 1/4" I.D. HSA	
2. LOCATION (Coordinates or Station) PH #2		11. DATUM FOR ELEVATION SHOWN (TBM or 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 39		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED — UNDISTURBED
5. NAME OF DRILLER M. Gribble		14. TOTAL NUMBER CORE BOXES —	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER	
7. THICKNESS OF OVERBURDEN 20.0'		16. DATE HOLE STARTED 9/28/99	COMPLETED 9/28/99
8. DEPTH DRILLED INTO ROCK —		17. ELEVATION TOP OF HOLE	
9. TOTAL DEPTH OF HOLE 20.0' bgs		18. TOTAL CORE RECOVERY FOR BORING — %	
		19. SIGNATURE OF INSPECTOR D. Rowell	

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
	2		SAND - silty 0-5% v.d.ine, well sorted Color varies w/depth. (SW)	AUGER	NO SAMPLES	∇ 13.6' bgs
	4					
	6					
	8					
	10					
	12					
	14					
	16					
	18					
	20					EOB @ 20.0' bgs

Hole No. MW 41

DRILLING LOG	DIVISION SAV	INSTALLATION HAAF	SHEET 1 OF 2 SHEETS
1. PROJECT	Pump houses #1 + #2	10. SIZE AND TYPE OF BIT	4¼" ID HSA / 7⅞" roller cone
2. LOCATION (Coordinates or Station)	PH #2	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
3. DRILLING AGENCY	PSI	12. MANUFACTURER'S DESIGNATION OF DRILL	CME 75
4. HOLE NO. (As shown on drawing title and file number)	MW41	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED	25 / UNDISTURBED —
5. NAME OF DRILLER	M. Gribble	14. TOTAL NUMBER CORE BOXES	—
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER	
		16. DATE HOLE: STARTED	9/30/99
		COMPLETED	9/30/99
7. THICKNESS OF OVERBURDEN	50'	17. ELEVATION TOP OF HOLE	
8. DEPTH DRILLED INTO ROCK	—	18. TOTAL CORE RECOVERY FOR BORING	— %
9. TOTAL DEPTH OF HOLE	50' bgs	19. SIGNATURE OF INSPECTOR	D. Rowell

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	HNU OVA, ppm
	2		SAND - silt 0-5%, v. fine, moist well sorted, 7.5YR 5/8, strong brown, (SW)	65%	1	Blows / Time 4-7-7-10 0850	0
	4		SAND - silt 5%, v. fine, well sorted, white, 7.5YR 8/1, (SW)	50%	2	7-12-10-12 0855	0
	6		As above, pinkish gray 7.5YR 7/2	75%	3	10-10-11-11 0903	0
	8		As above	50%	4	5-6-7-10 0907	2
	10		As above pink 7.5YR 8/3	40%	5	7-10-14-14 0912	0
	12		As above, v. pale brown 10YR 8/2, wet	45%	6	10-21-39-25 lab 0920	75
	14		As above	48%	7	4-16-21-22 0825	84
	16		As above	65%	8	10-16-24-32 0933	110
	18		As above, gray, 10YR 6/1	88%	9	7-22-31-30 0940	14
	20		As above	50%	10	10-29-50/4" 0947	6
	22		As above, lt. gray, 10YR 7/2	67%	11	13-20-21-22 0954	1
	24		SAND - silt 0-5%, v. fine, well sorted, pale brown, 10YR 6/3	84%	12	6-9-9-9 1000	1.7
	26		As Above	52%	13	5-10-15-20 1005	1
	28		As Above	68%	14	8-10-12-14 1018	.4
	30		As Above, yellow, 10YR 7/6	88%	15	6-5-6-7 1023	1.3

DRILLING LOG (Cont Sheet) | ELEVATION TOP OF HOLE | Hole No. MW 41

PROJECT: Pumphouses #1 and #2 | INSTALLATION: HAAF - Savannah, GA | SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	30		SAND - Silty 0-5%, v. fine, yellow 10YR 7/6, well sorted to (SW) 31.2'. Thin clayey 10-15% 7.5YR 6/8, reddish yellow (SP)	98%	16	Blows / Time; HS OVA, ppm 6-10-10-11 1030
	32		SAND - Silty 5-10%, v. fine, yellow 10YR 7/6, well sorted (SP)	100%	17	1-2-1-1 1038
	34		As Above to 35.2'. Then yellow, 10YR 8/6, silt <5%	84%	18	6-7-11-12 1045
	36		As Above	73%	19	4-4-4-8 1055
	38		As Above to 38.8'. Then: SAND - Silty 0-5%, v. fine, well sorted gray 10YR 5/1	92%	20	1-1-3-3 1103
	40		As Above.	63%	21	2-5-7-7 1110
	42		As Above. Becoming clayey 25-30% at 44'	88%	22	5-4-3-3 1118
	44		As Above, sandy clay @ 45' (Y/N) Sand poorly sorted med-fine	60%	23	8-12-16-18 1127
	46		SAND - clayey 10-15%, v. fine well sorted, gray, 10YR 5/1.	60%	24	6-12-14-15 1137
	48		As Above to 49' SAND - Clayey 15-20% poorly sorted, coarse sand/gravel	66%	25	6-11-11-12 1150 TOB @ 50' bgs
	50			68% Total Rec.		

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 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. | PROJECT | HOLE NO.

Hole No. MW 43

DRILLING LOG	DIVISION SAV	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT	Pumphouses #1 & #2
2. LOCATION (Coordinates or Station)	PH #2
3. DRILLING AGENCY	PSI
4. HOLE NO. (As shown on drawing title and file number)	MW 43
5. NAME OF DRILLER	M Gribble
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	16.0'
8. DEPTH DRILLED INTO ROCK	—
9. TOTAL DEPTH OF HOLE	16.0' bgs
10. SIZE AND TYPE OF BIT	6¼" I.D. HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	CME 75
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED — / UNDISTURBED —
14. TOTAL NUMBER CORE BOXES	—
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 9/27/99 COMPLETED 9/27/99
17. ELEVATION TOP OF HOLE	
18. TOTAL CORE RECOVERY FOR BORING	— %
19. SIGNATURE OF INSPECTOR	D. Powell

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
	0–16		SAND - silty 0-5% v. fine, well sorted, Color varies w/depth	AUGER	NO Samples	≡ 8.3' bgs
	16					EOB @ 16.0' bgs

Hole No. SB09

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

1. PROJECT: Pump Houses 1, 2, & 6
2. LOCATION (Coordinates or Station): SAV. GA.
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): SB09
5. NAME OF DRILLER: K. Durham
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 12.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 12.0'
10. SIZE AND TYPE OF BIT: 4¼" I.D. HSA
11. DATUM FOR ELEVATION SHOWN (MSL or USL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: CME 75
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4; UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 10.2' BGS
16. DATE HOLE: STARTED 11-19-96; COMPLETED 11-19-96
17. ELEVATION TOP OF HOLE: 38.6'
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Rowell

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
	2		Sand, v. pale brown, 10YR7/4, v.fine, <5% silt, dry (SP)	100	1	Blows: 3-5-8-8; 1030. OVA, ppm: HS-1, BZ-0
	4		Sand, brownish yellow, 10YR6/8, v.fine, 5% silt, dry (SP)	50	2	5-8-8-8; 1035. HS-2, BZ-0
	6		Sand, lt. gray, 10YR7/2, v.fine, <5% silt, dry. (SP)	70	3	10-10-12-10; 1040 Lab. HS-510, BZ-0
	8		AS above	AUGER		
	10		Sand, lt. yellowish brown, 2.5YR6/3, v.fine, <5% silt, saturated. (SP)	70	4	7-12-14-14 ▽; 1045 Lab. HS->1000, BZ-0
	12		EOB @ 12.0' 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. SB 10

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

1. PROJECT	Pump Houses 1, 2, + 6	10. SIZE AND TYPE OF BIT	4¼" I.D. 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)	SB 10	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4 / UNDISTURBED Ø	
5. NAME OF DRILLER	K. Durham	14. TOTAL NUMBER CORE BOXES	—
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER	10.2' BGS
7. THICKNESS OF OVERBURDEN	12.0'	16. DATE HOLE: STARTED 11-19-96 / COMPLETED 11-19-96	
8. DEPTH DRILLED INTO ROCK	—	17. ELEVATION TOP OF HOLE	38.6'
9. TOTAL DEPTH OF HOLE	12.0'	18. TOTAL CORE RECOVERY FOR BORING	— %
		19. SIGNATURE OF INSPECTOR	D. Rowell

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
	2		Sand, brownish yellow, 10YR 6/6 v.fine, <5% silt, dry (SP)	90	1	Blows / OVA, ppm 2-4-12-B / HS - >1000 1100 / BZ - 0
	4		As Above. Odor (SP)	95	2	8-6-6-12 / HS - 760 1105 / BZ - 0
	6		Sand, v. pale brown, 10YR 7/3, v.fine, <5% silt, moist (SP)	60	3	12-12-9-9 / HS - >1000 1110 Lab / BZ - 0
	8		As Above	AUGER		
	10		Sand, white, 2.5YR 8/1, v.fine, <5% silt, saturated. (SP)	65	4	9-12-15-20 ▽ / HS - >1000 1120 Lab / BZ - 0
	12		EOB @ 12.0' 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. SB11

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

1. PROJECT	Pump Houses 1, 2, + 6
2. LOCATION (Coordinates or Station)	SAV. GA
3. DRILLING AGENCY	PSI
4. HOLE NO. (As shown on drawing title and file number)	SB 11
5. NAME OF DRILLER	K. Durham
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	12.0'
8. DEPTH DRILLED INTO ROCK	—
9. TOTAL DEPTH OF HOLE	12.0'
10. SIZE AND TYPE OF BIT	4¼" I.D. 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 4 / UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES	—
15. ELEVATION GROUND WATER	10.1' BGS
16. DATE HOLE	STARTED 11-19-96 / COMPLETED 11-19-96
17. ELEVATION TOP OF HOLE	38.3'
18. TOTAL CORE RECOVERY FOR BORING	— %
19. SIGNATURE OF INSPECTOR	D. Rowell

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
	2		Sand, dk. gray, 2.5YR 4/1, v fine, 15-20% silt, dry (SM)	85	1	Blows: 2-5-7-9; 1355; OVA, ppm: HS-1, BZ-0
	4		As Above (SM)	80	2	12-7-8-8; 1400; HS-5, BZ-0
	6		As Above, moist. (SM)	50	3	4-3-4-3; 1405 Lab; HS-8, BZ-0
	8		As Above	AUGER		
	10		Sand, gray, 2.5Y 5/1, v. fine, 5-10% silt, saturated (SM)	70	4	1-0-NO; ▽; 1410 Lab; HS-71000, BZ-0
	12		EOB @ 12.0' 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. SB12

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

1. PROJECT: Pump Houses 1, 2, +6
2. LOCATION (Coordinates or Station): SAV. GA
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): SB12
5. NAME OF DRILLER: K. Durham
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 12.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 12.0'
10. SIZE AND TYPE OF BIT: 4¼" I.D. 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 4 | UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 10.1' BGS
16. DATE HOLE: STARTED 11-19-96 | COMPLETED 11-19-96
17. ELEVATION TOP OF HOLE: 38.1'
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Rowell

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, yellowish brown, 10YR 5/4, v. fine, 5% silt, dry (SP)	80	1	Blows: 2-3-4-5 @ 1420 (lab); OVA, ppm: HS-46, BZ-0
	2–4		Sand, pale brown, 10YR 6/3, v. fine, <5% silt, dry (SP)	75	2	6-5-4-3 @ 1425; HS-6, BZ-0
	4–6		Sand, lt. brownish gray, 10YR 6/2, 5-10% silt, v. fine, moist. (SM)	80	3	4-10-11-9 (3" spoon) @ 1430; HS-6, BZ-0
	6–8		As Above	Auger		
	8–10					
	10–12		Sand, lt. gray, 10YR 7/1, v. fine, <5% silt, saturated. (SP)	90	4	8-15-20-22 (▽) @ 1440 (lab); HS-90, BZ-0
	12		EOB @ 12.0' 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. SB 13

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

1. PROJECT	Pump Houses 1, 2, + 6
2. LOCATION (Coordinates or Station)	SAV. GA.
3. DRILLING AGENCY	PSI
4. HOLE NO. (As shown on drawing title and file number)	SB13
5. NAME OF DRILLER	K. Durham
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	12.0'
8. DEPTH DRILLED INTO ROCK	—
9. TOTAL DEPTH OF HOLE	12.0'
10. SIZE AND TYPE OF BIT	4¼" I.D. 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 4 / UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES	—
15. ELEVATION GROUND WATER	9.8' BGS
16. DATE HOLE	STARTED 11-19-96 / COMPLETED 11-19-96
17. ELEVATION TOP OF HOLE	39.4'
18. TOTAL CORE RECOVERY FOR BORING	— %
19. SIGNATURE OF INSPECTOR	D. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Blows / OVA, ppm
	2		Sand, lt. yellowish brown, 10YR 6/4, v.fine, 5-10% silt, dry (SM)	85	1	4-9-10-11 / 1500 — HS - 220, BZ - 0
	4		Sand, pale yellow, v.fine, <5% silt, dry. (SP)	80	2	9-9-10-7 / 1505 — HS - 40, BZ - 0
	6		Sand, lt. brownish gray, 2.5Y6/2, 5% silt, v.fine, moist, (SP)	90	3	10-8-6-7 / 1510 Lab — HS - 520, BZ - 0
	8		AS Above	AUGER		
	10					▽
	12		Sand, lt. brownish gray, 2.5Y6/2, v.fine, <5% silt, saturated (SP)	90	4	3-7-11-11 / 1520 Lab — HS - 540, BZ - 0
			EOB @ 12.0' 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. SB 14

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

1. PROJECT: Pump Houses 1, 2, +6
2. LOCATION (Coordinates or Station): SAV. GA.
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): SB 14
5. NAME OF DRILLER: K. Durham
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 12.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 12.0'
10. SIZE AND TYPE OF BIT: 4¼" I.D. HSA
11. DATUM FOR ELEVATION SHOWN (MSL or USC&GS): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: CME 75
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4; UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: 9.5' BGS
16. DATE HOLE: STARTED 11-19-96; COMPLETED 11-19-96
17. ELEVATION TOP OF HOLE: 39.6'
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: G. Rowell

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		
						Blows		OVA, ppm
			1.3' Concrete Core					
	2		Sand, yellowish brown, 10YR5/6, fine, 5% silt, dry (SP)	60	1	3-11-10-9 1540		HS - 480 BZ - 0
	4		Sand, lt. gray, v. fine, <5% silt, dry. (SP)	65	2	9-10-8-7 1545		HS - 260 BZ - 0
	6		As Above (SP)	85	3	5-7-9-8 1550	3" Spoon Lab	HS - 480 BZ - 0
	8		As Above	Auger			▽	
	10		Sand, lt. brownish gray, 10YR 6/2, <5% silt, saturated (SP)	85	4	3-7-12-15 1600	Lab	HS - 480 BZ - 0
	12		EOB @ 12.0' 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. SB 15

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

1. PROJECT	Pump Houses 1, 2, & 6
2. LOCATION (Coordinates or Station)	SAV. GA.
3. DRILLING AGENCY	PSI
4. HOLE NO. (As shown on drawing title and file number)	SB 15
5. NAME OF DRILLER	K. Durham
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	10.0'
8. DEPTH DRILLED INTO ROCK	—
9. TOTAL DEPTH OF HOLE	10.0'
10. SIZE AND TYPE OF BIT	4¼" I.D. 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 4 / UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES	—
15. ELEVATION GROUND WATER	7.3' BGS
16. DATE HOLE	STARTED 11-20-96 / COMPLETED 11-20-96
17. ELEVATION TOP OF HOLE	39.6'
18. TOTAL CORE RECOVERY FOR BORING	— %
19. SIGNATURE OF INSPECTOR	G. Rowell

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		
						Blows		OVA, ppm
			1.3' concrete Core					
	2		Sand, pale brown, 10YR 6/3, V.fine, 5-10% silt, moist. (SM)	90	1	6-11-13-9 0815	Lab	HS- 62 Bz- 0
	4		As Above. <5% silt. (SP)	95	2	10-12-12-13 0820		HS- 52 Bz- 0
	6		As Above. wet. (SP)	80	3	13-15-12-8 0825	Lab	HS- 220 Bz- 0
			As Above	Auger				
	8		As Above. saturated. (SP)	90	4	3-6-8-8 0830		HS- 10 Bz- 0
	10		EOB @ 10.0' 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. SB 42

DRILLING LOG | DIVISION: SAV | INSTALLATION: HAAF | SHEET 1 OF 1 SHEETS

1. PROJECT: Pumphouses 1, 2, +6
2. LOCATION (Coordinates or Station): SAV. GA.
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): SB42
5. NAME OF DRILLER: M. Gribble
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 12.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 12.0'
10. SIZE AND TYPE OF BIT: 4 1/4" I.D. 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 4 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: —
16. DATE HOLE: STARTED 5-8-97 | COMPLETED 5-8-97
17. ELEVATION TOP OF HOLE: 37.8'
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Rowell

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
	2		Sand, v. dk grayish brown, 10YR3/2, v. fine, 10% silt, moist, round (SM)	HAND Auger	1	Blows: 1130 — OVA, ppm: HS = 0, BZ = 0
	4		As Above	HAND Auger	2	1135 — HS = 5, BZ = 0
	6		As Above to 5.5'. Two inch bed of gravel, then sand, grayish brown, 10YR5/2, V. fine, 5-10% silt, moist. (SM)	80%	3	5-8-11-15, 1140, Lab — HS = >1000, BZ = 0
	8		As Above, no gravel	AUGER		
	10		As Above, saturated.	85%	4	3-7-11-14, 1150, Lab — HS = >1000, BZ = 0
	12		EOB @ 12.0' 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. SB 43

DRILLING LOG

DIVISION: SAV

INSTALLATION: HAAF

SHEET 1 OF 1 SHEETS

1. PROJECT: Pumphouses 1, 2, +6
2. LOCATION (Coordinates or Station): SAV. GA.
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): SB43
5. NAME OF DRILLER: M. Gribble
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 12.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 12.0'
10. SIZE AND TYPE OF BIT: 4¼" I.D. 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 4; UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: —
16. DATE HOLE: STARTED 5-8-97; COMPLETED 5-8-97
17. ELEVATION TOP OF HOLE: 38.2'
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Rowell

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
	2		sand, brown, 10YR 5/3, v. fine, 5-10% silt, moist, round (SW)	Hand Auger	1	Blows / OVA, ppm 1050 HS = 10 BZ = 0
	4		Sand, lt. gray, 10YR 7/2, v. fine, round, moist, 25% silt (SW)	Hand Auger	2	HS = 81 BZ = 0 1055
	6		As Above	50%	3	12-22-24-22 cab HS = 230 BZ = 0 1100
	8		As Above	AUGER		
	10		As Above	Auger		BZ = 0
	12		As Above, saturated	85%	4	8-11-15-17 cab HS = 250 BZ = 0 1110
			EOB @ 12.0' 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. SB 44

DRILLING LOG	DIVISION SAV	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT	Pumphouses 1, 2, +6
2. LOCATION (Coordinates or Station)	SAV. GA.
3. DRILLING AGENCY	PSI
4. HOLE NO. (As shown on drawing title and file number)	SB 44
5. NAME OF DRILLER	Wm. Gribble
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	12.0'
8. DEPTH DRILLED INTO ROCK	—
9. TOTAL DEPTH OF HOLE	12.0'
10. SIZE AND TYPE OF BIT	4¼" I.D. 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 0
14. TOTAL NUMBER CORE BOXES	—
15. ELEVATION GROUND WATER	—
16. DATE HOLE	STARTED 5-7-97 / COMPLETED 5-7-97
17. ELEVATION TOP OF HOLE	38.3'
18. TOTAL CORE RECOVERY FOR BORING	— %
19. SIGNATURE OF INSPECTOR	D. Rowell

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
	2		sand, yellowish brown, 10YR5/6, v. fine, moist, 5-10% silt. (SM)	Hand Auger	1	Blows / OVA, ppm 1725 HS = 0 BZ = 0
	4		sand, v. pale brown, 10yr7/3, v. fine, round moist, <5% silt (SW)	Hand Auger	2	1730 HS = 0 BZ = 0
	6		As Above	80%	3	5-8-8-9 1740 HS = 3 BZ = 0
	8		As Above	Auger		
	10		As Above	85%	4	4-6-9-12 1745 Lab HS = >1000 BZ = 0
	12		As Above, wet	80%	5	8-12-14-12 1750 ▽ Lab HS = >1000 BZ = 0
			EOB @ 12.0' BGS			

5-8-8-9

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. SB 45

DRILLING LOG | DIVISION: SAV | INSTALLATION: HAAF | SHEET 1 OF 1 SHEETS

1. PROJECT: Pumphouses 1, 2, +6
2. LOCATION (Coordinates or Station): SAV. GA.
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): SB45
5. NAME OF DRILLER: M. Gribble
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 10.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 10.0'
10. SIZE AND TYPE OF BIT: 4¼" I.D. 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 4 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: —
16. DATE HOLE: STARTED 5-7-97 | COMPLETED 5-7-97
17. ELEVATION TOP OF HOLE: 37.7'
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Rowell

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	OVA, ppm
	0–2		Sand, yellowish brown, 10YR 5/4, v.fine, round, 5-10% silt, moist (SW)	Hand Auger	1	Blows: 1705	HS = 0 BZ = 0
	2–4		As Above	Hand Auger	2	1710	HS = 0 BZ = 0
	4–6		Sand, pale brown, 10YR 6/3, v.fine moist, round <5% silt (SW)	80%	3	5-6-5-5 Lab 1715	HS = 1 BZ = 0
	6–8		As Above	AUGER			
	8–10		Sand v. pale brown, 10YR 7/3, v.fine, wet, <5% silt (SW)	80%	4	7-10-15-15 ▽ Lab 1720	HS = >1000 BZ = 0
	10–12		EOB @ 10.0' 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. SB 46

DRILLING LOG	DIVISION SAV	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT	Pumphouses 1, 2, + 6
2. LOCATION (Coordinates or Station)	SAV. GA.
3. DRILLING AGENCY	PSI
4. HOLE NO. (As shown on drawing title and file number)	SB 46
5. NAME OF DRILLER	M. Gribble
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	12.0'
8. DEPTH DRILLED INTO ROCK	—
9. TOTAL DEPTH OF HOLE	12.0'
10. SIZE AND TYPE OF BIT	4¼" I.D. 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 4 / UNDISTURBED 1
14. TOTAL NUMBER CORE BOXES	—
15. ELEVATION GROUND WATER	—
16. DATE HOLE	STARTED 5-7-97 / COMPLETED 5-7-97
17. ELEVATION TOP OF HOLE	37.9'
18. TOTAL CORE RECOVERY FOR BORING	— %
19. SIGNATURE OF INSPECTOR	D. Rowell

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
	2		Sand, lt. brownish gray, 10YR6/2 v. fine, round, moist, 5-10% s. lt. (SW)	Hand auger	1	Blows / OVA, ppm 1600 HS: 0 BZ: 0
	4		Sand, lt. gray, 10YR7/2 v. fine round, <5% s. lt, round. moist (SW)	Hand Auger	2	1605 HS: 1 BZ: 0
	6		Sand, brown, 10YR 4/3, v. fine, round, moist, <5% s. lt (SW)	90%	3	10-20-16-18 (cal) HS: 1 BZ: 0 1610
	8		As Above	AUGER	4	
	10		As Above	AUGER		Shelby tube 8-10'
	12		Sand, lt. gray, 10YR7/2, v. fine saturated, <5% s. lt, round (SW)	75%	4	5-18-14-30 ▽ HS: >1000 BZ: 0 1620 (cal)
			EOB @ 12.0' 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. SB 47

DRILLING LOG	DIVISION SAV	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: Pumphouses 1, 2, +6
2. LOCATION (Coordinates or Station): SAV. GA.
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): SB47
5. NAME OF DRILLER: M. Gribble
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 12.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 12.0'
10. SIZE AND TYPE OF BIT: 4¼" I.D. 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 4; UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: —
16. DATE HOLE: STARTED 5-7-97; COMPLETED 5-7-97
17. ELEVATION TOP OF HOLE: 37.8'
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Rowell

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
						Blows / OVA, ppm
	2		Sand, lt. yellowish brown, 10YR6/4, V. fine, moist 5-10% silt, round (SW)	Hand Auger	1	15,15 / HS=0 BZ=0
	4		Sand, lt. gray, 10YR7/2, v. fine, moist, <5% silt, round (SW)	Hand Auger	2	1520 / HS=0 BZ=0
	6		Sand, pale brown, 10YR6/3, v. fine 5-10% silt, moist, round (SW)	87%	3	9-14-14-13 / 1525 lab / HS=110 BZ=0
	8		As Above	AUGER		
	10		Sand, v. pale brown 10YR 7/3, V. fine <5% silt, saturated, round (SW)	85%	4	10-11-13-21 / 1535 ▽ lab / HS=>1000 BZ=0
	12		EOB @ 12.0' 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. SB 48

DRILLING LOG | DIVISION: SAV | INSTALLATION: HAAF | SHEET 1 OF 1 SHEETS

1. PROJECT: Pumphouses 1, 2, & 6
2. LOCATION (Coordinates or Station): SAV. GA.
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): SB48
5. NAME OF DRILLER: M. Gribble
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 12.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 12.0'
10. SIZE AND TYPE OF BIT: 4¼" I.D. 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 4 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: —
16. DATE HOLE: STARTED 5-7-97 | COMPLETED 5-7-97
17. ELEVATION TOP OF HOLE: 38.2'
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Rowell

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
	2		sand, yellowish Brown, 10YR5/6, V. Fine, 5-10% silt, moist. (SW)	Hand Auger	1	Blows / OVA, ppm 1410 HS=0 BZ=0
	4		sand, v. pale brown, 10YR7/3, v. fine, round, <5% silt, moist. (SW)	Hand Auger	2	1415 HS=0 BZ=0
	6		As Above	80%	3	5-7-9-7 HS=110 BZ=0 1425 Lab
	8		As Above	Auger		
	10		As Above, saturated.	85%	4	10-17-19-15 ▽ HS=420 BZ=0 1435 Lab
	12		EOB @ 12.0' 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. SB 49

DRILLING LOG	DIVISION SAV	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS
1. PROJECT Pumphouses 1, 2, +6		10. SIZE AND TYPE OF BIT 4¼" I.D. 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) SB 49		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 5 / UNDISTURBED 0
5. NAME OF DRILLER M. Gribble		14. TOTAL NUMBER CORE BOXES —	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER —	
		16. DATE HOLE	STARTED 5-7-97 / COMPLETED 5-7-97
7. THICKNESS OF OVERBURDEN 12.0'		17. ELEVATION TOP OF HOLE 38.7'	
8. DEPTH DRILLED INTO ROCK —		18. TOTAL CORE RECOVERY FOR BORING — %	
9. TOTAL DEPTH OF HOLE 12.0'		19. SIGNATURE OF INSPECTOR D. Rowell	

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	
						Blows	OVA, ppm
	2		sand, brown, 10YR 5/3, v. fine, moist, 5-10% s.lt, round (SM)	Hand Auger	1	1320	HS: 0 BZ: 0
	4		sand, v. pale brown, 10YR 7/3 v. fine, round, moist, <5% s.lt. (SW)	Hand Auger	2	1330	HS: 1 BZ: 0
	6		As Above	75%	3	5-8-11-14 1335	HS: 1 BZ: 0
	8		As Above	Auger			
	10		As Above.	80%	4	24-5-2 1345 Lab	HS: >1000 BZ: 0
	12		As Above. saturated.	75%	5	5-7-13-12 1350 Lab	HS: >1000 BZ: 0
			EOB @ 12.0' 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. SB 50

DRILLING LOG	DIVISION SAV	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT: Pumphouses 1, 2, +6
2. LOCATION (Coordinates or Station): SAV. GA.
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): SB 50
5. NAME OF DRILLER: M. Gribble
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 10.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 10.0'
10. SIZE AND TYPE OF BIT: 4¼" I.D. 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 0
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: —
16. DATE HOLE: STARTED 5-7-97; COMPLETED 5-7-97
17. ELEVATION TOP OF HOLE: 38.5'
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Rowell

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
	2		sand, dk grayish brown 10YR4/2 v.f.-m, 5-10% silt, dry, round (SM)	Hand Auger	1	Blows / OVA, ppm 1040 HS=0 BZ=0
	4		sand, v. pale brown, 10YR 7/3, v.f.-m, moist, <5% silt, round (SW)	Hand Auger	2	1045 HS=0 BZ=0
	6		sand, pale brown, 10YR 6/3, v.f.-m 5-10% silt, round, moist (SM)	80%	3	5-6-8-8 Lab 1050 HS=0 BZ=0
	8		AS above, <5% silt	90%	4	3-5-6-9 1100 HS=0 BZ=0
	10		AS above, wet	80%	5	7-11-11-12 Lab 1105 HS=1 BZ=0
	12		EOB @ 10.0' 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. SB 51

DRILLING LOG

DIVISION: SAV

INSTALLATION: HAAF

SHEET 1 OF 1 SHEETS

1. PROJECT: Pumphouses 1, 2, & 6
2. LOCATION (Coordinates or Station): SAV. GA.
3. DRILLING AGENCY: PSI
4. HOLE NO. (As shown on drawing title and file number): SB 51
5. NAME OF DRILLER: M. Gibble
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 8.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 8.0'
10. SIZE AND TYPE OF BIT: 4¼" I.D. 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 4; UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: —
16. DATE HOLE: STARTED 5-7-97; COMPLETED 5-7-97
17. ELEVATION TOP OF HOLE: 38.9'
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: D. Rowell

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
	2		Sand, yellow, 10YR 7/6, V.fine, moist, round, <5% s:H (SW)	HAND AUGER	1	Blows / OVA, ppm 0955 HS=0 BZ=0
	4		Sand v. pale brown, 10YR 7/4 v.fine, moist, round, <5% s:H. (SW)	HAND AUGER	2	Lab HS=0 BZ=0 1000
	6		As Above, moist	90%	3	7-8-9-10 HS=0 BZ=0 1005
	8		As Above, saturated	95%	4	6-8-12-14 ▽ HS=>1000 1015 Lab BZ=0
	10		EOB @ 8.0' BGS			
	12					

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. SB 52

DRILLING LOG	DIVISION SAV	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT	Pumphouses 1, 2, + 6
2. LOCATION (Coordinates or Station)	SAV. GA.
3. DRILLING AGENCY	PSI
4. HOLE NO. (As shown on drawing title and file number)	SB 52
5. NAME OF DRILLER	M. Gribble
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	8.0'
8. DEPTH DRILLED INTO ROCK	—
9. TOTAL DEPTH OF HOLE	8.0'
10. SIZE AND TYPE OF BIT	4¼" I.D. 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 4 / UNDISTURBED 1
14. TOTAL NUMBER CORE BOXES	—
15. ELEVATION GROUND WATER	—
16. DATE HOLE	STARTED 5-7-97 / COMPLETED 5-7-97
17. ELEVATION TOP OF HOLE	39.41
18. TOTAL CORE RECOVERY FOR BORING	— %
19. SIGNATURE OF INSPECTOR	D. Rowell

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
	2		Sand, yellowish brown, 10YR 6/6, v. fine, moist 5-10% silt. (SW)	HAND AUGER	1	Blows 0825 — OVA, ppm HS = 46 BZ = 0
	4		Sand, v. pale brown, 10YR 7/3, v. fine, <5% silt, moist, rounded. (SW)	HAND AUGER	2	0830 — HS = 6 BZ = 0
	6		Sand, lt. gray, 10YR 7/2, v. fine, rounded <5% silt, moist. (SW)	83%	3	10-12-14-12 0835 lab — HS = >1000 BZ = 0
	8		As Above. wet	90%	4	6-6-7-5 0845 lab — HS = >1000 BZ = 0
	10		EOB @ 8.0' BGS			Shelby Tube 5'-7'
	12					

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. SB 53

DRILLING LOG	DIVISION SAV	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS
1. PROJECT Pumphouses 1, 2, +6		10. SIZE AND TYPE OF BIT 4¼" I.D. 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) SB 53		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4	UNDISTURBED 0
5. NAME OF DRILLER M. Gribble		14. TOTAL NUMBER CORE BOXES —	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER —	
7. THICKNESS OF OVERBURDEN 8.0'		16. DATE HOLE STARTED 5-6-97	COMPLETED 5-6-97
8. DEPTH DRILLED INTO ROCK —		17. ELEVATION TOP OF HOLE 39.6'	
9. TOTAL DEPTH OF HOLE 8.0'		18. TOTAL CORE RECOVERY FOR BORING — %	
		19. SIGNATURE OF INSPECTOR D. Rowell	

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
			15" concrete core			Blows / OVA, ppm
	2		Sand, M. yellowish brown, 10YR6/4, V.fine moist, round 5% silt. (JW)	HAND AUGER	1	1700 lab — HS = 220, BZ = 0
			As Above	HAND AUGER	2	1705 — HS = 140, BZ = 0
	4					
	6		Sand, white, 10YR8/1, V.fine round, moist <5% silt. (JW)	80%	3	8-7-11-12 / 1710 — HS = 200, BZ = 0
			As Above, wet		4	4-3-4-8 / 1720 lab ▽ — HS = >1000, BZ = 0
	8		EOB @ 8.0' BGS			
	10					
	12					

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. SB 54

DRILLING LOG	DIVISION SAV	INSTALLATION HAAF	SHEET 1 OF 1 SHEETS

1. PROJECT	Pumphouses 1, 2, +6
2. LOCATION (Coordinates or Station)	SAV. GA.
3. DRILLING AGENCY	PSI
4. HOLE NO. (As shown on drawing title and file number)	SB 54
5. NAME OF DRILLER	M. Gribble
6. DIRECTION OF HOLE	[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	8.0'
8. DEPTH DRILLED INTO ROCK	—
9. TOTAL DEPTH OF HOLE	8.0'
10. SIZE AND TYPE OF BIT	4¼" I.D. 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 4 / UNDISTURBED Ø
14. TOTAL NUMBER CORE BOXES	—
15. ELEVATION GROUND WATER	—
16. DATE HOLE	STARTED 5-7-97 / COMPLETED 5-7-97
17. ELEVATION TOP OF HOLE	39.6'
18. TOTAL CORE RECOVERY FOR BORING	— %
19. SIGNATURE OF INSPECTOR	D. Rowell

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
			15" concrete core (SW)			Blows / OVA, ppm
	2		Sand, dk yellowish brown 10YR 4/6, v.f.ine 5-10% silt moist, round (SW)	Hand Auger	1	0750 HS = 5 BZ = 0
	4		Sand, v. pale brown, 10yR 7/3, v.f.ine, round, dry, <5% silt (SW)	Hand Auger	2	0755 HS = 1 BZ = 0
	6		Sand, lt. yellowish brown, 10YR6/4 v.f.ine, moist, round 5-10% silt (SW)	80%	3	6-7-88 lab 0800 HS = 22 BZ = 0
	8		As Above, wet		4	5-6-6-7 lab 0805 ▽ HS = 52 BZ = 0
	10		EOB @ 8.0' BGS			
	12					

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.

APPENDIX V

SOIL AND SEDIMENT LABORATORY RESULTS

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CAP-PART A
SOIL ANALYTICAL RESULTS

NOVEMBER 1996

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Table V-A. Summary of CAP-Part A Soil Analytical Results

Station:	GUST	P2-MW04	P2-MW04	P2-MW05	P2-MW05	P2-MW06	P2-MW06
Sample ID:	Soil	WB0401	WB0402	WB0501	WB0502	WB0601	WB0602
Sample Interval (ft BGS):	Threshold	2.0 - 4.0	13.0 - 15.0	8.0 - 10.0	13.0 - 15.0	9.0 - 11.0	14.0 - 16.0
Collection Date:	Levels	11/19/1996	11/19/1996	11/19/1996	11/19/1996	11/19/1996	11/19/1996
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.017	0.0053 U	0.0014 U	0.021 U	0.0015 U	0.054 U	0.28 J
Toluene	115	0.0053 U	0.019 U	0.28 U	0.02 U	0.72 J	0.82 =
Ethylbenzene	18	0.0053 U	0.018 U	1 J	0.019 U	7.2 J	0.3 U
Xylenes	700	0.0053 U	0.0066 U	1.6 J	0.0069 U	13 J	0.57 J
MTBE		0.053 U	0.14 U	2.1 U	0.15 U	5.4 U	2.4 U
POLYNUCLEAR AROMATIC HYDROCARBONS							
1-Methylnaphthalene	NRC	0.70 U	0.40 U	0.36 U	0.41 U	0.37 U	0.41 U
2-Methlynaphthalene	NRC	0.70 U	0.40 U	0.36 U	0.41 U	0.37 U	0.41 U
Acenaphthene	NRC	0.70 U	0.40 U	0.36 U	0.41 U	0.37 U	0.41 U
Acenaphthylene	NRC	0.70 U	0.40 U	0.36 U	0.41 U	0.37 U	0.41 U
Anthracene	NRC	[a]	[a]	[a]	[a]	[a]	[a]
Benoz(a)anthracene	0.660	[b]	[b]	[b]	[b]	[b]	[b]
Benzo(a)pyrene	0.660	0.70 U	0.40 U	0.36 U	0.41 U	0.37 U	0.53 =
Benzo(b)fluoranthene	0.660	0.70 U	0.40 U	0.36 U	0.41 U	0.66 =	0.41 U
Benzo(g,h,i)perylene	NRC	0.70 U	0.40 U	0.36 U	0.41 U	0.37 U	0.41 U
Benzo(k)fluoranthene	0.660	[c]	[c]	[c]	[c]	[c]	[c]
Chrysene	0.660	0.70 U	0.40 U	0.44 =	0.57 =	1.5 =	1.3 =
Dibenzo(a,h)anthracene	0.660	[d]	[d]	[d]	[d]	[d]	[d]
Fluoranthene	NRC	0.70 U	0.40 U	1.2 =	0.41 U	2.5 =	0.41 U
Fluorene	NRC	0.70 U	0.40 U	0.36 U	0.41 U	0.37 U	0.41 U
Indeno(1,2,3-cd)pyrene	0.660	0.70 U	0.40 U	0.36 U	0.41 U	0.37 U	0.41 U
Naphthalene	NRC	0.70 U	0.40 U	0.36 U	0.41 U	0.37 U	0.41 U
Phenanthrene	NRC	0.70 U	0.40 U	1.5 =	0.41 U	2.3 =	0.41 U
Pyrene	NRC	0.70 U	0.40 U	1.2 =	0.41 U	2.5 =	0.41 U
OTHER ANALYTES							
TPH-Diesel Range Organics	NRC	370 J	12 UJ	49 J	34 J	11 UJ	12 UJ
TPH-Gasoline Range Organics	NRC	0.19 UJ	6.6 =	200 J	4.3 =	1600 J	56 =

NOTES:

[1] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table B, Column 1)

[a] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene

[b] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene

[c] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene

[d] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene

NRC No regulatory criteria

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

Table V-A. Summary of CAP-Part A Soil Analytical Results (continued)

Station:	GUST	P2-MW10	P2-MW10	P2-SB09	P2-SB09	P2-SB10	P2-SB10
Sample ID:	Soil	WB1001	WB1002	SB0901	SB0902	SB1001	SB1002
Sample Interval (ft BGS):	Threshold	8.0 - 10.0	13.0 - 15.0	4.0 - 6.0	10.0 - 12.0	4.0 - 6.0	8.0 - 10.0
Collection Date:	Levels	11/20/1996	11/20/1996	11/19/1996	11/19/1996	11/19/1996	11/19/1996
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.017	1.6 J	0.0061 U	0.00026 U	0.120 U	0.020 U	5.2 J
Toluene	115	0.83 J	0.0061 U	0.0035 U	110 J	0.82 J	43 J
Ethylbenzene	18	14 J	0.0066 =	0.0033 U	120 J	0.26 U	120 J
Xylenes	700	49 J	0.091 =	0.0012 U	360 J	0.32 J	300 J
MTBE		3.1 U	61 U	0.026 U	12 U	0.2 U	11 U
POLYNUCLEAR AROMATIC HYDROCARBONS							
1-Methylnaphthalene	NRC	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.39 U
2-Methlynaphthalene	NRC	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.39 U
Acenaphthene	NRC	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.39 U
Acenaphthylene	NRC	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.39 U
Anthracene	NRC	[a]	[a]	[a]	[a]	[a]	[a]
Benoz(a)anthracene	0.660	[b]	[b]	[b]	[b]	[b]	[b]
Benzo(a)pyrene	0.660	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.39 U
Benzo(b)fluoranthene	0.660	0.41 U	0.41 U	0.36 U	0.81 =	0.5 =	1.3 =
Benzo(g,h,i)perylene	NRC	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.39 U
Benzo(k)fluoranthene	0.660	[c]	[c]	[c]	[c]	[c]	[c]
Chrysene	0.660	0.41 U	0.41 U	0.36 U	1.1 =	0.74 =	1.5 =
Dibenzo(a,h)anthracene	0.660	[d]	[d]	[d]	[d]	[d]	[d]
Fluoranthene	NRC	0.41 U	0.41 U	0.36 U	2.4 =	1.5 =	3.3 =
Fluorene	NRC	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.66 =
Indeno(1,2,3-cd)pyrene	0.660	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.39 U
Naphthalene	NRC	0.41 U	0.41 U	0.36 U	0.40 U	0.35 U	0.39 U
Phenanthrene	NRC	0.41 U	0.41 U	0.36 U	2.1 =	0.76 =	3.1 =
Pyrene	NRC	0.41 U	0.41 U	0.36 U	2.0 =	1.2 =	2.6 =
OTHER ANALYTES							
TPH-Diesel Range Organics	NRC	10 =	4.7 =	11 UJ	18 J	24 J	26 J
TPH-Gasoline Range Organics	NRC	4700 J	0.71 J	0.2 U	43000 J	130 J	43000 J

NOTES:

[1] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table B, Column 1)

[a] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene

[b] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene

[c] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene

[d] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene

NRC No regulatory criteria

Laboratory Qualifiers

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Table V-A. Summary of CAP-Part A Soil Analytical Results (continued)

Station:	GUST	P2-SB11	P2-SB11	P2-SB12	P2-SB12	P2-SB13
Sample ID:	Soil	SB1101	SB1102	SB1201	SB1202	SB1301
Sample Interval (ft BGS):	Threshold	4.0 - 6.0	10.0 - 12.0	0.0 - 2.0	10.0 - 12.0	4.0 - 6.0
Collection Date:	Levels	11/19/1996	11/19/1996	11/19/1996	11/19/1996	11/19/1996
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS						
Benzene	0.017	0.0062 U	0.024 U	0.0053 U	0.0062 U	0.0059 U
Toluene	115	0.0062 U	3.1 J	0.0053 U	0.0062 U	0.0059 U
Ethylbenzene	18	0.0062 U	1.4 J	0.0053 U	0.0062 U	0.015 =
Xylenes	700	0.0062 U	7.1 J	0.0053 U	0.0078 =	0.052 =
MTBE		0.062 U	39 J	0.053 U	0.062 U	0.059 U
POLYNUCLEAR AROMATIC HYDROCARBONS						
1-Methylnaphthalene	NRC	0.41 U	0.41 U	0.35 U	0.41 U	0.39 U
2-Methlynaphthalene	NRC	0.41 U	0.41 U	0.35 U	0.41 U	0.39 U
Acenaphthene	NRC	0.41 U	0.59 =	0.35 U	0.41 U	0.39 U
Acenaphthylene	NRC	0.41 U	0.41 U	0.35 U	0.41 U	0.39 U
Anthracene	NRC	[a]	[a]	[a]	[a]	[a]
Benoz(a)anthracene	0.660	[b]	[b]	[b]	[b]	[b]
Benzo(a)pyrene	0.660	0.41 U	2.8 =	0.35 U	0.41 U	0.39 U
Benzo(b)fluoranthene	0.660	0.41 U	3.1 =	0.35 U	0.41 U	0.39 U
Benzo(g,h,i)perylene	NRC	0.41 U	0.8 =	0.35 U	0.41 U	0.39 U
Benzo(k)fluoranthene	0.660	[c]	[c]	[c]	[c]	[c]
Chrysene	0.660	0.41 U	5 =	0.35 U	0.41 U	0.39 U
Dibenzo(a,h)anthracene	0.660	[d]	[d]	[d]	[d]	[d]
Fluoranthene	NRC	0.41 U	5.6 =	0.35 U	0.41 U	0.39 U
Fluorene	NRC	0.41 U	0.82 =	0.35 U	0.41 U	0.39 U
Indeno(1,2,3-cd)pyrene	0.660	0.41 U	1.3 =	0.35 U	0.41 U	0.39 U
Naphthalene	NRC	0.41 U	0.41 U	0.35 U	0.41 U	0.39 U
Phenanthrene	NRC	0.41 U	4.9 =	0.35 U	0.41 U	0.39 U
Pyrene	NRC	0.41 U	4.3 =	0.35 U	0.41 U	0.39 U
OTHER ANALYTES						
TPH-Diesel Range Organics	NRC	23 J	35 J	10 UJ	12 UJ	12 UJ
TPH-Gasoline Range Organics	NRC	0.22 J	5000 J	0.19 J	1.1 =	2.4 =

NOTES:

[1] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table B, Column 1)

[a] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene

[b] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene

[c] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene

[d] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene

NRC No regulatory criteria

Laboratory Qualifiers

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Table V-A. Summary of CAP-Part A Soil Analytical Results (continued)

Station:	GUST	P2-SB13	P2-SB14	P2-SB14	P2-SB15	P2-SB15
Sample ID:	Soil	SB1302	SB1401	SB1402	SB1501	SB1502
Sample Interval (ft BGS):	Threshold	10.0 - 12.0	4.0 - 6.0	10.0 - 12.0	0.0 - 2.0	4.0 - 6.0
Collection Date:	Levels	11/19/1996	11/19/1996	11/19/1996	11/20/1996	11/20/1996
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS						
Benzene	0.017	0.0063 U	0.0053 U	0.0062 U	0.0054 U	0.0057 U
Toluene	115	0.0063 U	0.0053 U	0.0062 U	0.0054 U	0.0057 U
Ethylbenzene	18	0.0063 U	0.0053 U	0.0062 U	0.0054 U	0.0057 U
Xylenes	700	0.0091 =	0.0053 U	0.0062 U	0.0054 U	0.0057 U
MTBE		0.063 U	0.053 U	0.062 U	0.054 U	0.057 U
POLYNUCLEAR AROMATIC HYDROCARBONS						
1-Methylnaphthalene	NRC	0.42 U	0.35 U	0.41 U	0.36 U	0.38 U
2-Methlynaphthalene	NRC	0.42 U	0.35 U	0.41 U	0.36 U	0.38 U
Acenaphthene	NRC	0.42 U	0.35 U	0.41 U	0.36 U	0.38 U
Acenaphthylene	NRC	0.42 U	0.35 U	0.41 U	0.36 U	0.38 U
Anthracene	NRC	[a]	[a]	[a]	[a]	[a]
Benoz(a)anthracene	0.660	[b]	[b]	[b]	[b]	[b]
Benzo(a)pyrene	0.660	0.42 U	0.35 U	0.41 U	0.36 U	0.38 U
Benzo(b)fluoranthene	0.660	0.42 U	0.35 U	0.41 U	0.36 U	0.38 U
Benzo(g,h,i)perylene	NRC	0.42 U	0.35 U	0.41 U	0.36 U	0.38 U
Benzo(k)fluoranthene	0.660	[c]	[c]	[c]	[c]	[c]
Chrysene	0.660	0.42 U	0.35 U	0.41 U	0.36 U	0.38 U
Dibenzo(a,h)anthracene	0.660	[d]	[d]	[d]	[d]	[d]
Fluoranthene	NRC	0.42 U	0.35 U	0.41 U	0.36 U	0.38 U
Fluorene	NRC	0.42 U	0.35 U	0.41 U	0.36 U	0.38 U
Indeno(1,2,3-cd)pyrene	0.660	0.42 U	0.35 U	0.41 U	0.36 U	0.38 U
Naphthalene	NRC	0.42 U	0.35 U	0.41 U	0.36 U	0.38 U
Phenanthrene	NRC	0.42 U	0.35 U	0.41 U	0.36 U	0.38 U
Pyrene	NRC	0.42 U	0.35 U	0.41 U	0.36 U	0.38 U
OTHER ANALYTES						
TPH-Diesel Range Organics	NRC	13 UJ	11 UJ	12 UJ	4.2 =	7.7 =
TPH-Gasoline Range Organics	NRC	0.74 =	0.19 U	0.28 =	0.27 U	0.28 U

NOTES:

[1] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table B, Column 1)

[a] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene

[b] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene

[c] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene

[d] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene

NRC No regulatory criteria

Laboratory Qualifiers

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SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S6-86824
Received: 20 NOV 96
~~Reported: 20 DEC 96~~
~~Revised: 20 JAN 97~~
Client PO. No.: 90534

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA45/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 144470120

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
86824-1	SB0701*CS*SB07(4-6)	PUMPHOUSE #1	11-19-96/0910	HAA45
86824-2	SB0702*CS*SB07(10-12)		11-19-96/0915	HAA45
86824-3	SB0801*CS*SB08(4-6)		11-19-96/0945	HAA45
86824-4	SB0802*CS*SB08(10-12)		11-19-96/0955	HAA45
86824-5	SB0901*CS*SB09(4-6)	PUMPHOUSE #2	11-19-96/1040	HAA45

PARAMETER	86824-1	86824-2	86824-3	86824-4	86824-5
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<0.28	<0.29	<0.28	<0.30	<0.26
Toluene, ug/kg dw	<3.8	22	<3.8	<4.0	<3.5
Ethylbenzene, ug/kg dw	6.7	22	<3.6	<3.7	<3.3
Xylenes, ug/kg dw	46	130	3.9J	1.2J	<1.2
Methyl tert-butyl ether (MTBE), ug/kg dw	<28	<29	<28	<30	<26
Surrogate - F3-Toluene	111 %	94 %	122 %	106 %	88 %
PF Code	T	T	T	T	T
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	1122A	1122A	1122A	1122A	1122A
Preparation Date	12.03.96	11.22.96	11.22.96	11.22.96	11.22.96
Preparation Time	1836	1908	1952	2036	2120
Analysis Time	1836	1908	1952	2036	2120
Date Analyzed	12.03.96	11.22.96	11.22.96	11.22.96	11.22.96
RES Code	PP01	PP01	PP01	PP01	PP01
Initial Volume/Weight	5.0	5.0	5.0	5.0	5.0
Final Extraction Volume (FV1)	5.0	5.0	5.0	5.0	5.0
Clock ID	1D1203	1D1122	1D1122	1D1122	1D1122

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& ENVIRONMENTAL SERVICES, INC.

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Received: 20 NOV 96
Reported: 20 DEC 96

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA45/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 151561220

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
86824-1	SB0701*CS*SB07(4-6)	PumpHouse #1	11-19-96/0910	HAA45
86824-2	SB0702*CS*SB07(10-12)		11-19-96/0915	HAA45
86824-3	SB0801*CS*SB08(4-6)		11-19-96/0945	HAA45
86824-4	SB0802*CS*SB08(10-12)		11-19-96/0955	HAA45
86824-5	SB0901*CS*SB09(4-6)	PumpHouse #2	11-19-96/1040	HAA45

PARAMETER	86824-1	86824-2	86824-3	86824-4	86824-5
Gasoline Range Organics (8015M)					
Hydrocarbons as GRO, mg/kg dw	0.31	1.8	4.2	<0.22	<0.20
Surrogate - a,a,a-Trifluorotoluene	67 %	72 %	122 %	100 %	54 %
Preparation Date	12.03.96	11.22.96	11.22.96	11.22.96	11.22.96
Preparation Time	1836	1908	1952	2036	2120
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Analyzed	12.03.96	11.22.96	11.22.96	11.22.96	11.22.96
Batch ID	1122A	1122A	1122A	1122A	1122A
Clock ID	1D1203	1D1122	1D1122	1D1122	1D1122
PF Code	T	T	T	T	T
Initial Volume/Weight	5.0	5.0	5.0	5.0	5.0
Final Extraction Volume (FV1)	5.0	5.0	5.0	5.0	5.0
Analysis Time	1836	1908	1952	2036	2120
RES Code	PP01	PP01	PP01	PP01	PP01

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Sampled By: Client
Code: 151561220

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
86824-1	SB0701*CS*SB07(4-6)	Pump House #1	11-19-96/0910	HAA45
86824-2	SB0702*CS*SB07(10-12)		11-19-96/0915	HAA45
86824-3	SB0801*CS*SB08(4-6)		11-19-96/0945	HAA45
86824-4	SB0802*CS*SB08(10-12)		11-19-96/0955	HAA45
86824-5	SB0901*CS*SB09(4-6)	Pump House #2	11-19-96/1040	HAA45

PARAMETER	86824-1	86824-2	86824-3	86824-4	86824-5
Polynuclear Aromatic HC (8100)					
Acenaphthene, ug/kg dw	<390	<400	<390	<410	<360
Acenaphthylene, ug/kg dw	<390	<400	<390	<410	<360
Benzo(a)pyrene, ug/kg dw	<390	<400	<390	<410	<360
Benzo(g,h,i)perylene, ug/kg dw	550X	<400	1500	<410	<360
Benzo(b,k)fluoranthene, ug/kg dw	1600	<400	1600X	<410	<360
Chrysene + Benzo(a)anthracene, ug/kg dw	<390	520X	1200	<410	<360
Fluoranthene, ug/kg dw	<390	<400	<390	<410	<360
Fluorene, ug/kg dw	<390	<400	<390	<410	<360
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<390	<400	<390	<410	<360
Naphthalene, ug/kg dw	<390	<400	<390	<410	<360
Phenanthrene + Anthracene, ug/kg dw	<390	<400	<390	<410	<360
Pyrene, ug/kg dw	<390	<400	<390	<410	<360
1-Methylnaphthalene, ug/kg dw	<390	<400	<390	<410	<360
2-Methylnaphthalene, ug/kg dw	<390	<400	<390	<410	<360
Surrogate - 2-Fluorobiphenyl	80 %	70 %	60 %	55 %	61 %
PF Code	T	T	T	T	T

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Received: 20 NOV 96
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Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA45/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 151561220

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-1	SB0701*CS*SB07(4-6) } Pump House #1	11-19-96/0910	HAA45
86824-2	SB0702*CS*SB07(10-12)	11-19-96/0915	HAA45
86824-3	SB0801*CS*SB08(4-6)	11-19-96/0945	HAA45
86824-4	SB0802*CS*SB08(10-12)	11-19-96/0955	HAA45
86824-5	SB0901*CS*SB09(4-6) } Pump House #2	11-19-96/1040	HAA45

PARAMETER	86824-1	86824-2	86824-3	86824-4	86824-5
Initial Volume/Weight	29.8	30.0	29.8	30.5	30.5
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	1121X	1121X	1121X	1121X	1121X
Preparation Date	11.21.96	11.21.96	11.21.96	11.21.96	11.21.96
Preparation Time	2030	2030	2030	2030	2030
Analysis Time	1313	0814	1350	1235	0201
Date Analyzed	12.07.96	12.07.96	12.07.96	12.07.96	12.07.96
RES Code	PP01	PP01	PP01	PP01	PP01
Instrument ID	SGPFID	SGPFID	SGPFID	SGPFID	SGPFID

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LOG NO: S6-86824
Received: 20 NOV 96
Reported: 20 DEC 96

Ms. Christine Hettinger
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1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA45/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 151561220

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-1	SB0701*CS*SB07(4-6) } Pump House #1	11-19-96/0910	HAA45
86824-2	SB0702*CS*SB07(10-12)	11-19-96/0915	HAA45
86824-3	SB0801*CS*SB08(4-6)	11-19-96/0945	HAA45
86824-4	SB0802*CS*SB08(10-12)	11-19-96/0955	HAA45
86824-5	SB0901*CS*SB09(4-6) } Pump House #2	11-19-96/1040	HAA45

PARAMETER	86824-1	86824-2	86824-3	86824-4	86824-5
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	92	<12	<12	<12	<11
Surrogate - o-Terphenyl	89 %	84 %	119 %	104 %	111 %
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Extracted	11.21.96	11.21.96	11.21.96	11.21.96	11.21.96
Date Analyzed	11.28.96	11.27.96	11.28.96	11.28.96	11.27.96
Batch ID	1121X	1121X	1121X	1121X	1121X
Instrument ID	SGQFID	SGQFID	SGQFID	SGQFID	SGQFID
PF Code	T	T	T	T	T
Initial Volume/Weight	29.8	30.0	29.8	30.5	30.5
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Preparation Date	11.21.96	11.21.96	11.21.96	11.21.96	11.21.96
Preparation Time	2030	2030	2030	2030	2030
Analysis Time	0914	2007	1524	0951	1150
RES Code	PP01	PP01	PP01	PP01	PP01
Percent Solids (160.3), %	85	83	84	81	92

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Revised: 20 JAN 97
Client PO. No.: 90534

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Project: HAA45/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 144470120

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-6	SB0902*CS*SB09(10-12)	11-19-96/1045	HAA45
86824-7	SB1001*CS*SB10(4-6)	11-19-96/1110	HAA45
86824-8	SB1002*CS*SB10(10-12)	11-19-96/1120	HAA45
86824-9	SB1101*CS*SB11(4-6)	11-19-96/1405	HAA45
86824-10	SB1102*CS*SB11(10-12)	11-19-96/1410	HAA45

Pump House #2

PARAMETER	86824-6	86824-7	86824-8	86824-9	86824-10
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<120	<20	5200	<0.30	<24
Toluene, ug/kg dw	110000	820	43000	<4.0	3100
Ethylbenzene, ug/kg dw	120000	<260	120000	<3.8	14000
Xylenes, ug/kg dw	360000	320J	300000	2.6J	7100
Methyl tert-butyl ether (MTBE), ug/kg dw	<12000	<200	<11000	<30	39000
Surrogate - F3-Toluene	*F36	125 %	*F36	116 %	*F36
PF Code	T	T	T	T	T
Dilution factor	400.0	80.0	400.0	1.0	80.0
Batch ID	1122B	1122B	1122B	1122A	1122B
Preparation Date	11.23.96	11.25.96	11.25.96	11.22.96	11.22.96
Preparation Time	0233	1910	2100	2204	2012
Analysis Time	0233	1910	2100	2204	2012
Date Analyzed	11.23.96	11.25.96	11.25.96	11.22.96	11.22.96
RES Code	PP01	PP01	PP01	PP01	PP01
Initial Volume/Weight	5.0	5.0	5.0	5.0	5.0
Final Extraction Volume (FV1)	10	10	10	5.0	10
Clock ID	1E1122	1E1125	1E1125	1D1122	1E1122
	↑ USED IN REPORT	↑ USED IN REPORT	↑ USED IN REPORT	↑ DO NOT USE	↑ USED IN REPORT

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Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA45/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 151561220

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-6	SB0902*CS*SB09(10-12)	11-19-96/1045	HAA45
86824-7	SB1001*CS*SB10(4-6)	11-19-96/1110	HAA45
86824-8	SB1002*CS*SB10(10-12)	11-19-96/1120	HAA45
86824-9	SB1101*CS*SB11(4-6)	11-19-96/1405	HAA45
86824-10	SB1102*CS*SB11(10-12)	11-19-96/1410	HAA45

Pumphouse # 2

PARAMETER	86824-6	86824-7	86824-8	86824-9	86824-10
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<120000	<420	<120000	<6.2	<25000*F39
Toluene, ug/kg dw	130000	820	<120000	<6.2	<25000
Ethylbenzene, ug/kg dw	160000	<420	140000	<6.2	<25000
Xylenes, ug/kg dw	350000	<420	350000	<6.2	<25000
Methyl tert-butyl ether (MTBE), ug/kg dw	<1200000	<4200	<1200000	<62	<250000
Surrogate - F3-Toluene	*F33	125 %	*F33	116 %	*F33
PF Code	T	T	T	T	T
Dilution factor	20000.0	80.0	20000.0	1.0	4000.0
Batch ID	1122B	1122B	1122B	1122A	1122B
Preparation Date	11.26.96	11.25.96	11.26.96	11.22.96	11.25.96
Preparation Time	0040	1910	1911	2204	2250
Analysis Time	0040	1910	1911	2204	2250
Date Analyzed	11.26.96	11.25.96	11.26.96	11.22.96	11.25.96
RES Code	PP01	PP01	PP01	PP01	PP01
Initial Volume/Weight	5.0	5.0	5.0	5.0	5.0
Final Extraction Volume (FV1)	10	10	10	5.0	10
Clock ID	1E1125	1E1125	1E1126	1D1122	1E1125
	↑ DO NOT USE	↑ DO NOT USE	↑ DO NOT USE	↑ USED IN REPORT	↑ DO NOT USE

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Sampled By: Client
Code: 151561220

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-6	SB0902*CS*SB09(10-12)	11-19-96/1045	HAA45
86824-7	SB1001*CS*SB10(4-6)	11-19-96/1110	HAA45
86824-8	SB1002*CS*SB10(10-12)	11-19-96/1120	HAA45
86824-9	SB1101*CS*SB11(4-6)	11-19-96/1405	HAA45
86824-10	SB1102*CS*SB11(10-12)	11-19-96/1410	HAA45

Pump House #2

PARAMETER	86824-6	86824-7	86824-8	86824-9	86824-10
Gasoline Range Organics (8015M)					
Hydrocarbons as GRO, mg/kg dw	43000	130	43000	<0.22	5000
Surrogate - a,a,a-Trifluorotoluene	*F33	154 %	*F33	63 %	*F33
Preparation Date	11.26.96	11.25.96	11.26.96	11.22.96	11.25.96
Preparation Time	0040	1910	1911	2204	2250
Dilution factor	20000.0	80.0	20000.0	1.0	4000.0
Date Analyzed	11.26.96	11.25.96	11.26.96	11.22.96	11.25.96
Batch ID	1122B	1122B	1122B	1122A	1122B
Clock ID	1E1125	1E1125	1E1126	1D1122	1E1125
PF Code	T	T	T	T	T
Initial Volume/Weight	5.0	5.0	5.0	5.0	5.0
Final Extraction Volume (FV1)	10	10	10	5.0	10
Analysis Time	0040	1910	1911	2204	2250
RES Code	PP01	PP01	PP01	PP01	PP01

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-6	SB0902*CS*SB09(10-12)	11-19-96/1045	HAA45
86824-7	SB1001*CS*SB10(4-6)	11-19-96/1110	HAA45
86824-8	SB1002*CS*SB10(10-12)	11-19-96/1120	HAA45
86824-9	SB1101*CS*SB11(4-6)	11-19-96/1405	HAA45
86824-10	SB1102*CS*SB11(10-12)	11-19-96/1410	HAA45

Pump House #2

PARAMETER	86824-6	86824-7	86824-8	86824-9	86824-10
Polynuclear Aromatic HC (8100)					
Acenaphthene, ug/kg dw	<400	<350	<390	<410	590X
Acenaphthylene, ug/kg dw	<400	<350	<390	<410	<410
Benzo(a)pyrene, ug/kg dw	<400	<350	<390	<410	2800
Benzo(g,h,i)perylene, ug/kg dw	<400	<350	<390	<410	800X
Benzo(b,k)fluoranthene, ug/kg dw	810	500	1300	<410	3100
Chrysene + Benzo(a)anthracene, ug/kg dw	1100	740	1500X	<410	5000
Fluoranthene, ug/kg dw	2400X	1500	3300X	<410	5600X
Fluorene, ug/kg dw	<400	<350	660	<410	820
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<400	<350	<390	<410	1300X
Naphthalene, ug/kg dw	<400	<350	<390	<410	<410
Phenanthrene + Anthracene, ug/kg dw	2100X	760X	3100X	<410	4900X
Pyrene, ug/kg dw	2000X	1200X	2600X	<410	4300X
1-Methylnaphthalene, ug/kg dw	<400	<350	<390	<410	<410
2-Methylnaphthalene, ug/kg dw	<400	<350	<390	<410	<410
Surrogate - 2-Fluorobiphenyl	55 %	70 %	60 %	42 %	48 %
PF Code	T	T	T	T	T

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-6	SB0902*CS*SB09(10-12)	11-19-96/1045	HAA45
86824-7	SB1001*CS*SB10(4-6)	11-19-96/1110	HAA45
86824-8	SB1002*CS*SB10(10-12)	11-19-96/1120	HAA45
86824-9	SB1101*CS*SB11(4-6)	11-19-96/1405	HAA45
86824-10	SB1102*CS*SB11(10-12)	11-19-96/1410	HAA45

Pump House #2

PARAMETER	86824-6	86824-7	86824-8	86824-9	86824-10
Initial Volume/Weight	30.4	30.4	30.2	30.3	30.5
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	1121X	1121X	1121X	1121X	1121X
Preparation Date	11.21.96	11.21.96	11.21.96	11.21.96	11.21.96
Preparation Time	2030	2030	2030	2030	2030
Analysis Time	0851	1120	1158	2003	1926
Date Analyzed	12.07.96	12.07.96	12.07.96	12.07.96	12.07.96
RES Code	PP01	PP01	PP01	PP01	PP01
Instrument ID	SGPFID	SGPFID	SGPFID	SGPFID	SGPFID

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LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-6	SB0902*CS*SB09(10-12)	11-19-96/1045	HAA45
86824-7	SB1001*CS*SB10(4-6)	11-19-96/1110	HAA45
86824-8	SB1002*CS*SB10(10-12)	11-19-96/1120	HAA45
86824-9	SB1101*CS*SB11(4-6)	11-19-96/1405	HAA45
86824-10	SB1102*CS*SB11(10-12)	11-19-96/1410	HAA45

Pump House #2

PARAMETER	86824-6	86824-7	86824-8	86824-9	86824-10
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	18	24	26	23	35
Surrogate - o-Terphenyl	66 %	88 %	84 %	107 %	76 %
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Extracted	11.21.96	11.21.96	11.21.96	11.21.96	11.21.96
Date Analyzed	11.27.96	11.27.96	11.27.96	11.29.96	11.28.96
Batch ID	1121X	1121X	1121X	1121X	1121X
Instrument ID	SGQFID	SGQFID	SGQFID	SGQFID	SGQFID
PF Code	T	T	T	T	T
Initial Volume/Weight	30.4	30.4	30.2	30.3	30.5
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Preparation Date	11.21.96	11.21.96	11.21.96	11.21.96	11.21.96
Preparation Time	2030	2030	2030	2030	2030
Analysis Time	2235	2311	2358	0114	1751
RES Code	PP01	PP01	PP01	PP01	PP01
Percent Solids (160.3), %	83	94	84	80	81

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-11	SB1201*CS*SB12(0-2)	11-19-96/1420	HAA45
86824-12	SB1202*CS*SB12(10-12)	11-19-96/1440	HAA45
86824-13	SB5201*CS*SB12(10-12)	11-19-96/1440	HAA45
86824-14	SB1301*CS*SB13(4-6)	11-19-96/1510	HAA45
86824-15	SB1302*CS*SB13(10-12)	11-19-96/1520	HAA45

Pumphouse #2

PARAMETER	86824-11	86824-12	86824-13	86824-14	86824-15
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<5.3	<6.2	<6.3	<5.9	<6.3
Toluene, ug/kg dw	<5.3	<6.2	<6.3	<5.9	<6.3
Ethylbenzene, ug/kg dw	<5.3	<6.2	<6.3	15	<6.3
Xylenes, ug/kg dw	<5.3	7.8	<6.3	52	9.1
Methyl tert-butyl ether (MTBE), ug/kg dw	<53	<62	<63	<59	<63
Surrogate - F3-Toluene	106 %	89 %	100 %	94 %	100 %
PF Code	T	T	T	T	T
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	1122A	1122A	1122A	1122A	1122A
Preparation Date	11.22.96	12.02.96	11.23.96	11.29.96	11.29.96
Preparation Time	2247	1509	0015	1610	1654
Analysis Time	2247	1509	0015	1610	1654
Date Analyzed	11.22.96	12.02.96	11.23.96	11.29.96	11.29.96
RES Code	PP01	PP01	PD01	PP01	PP01
Initial Volume/Weight	5.0	5.0	5.0	5.0	5.0
Final Extraction Volume (FV1)	5.0	5.0	5.0	5.0	5.0
Clock ID	1D1122	1D1202	1D1122	1D1129	1D1129

DUPLICATE

SL *SAVANNAH LABORATORIES*
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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-11	SB1201*CS*SB12(0-2)	11-19-96/1420	HAA45
86824-12	SB1202*CS*SB12(10-12)	11-19-96/1440	HAA45
86824-13	SB5201*CS*SB12(10-12)	11-19-96/1440	HAA45
86824-14	SB1301*CS*SB13(4-6)	11-19-96/1510	HAA45
86824-15	SB1302*CS*SB13(10-12)	11-19-96/1520	HAA45

Pumphouse #2

PARAMETER	86824-11	86824-12	86824-13	86824-14	86824-15
Gasoline Range Organics (8015M)					
Hydrocarbons as GRO, mg/kg dw	<0.19	1.1	<0.23	2.4	0.74
Surrogate - a,a,a-Trifluorotoluene	81 %	54 %	100 %	100 %	95 %
Preparation Date	11.22.96	12.02.96	11.23.96	11.29.96	11.29.96
Preparation Time	2247	1509	0015	1610	1654
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Analyzed	11.22.96	12.02.96	11.23.96	11.29.96	11.29.96
Batch ID	1122A	1122A	1122A	1122A	1122A
Clock ID	1D1122	1D1202	1D1122	1D1129	1D1129
PF Code	T	T	T	T	T
Initial Volume/Weight	5.0	5.0	5.0	5.0	5.0
Final Extraction Volume (FV1)	5.0	5.0	5.0	5.0	5.0
Analysis Time	2247	1509	0015	1610	1654
RES Code	PP01	PP01	PD01	PP01	PP01

DUPLICATE

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-11	SB1201*CS*SB12(0-2)	11-19-96/1420	HAA45
86824-12	SB1202*CS*SB12(10-12)	11-19-96/1440	HAA45
86824-13	SB5201*CS*SB12(10-12)	11-19-96/1440	HAA45
86824-14	SB1301*CS*SB13(4-6)	11-19-96/1510	HAA45
86824-15	SB1302*CS*SB13(10-12)	11-19-96/1520	HAA45

Pumphouse #2

PARAMETER	86824-11	86824-12	86824-13	86824-14	86824-15
Polynuclear Aromatic HC (8100)					
Acenaphthene, ug/kg dw	<350	<410	<420	<390	<420
Acenaphthylene, ug/kg dw	<350	<410	<420	<390	<420
Benzo(a)pyrene, ug/kg dw	<350	<410	<420	<390	<420
Benzo(g,h,i)perylene, ug/kg dw	<350	<410	<420	<390	<420
Benzo(b,k)fluoranthene, ug/kg dw	<350	<410	<420	<390	<420
Chrysene + Benzo(a)anthracene, ug/kg dw	<350	<410	<420	<390	<420
Fluoranthene, ug/kg dw	<350	<410	<420	<390	<420
Fluorene, ug/kg dw	<350	<410	<420	<390	<420
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<350	<410	<420	<390	<420
Naphthalene, ug/kg dw	<350	<410	<420	<390	<420
Phenanthrene + Anthracene, ug/kg dw	<350	<410	<420	<390	<420
Pyrene, ug/kg dw	<350	<410	<420	<390	<420
1-Methylnaphthalene, ug/kg dw	<350	<410	<420	<390	<420
2-Methylnaphthalene, ug/kg dw	<350	<410	<420	<390	<420
Surrogate - 2-Fluorobiphenyl	59 %	39 %	45 %	55 %	48 %
PF Code	T	T	T	T	T

DUPLICATE

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LOG NO: S6-86824
Received: 20 NOV 96
Reported: 20 DEC 96

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA45/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 151561220

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-11	SB1201*CS*SB12(0-2)	11-19-96/1420	HAA45
86824-12	SB1202*CS*SB12(10-12)	11-19-96/1440	HAA45
86824-13	SB5201*CS*SB12(10-12)	11-19-96/1440	HAA45
86824-14	SB1301*CS*SB13(4-6)	11-19-96/1510	HAA45
86824-15	SB1302*CS*SB13(10-12)	11-19-96/1520	HAA45

PUMPHOUSE #2

PARAMETER	86824-11	86824-12	86824-13	86824-14	86824-15
Initial Volume/Weight	30.1	30.0	29.8	29.8	30.4
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	1121X	1121X	1121X	1121X	1121X
Preparation Date	11.21.96	11.21.96	11.21.96	11.21.96	11.21.96
Preparation Time	2030	2030	2030	2030	2030
Analysis Time	0928	0238	0124	0316	1006
Date Analyzed	12.07.96	12.07.96	12.07.96	12.07.96	12.07.96
RES Code	PP01	PP01	PD01	PP01	PP01
Instrument ID	SGPFID	SGPFID	SGPFID	SGPFID	SGPFID

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-11	SB1201*CS*SB12(0-2)	11-19-96/1420	HAA45
86824-12	SB1202*CS*SB12(10-12)	11-19-96/1440	HAA45
86824-13	SB5201*CS*SB12(10-12) PUMPHOUSE #2	11-19-96/1440	HAA45
86824-14	SB1301*CS*SB13(4-6)	11-19-96/1510	HAA45
86824-15	SB1302*CS*SB13(10-12)	11-19-96/1520	HAA45

PARAMETER	86824-11	86824-12	86824-13	86824-14	86824-15
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	<10	<12	<13	<12	<13
Surrogate - o-Terphenyl	83 %	96 %	85 %	76 %	92 %
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Extracted	11.21.96	11.21.96	11.21.96	11.21.96	11.21.96
Date Analyzed	11.28.96	11.27.96	11.27.96	11.27.96	11.28.96
Batch ID	1121X	1121X	1121X	1121X	1121X
Instrument ID	SGQFID	SGQFID	SGQFID	SGQFID	SGQFID
PF Code	T	T	T	T	T
Initial Volume/Weight	30.1	30.0	29.8	29.8	30.4
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Preparation Date	11.21.96	11.21.96	11.21.96	11.21.96	11.21.96
Preparation Time	2030	2030	2030	2030	2030
Analysis Time	0417	1227	0708	0745	0531
RES Code	PP01	PP01	PD01	PP01	PP01
Percent Solids (160.3), %	95	81	79	85	79

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LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-16	SB1401*CS*SB14(4-6) } Pumphouse #2	11-19-96/1550	HAA45
86824-17	SB1402*CS*SB14(10-12) }	11-19-96/1600	HAA45
86824-18	WB0301*CS*MW03(8-10) } Pumphouse #1	11-19-96/0857	HAA45
86824-19	WB0302*CS*MW03(13-15) }	11-19-96/0906	HAA45
86824-20	WB0401*CS*MW04(2-4) } Pumphouse #2	11-19-96/1008	HAA45

PARAMETER	86824-16	86824-17	86824-18	86824-19	86824-20
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<5.3	<6.2	<60000	<6200	<5.3
Toluene, ug/kg dw	<5.3	<6.2	160000	12000	<5.3
Ethylbenzene, ug/kg dw	<5.3	<6.2	96000	6600	<5.3
Xylenes, ug/kg dw	<5.3	<6.2	260000	16000	<5.3
Methyl tert-butyl ether (MTBE), ug/kg dw	<53	<62	<600000	<62000	<53
Surrogate - F3-Toluene	106 %	105 %	*F33	*F33	106 %
PF Code	T	T	T	T	T
Dilution factor	1.0	1.0	10000.0	1000.0	1.0
Batch ID	1122A	1122A	1122B	1122B	1122A
Preparation Date	11.29.96	11.29.96	11.25.96	11.26.96	11.29.96
Preparation Time	1739	1823	2345	1816	1907
Analysis Time	1739	1823	2345	1816	1907
Date Analyzed	11.29.96	11.29.96	11.25.96	11.26.96	11.29.96
RES Code	PP01	PP01	PP01	PP01	PP01
Initial Volume/Weight	5.0	5.0	5.0	5.0	5.0
Final Extraction Volume (FV1)	5.0	5.0	10	10	5.0
Clock ID	1D1129	1D1129	1E1125	1E1126	1D1129

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
86824-16	SB1401*CS*SB14(4-6)	} Pumphouse # 2	11-19-96/1550	HAA45
86824-17	SB1402*CS*SB14(10-12)		11-19-96/1600	HAA45
86824-18	WB0301*CS*MW03(8-10)	} Pumphouse # 1	11-19-96/0857	HAA45
86824-19	WB0302*CS*MW03(13-15)		11-19-96/0906	HAA45
86824-20	WB0401*CS*MW04(2-4)	} Pumphouse # 2	11-19-96/1008	HAA45

PARAMETER	86824-16	86824-17	86824-18	86824-19	86824-20
Gasoline Range Organics (8015M)					
Hydrocarbons as GRO, mg/kg dw	<0.19	0.28	21000	1400	<0.19
Surrogate - a,a,a-Trifluorotoluene	75 %	84 %	*F33	*F33	47 %
Preparation Date	11.29.96	11.29.96	11.25.96	11.26.96	11.29.96
Preparation Time	1739	1823	2345	1816	1907
Dilution factor	1.0	1.0	10000.0	1000.0	1.0
Date Analyzed	11.29.96	11.29.96	11.25.96	11.26.96	11.29.96
Batch ID	1122A	1122A	1122B	1122B	1122A
Clock ID	1D1129	1D1129	1E1125	1E1126	1D1129
PF Code	T	T	T	T	T
Initial Volume/Weight	5.0	5.0	5.0	5.0	5.0
Final Extraction Volume (FV1)	5.0	5.0	10	10	5.0
Analysis Time	1739	1823	2345	1816	1907
RES Code	PP01	PP01	PP01	PP01	PP01

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86824-16	SB1401*CS*SB14(4-6)	Pump House # 2	11-19-96/1550	HAA45
86824-17	SB1402*CS*SB14(10-12)		11-19-96/1600	HAA45
86824-18	WB0301*CS*MW03(8-10)	Pump House #1	11-19-96/0857	HAA45
86824-19	WB0302*CS*MW03(13-15)		11-19-96/0906	HAA45
86824-20	WB0401*CS*MW04(2-4)	Pump House # 2	11-19-96/1008	HAA45

PARAMETER	86824-16	86824-17	86824-18	86824-19	86824-20
Polynuclear Aromatic HC (8100)					
Acenaphthene, ug/kg dw	<350	<410	<400	<410	<700*F34
Acenaphthylene, ug/kg dw	<350	<410	<400	<410	<700
Benzo(a)pyrene, ug/kg dw	<350	<410	<400	<410	<700
Benzo(g,h,i)perylene, ug/kg dw	<350	<410	<400	<410	<700
Benzo(b,k)fluoranthene, ug/kg dw	<350	<410	<400	610	<700
Chrysene + Benzo(a)anthracene, ug/kg dw	<350	<410	<400	600X	<700
Fluoranthene, ug/kg dw	<350	<410	420X	1100	<700
Fluorene, ug/kg dw	<350	<410	<400	<410	<700
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<350	<410	<400	<410	<700
Naphthalene, ug/kg dw	<350	<410	<400	<410	<700
Phenanthrene + Anthracene, ug/kg dw	<350	<410	<400	580	<700
Pyrene, ug/kg dw	<350	<410	<400	700X	<700
1-Methylnaphthalene, ug/kg dw	<350	<410	<400	<410	<700
2-Methylnaphthalene, ug/kg dw	<350	<410	<400	<410	<700
Surrogate - 2-Fluorobiphenyl	53 %	52 %	55 %	49 %	40 %
PF Code	T	T	T	T	T

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
86824-16	SB1401*CS*SB14(4-6)	Pumphouse # 2	11-19-96/1550	HAA45
86824-17	SB1402*CS*SB14(10-12)		11-19-96/1600	HAA45
86824-18	WB0301*CS*MW03(8-10)	Pumphouse #1	11-19-96/0857	HAA45
86824-19	WB0302*CS*MW03(13-15)		11-19-96/0906	HAA45
86824-20	WB0401*CS*MW04(2-4)	Pumphouse # 2	11-19-96/1008	HAA45

PARAMETER	86824-16	86824-17	86824-18	86824-19	86824-20
Initial Volume/Weight	30.4	29.6	30.4	30.1	30.3
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Dilution factor	1.0	1.0	1.0	1.0	2.0
Batch ID	1121X	1121X	1121X	1121X	1121Y
Preparation Date	11.21.96	11.21.96	11.21.96	11.21.96	11.21.96
Preparation Time	2030	2030	2030	2030	2230
Analysis Time	0353	0430	1043	1849	0846
Date Analyzed	12.07.96	12.07.96	12.07.96	12.07.96	12.10.96
RES Code	PP01	PP01	PP01	PP01	PP01
Instrument ID	SGPFID	SGPFID	SGPFID	SGPFID	SGPFID

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86824-16	SB1401*CS*SB14(4-6)	Pumphouse #2	11-19-96/1550	HAA45
86824-17	SB1402*CS*SB14(10-12)		11-19-96/1600	HAA45
86824-18	WB0301*CS*MW03(8-10)	Pumphouse #1	11-19-96/0857	HAA45
86824-19	WB0302*CS*MW03(13-15)		11-19-96/0906	HAA45
86824-20	WB0401*CS*MW04(2-4)	Pumphouse #2	11-19-96/1008	HAA45

PARAMETER	86824-16	86824-17	86824-18	86824-19	86824-20
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	<11	<12	23	27	370
Surrogate - o-Terphenyl	88 %	78 %	89 %	89 %	*F33
Dilution factor	1.0	1.0	1.0	1.0	10.0
Date Extracted	11.21.96	11.21.96	11.21.96	11.21.96	11.21.96
Date Analyzed	11.27.96	11.27.96	11.28.96	11.28.96	12.10.96
Batch ID	1121X	1121X	1121X	1121X	1121Y
Instrument ID	SGQFID	SGQFID	SGQFID	SGQFID	SGQFID
PF Code	T	T	T	T	T
Initial Volume/Weight	30.4	29.6	30.4	30.1	30.3
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Preparation Date	11.21.96	11.21.96	11.21.96	11.21.96	11.21.96
Preparation Time	2030	2030	2030	2030	2230
Analysis Time	1036	1113	0454	1828	1015
RES Code	PP01	PP01	PP01	PP01	PP01
Percent Solids (160.3), %	94	80	83	81	94

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Code: 144470120

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-21	WB0402*CS*MW04(13-15)	11-19-96/1033	HAA45
86824-22	WB0501*CS*MW05(8-10)	11-19-96/1425	HAA45
86824-23	WB0502*CS*MW05(13-15)	11-19-96/1439	HAA45
86824-24	WB0601*CS*MW06(9-11)	11-19-96/1539	HAA45
86824-25	WB0602*CS*MW06(14-16)	11-19-96/1556	HAA45

Pump House #2

PARAMETER	86824-21	86824-22	86824-23	86824-24	86824-25
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<1.4	<21	<1.5	<54	280J
Toluene, ug/kg dw	<19	<280	<20	720J	820
Ethylbenzene, ug/kg dw	<18	1000	<19	7200	<300
Xylenes, ug/kg dw	<6.6	1600	<6.9	13000	570J
Methyl tert-butyl ether (MTBE), ug/kg dw	<140	<2100	<150	<5400	<2400
Surrogate - F3-Toluene	79 %	142 %	86 %	*F36	125 %
PF Code	T	T	T	T	T
Dilution factor	5.0	80.0	5.0	200.0	80.0
Batch ID	1122A	1122B	1122A	1122B	1122B
Preparation Date	11.29.96	11.25.96	12.03.96	11.25.96	11.25.96
Preparation Time	1952	1815	2004	2005	1720
Analysis Time	1952	1815	2004	2005	1720
Date Analyzed	11.29.96	11.25.96	12.03.96	11.25.96	11.25.96
RES Code	PP01	PP01	PP01	PP01	PP01
Initial Volume/Weight	1.0	5.0	1.0	5.0	5.0
Final Extraction Volume (FV1)	5.0	10	5.0	10	10
Clock ID	1D1129	1E1125	1D1203	1E1125	1E1125

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86824-21	WB0402*CS*MW04(13-15)	11-19-96/1033	HAA45
86824-22	WB0501*CS*MW05(8-10)	11-19-96/1425	HAA45
86824-23	WB0502*CS*MW05(13-15)	11-19-96/1439	HAA45
86824-24	WB0601*CS*MW06(9-11)	11-19-96/1539	HAA45
86824-25	WB0602*CS*MW06(14-16)	11-19-96/1556	HAA45

Pumphouse #2

PARAMETER	86824-21	86824-22	86824-23	86824-24	86824-25
Gasoline Range Organics (8015M)					
Hydrocarbons as GRO, mg/kg dw	6.6	200	4.3	1600	56
Surrogate - a,a,a-Trifluorotoluene	74 %	169 %*F53	74 %	*F33	93 %
Preparation Date	11.29.96	11.25.96	12.03.96	11.29.96	11.25.96
Preparation Time	1952	1815	2004	2245	1720
Dilution factor	5.0	80.0	5.0	1000.0	80.0
Date Analyzed	11.29.96	11.25.96	12.03.96	11.29.96	11.25.96
Batch ID	1122A	1122B	1122A	1122B	1122B
Clock ID	1D1129	1E1125	1D1203	1E1129	1E1125
PF Code	T	T	T	T	T
Initial Volume/Weight	1.0	5.0	1.0	5.0	5.0
Final Extraction Volume (FV1)	5.0	10	5.0	10	10
Analysis Time	1952	1815	2004	2245	1720
RES Code	PP01	PP01	PP01	PP01	PP01

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-21	WB0402*CS*MW04(13-15)	11-19-96/1033	HAA45
86824-22	WB0501*CS*MW05(8-10)	11-19-96/1425	HAA45
86824-23	WB0502*CS*MW05(13-15) Pump House # 2	11-19-96/1439	HAA45
86824-24	WB0601*CS*MW06(9-11)	11-19-96/1539	HAA45
86824-25	WB0602*CS*MW06(14-16)	11-19-96/1556	HAA45

PARAMETER	86824-21	86824-22	86824-23	86824-24	86824-25
Polynuclear Aromatic HC (8100)					
Acenaphthene, ug/kg dw	<400	<360	<410	<370	<410
Acenaphthylene, ug/kg dw	<400	<360	<410	<370	<410
Benzo(a)pyrene, ug/kg dw	<400	<360	<410	<370	530
Benzo(g,h,i)perylene, ug/kg dw	<400	<360	<410	<370	<410
Benzo(b,k)fluoranthene, ug/kg dw	<400	<360	<410	660	<410
Chrysene + Benzo(a)anthracene, ug/kg dw	<400	440	570	1500X	1300X
Fluoranthene, ug/kg dw	<400	1200	<410	2500	<410
Fluorene, ug/kg dw	<400	<360	<410	<370	<410
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<400	<360	<410	<370	<410
Naphthalene, ug/kg dw	<400	<360	<410	<370	<410
Phenanthrene + Anthracene, ug/kg dw	<400	1500X	<410	2300X	<410
Pyrene, ug/kg dw	<400	1200	<410	2500	<410
1-Methylnaphthalene, ug/kg dw	<400	<360	<410	<370	<410
2-Methylnaphthalene, ug/kg dw	<400	<360	<410	<370	<410
Surrogate - 2-Fluorobiphenyl	55 %	67 %	48 %	67 %	60 %
PF Code	T	T	T	T	T

SL *SAVANNAH LABORATORIES*
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S6-86824
Received: 20 NOV 96
Reported: 20 DEC 96
Revised: 20 JAN 97
Client PO. No.: 90534

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA45/019457-4102/HUNTER IV/TO#18/
Sampled By: Client
Code: 144470120

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-21	WB0402*CS*MW04(13-15)	11-19-96/1033	HAA45
86824-22	WB0501*CS*MW05(8-10)	11-19-96/1425	HAA45
86824-23	WB0502*CS*MW05(13-15)	11-19-96/1439	HAA45
86824-24	WB0601*CS*MW06(9-11)	11-19-96/1539	HAA45
86824-25	WB0602*CS*MW06(14-16)	11-19-96/1556	HAA45

Pump House #2

PARAMETER	86824-21	86824-22	86824-23	86824-24	86824-25
Initial Volume/Weight	30.4	30.4	30.1	30.3	30.4
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	1121Y	1121Y	1121Y	1121Y	1121Y
Preparation Date	11.21.96	11.21.96	11.21.96	11.21.96	11.21.96
Preparation Time	2230	2230	2230	2230	2230
Analysis Time	0220	0257	0143	0335	0105
Date Analyzed	12.06.96	12.06.96	12.06.96	12.06.96	12.06.96
RES Code	PP01	PP01	PP01	PP01	PP01
Instrument ID	SGPFID	SGPFID	SGPFID	SGPFID	SGPFID

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& ENVIRONMENTAL SERVICES, INC.

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Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA45/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 144470120

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
86824-21	WB0402*CS*MW04(13-15)	11-19-96/1033	HAA45
86824-22	WB0501*CS*MW05(8-10)	11-19-96/1425	HAA45
86824-23	WB0502*CS*MW05(13-15) Pumphouse #2	11-19-96/1439	HAA45
86824-24	WB0601*CS*MW06(9-11)	11-19-96/1539	HAA45
86824-25	WB0602*CS*MW06(14-16)	11-19-96/1556	HAA45

PARAMETER	86824-21	86824-22	86824-23	86824-24	86824-25
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	<12	49	34	<11	<12
Surrogate - o-Terphenyl	90 %	79 %	92 %	57 %	68 %
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Extracted	11.21.96	11.21.96	11.21.96	11.21.96	11.21.96
Date Analyzed	11.27.96	11.27.96	11.27.96	11.28.96	11.27.96
Batch ID	1121Y	1121Y	1121Y	1121Y	1121Y
Instrument ID	SGQFID	SGQFID	SGQFID	SGQFID	SGQFID
PF Code	T	T	T	T	T
Initial Volume/Weight	30.4	30.4	30.1	30.3	30.4
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Preparation Date	11.21.96	11.21.96	11.21.96	11.21.96	11.21.96
Preparation Time	2230	2230	2230	2230	2230
Analysis Time	2044	2121	1303	0608	0631
RES Code	PP01	PP01	PP01	PP01	PP01
Percent Solids (160.3), %	83	91	80	89	80

(2)

HAA46

CHAIN - OF - CUSTODY - RECORD

M&E Metcalf & Eddy

PROJECT NAME: Hunter IV

PROJECT NO: 019457-4102

LABORATORY ID: ~~SAIC~~ SAIL SLS

SAMPLER(S) NAME: Daniel Howard

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: Daniel Howard

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)	FILTERED (L) LAB (F) FIELD
11/19/96	0910	S	SB0701	SB07	PP01	4/6	2	N	—
	0915	S	SB0702	SB07	PP01	10/12	2	N	—
	0945	S	SB0801	SB08	PP01	4/6	2	N	—
	0955	S	SB0802	SB08	PP01	10/12	2	N	—
	1040	S	SB0901	SB09	PP01	4/6	2	N	—
	1045	S	SB0902	SB09	PP01	10/12	2	N	—
	1110	S	SB1001	SB10	PP01	4/6	2	N	—
	1120	S	SB1002	SB10	PP01	10/12	2	N	—
	1405	S	SB1101	SB11	PP01	4/6	2	N	—
	1410	S	SB1102	SB11	PP01	10/12	2	N	—
	1420	S	SB1201	SB12	PP01	0/2	2	N	—
	1440	S	SB1202	SB12	PP01	10/12	2	N	—

ANALYTICAL PARAMETERS / METHODS

Method No.	VOCs BTEX+MTBE 8020	SVOC PAH 8100	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO 8-8015M	GRO 8015M	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	

Relinquished by: (Signature) Daniel Howard Date/Time: 11/19/96/1727 Received by: Mussie Haimbot (FB) Date/Time: 11.19.96 5:27

Cooler Temperature:

Remarks: * Use sample SB1102 as MS/MSD also 5686824

AIRBILL CO. Hand Delivered By M&E

TRACKING NO:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):

(H) HCl/VOC
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER

STORED/SHIPPED IN ICE (Y)N

(2)

CHAIN - OF - CUSTODY - RECORD

M&E Metcalf & Eddy

PROJECT NAME: Hunter IV

PROJECT NO: 019457-4102

LABORATORY ID: SLS

SAMPLER(S) NAME: Daniel Howard

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: Daniel Howard

ANALYTICAL PARAMETERS/METHODS

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F) FIELD	VOCs BTEX & MTBE 8020	SVOC PAH 8100	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO 8100M	GRO 8015M	
11/19/96	1440	S	SB5201	SB 12	PD1	10/12	2	N	—	X	X					X	X	
	1510	S	SB1301	SB13	PP01	4/6	2	N	—	X	X					X	X	
	1520	S	SB1302	~~SB16~~ SB13	PP01	10/12	2	N	—	X	X					X	X	
	1550	S	SB1401	SB14	PP01	4/6	2	N	—	X	X					X	X	
	1600	S	SB1402	SB14	PP01	10/12	2	N	—	X	X					X	X	
↓	—	—	TEMP	Blank	—		1	—	—									

Relinquished by: (Signature) Daniel Howard Date/Time: 11/19/96/1727

Received by: Maine Hamblett (B) Date/Time: 11.19.96 5:27

S686824

Cooler Temperature:

Remarks:

AIRBILL CO. Hand Delivered By M+E

TRACKING NO:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):

(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____

STORED/SHIPPED IN ICE (Y)/N

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter IV

PROJECT NO: 019457-4102

LABORATORY ID: SLS

SAMPLER(S) NAME: Daniel Howard

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: Daniel Howard

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F) FIELD
11/19/96	0857	S	WB0301	MW03	PP01	8/10	2	N	—
	0906	S	WB0302	MW03	PP01	13/15	2	N	—
	1008	S	WB0401	MW04	PP01	2/4	2	N	—
	1033	S	WB0402	MW04	PP01	13/15	2	N	—
	1425	S	WB0501	MW05	PP01	8/10	2	N	—
	1439	S	WB0502	MW05	PP01	13/15	2	N	—
	1539	S	WB0601	MW06	PP01	9/11	2	N	—
	1556	S	WB0602	MW06	PP01	14/16	2	N	—
↓	—	—	TEMP	Blank	—		1	—	—

ANALYTICAL PARAMETER METHODS

MTBE	VOCs BTEX	SVOC PAH	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	CB	TPH/DRO	GRO	
Method No.	8020	8100					8100M	8015M	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	

Relinquished by: (Signature) Daniel Howard Date/Time: 11/19/96/1728 Received by: Marie Hornbeck(A) Date/Time: 11.19.96 5:29

Remarks: Use sample WB0502 as MS/MSD also 386824

Cooler Temperature:

AIRBILL CO. Hand Delivered by M+E

TRACKING NO:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):

(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____

STORED/SHIPPED IN ICE (Y)/N

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

LOG NO: T6-13380
Received: 20 NOV 96
Reported: 10 DEC 96
Revised: 22 JAN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA46/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 175270122

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
13380-1	SB1501*CS*SB15(0-2)*SB15 } Pump House #2	11-20-96/0815	HAA46
13380-2	SB1502*CS*SB15(4-6)*SB15 }	11-20-96/0825	HAA46
13380-3	SB1601*CS*SB16(4-6)*SB16	11-20-96/0855	HAA46
13380-4	SB1602*CS*SB16(8-10)*SB16	11-20-96/0900	HAA46
13380-5	SB5301*CS*SB16(4-6)*SB16	11-20-96/0855	HAA46

PARAMETER	13380-1	13380-2	13380-3	13380-4	13380-5
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<5.4	<5.7	<570	<6100	<570
Toluene, ug/kg dw	<5.4	<5.7	<570	8600	<570
Ethylbenzene, ug/kg dw	<5.4	<5.7	2100	39000	1400
Xylenes, ug/kg dw	<5.4	<5.7	3100	76000	1100
Methyl-tert-butyl ether (MTBE), ug/kg dw	<54	<57	<5700	<61000	<5700
Surrogate - a,a,a-Trifluorotoluene	99 %	89 %	78 %	159 %*F53	114 %
Batch ID	1202E	1202E	1127C	1127C	1127C
Clock ID	1I1127	1I1129	1I1204	2I1204	1I1204
PF Code	T	T	T	T	T
Preparation Date	11.27.96	11.29.96	12.03.96	12.04.96	12.03.96
Preparation Time	2215	1556	1100	1100	1100
Initial Volume/Weight	5.05g	4.98g	4.02g	4.05g	4.02g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	1.0	1.0	80	800	80
Date Analyzed	11.27.96	11.29.96	12.04.96	12.04.96	12.04.96
Analysis Time	2215	1556	1616	2053	1646
RES Code	PP01	PP01	PP01	PP01	PD11

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

LOG NO: T6-13380
Received: 20 NOV 96
Reported: 10 DEC 96
Revised: 22 JAN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA46/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 175270122

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
13380-1	SB1501*CS*SB15(0-2)*SB15 } Pumphouse #2	11-20-96/0815	HAA46
13380-2	SB1502*CS*SB15(4-6)*SB15 }	11-20-96/0825	HAA46
13380-3	SB1601*CS*SB16(4-6)*SB16	11-20-96/0855	HAA46
13380-4	SB1602*CS*SB16(8-10)*SB16	11-20-96/0900	HAA46
13380-5	SB5301*CS*SB16(4-6)*SB16	11-20-96/0855	HAA46

PARAMETER	13380-1	13380-2	13380-3	13380-4	13380-5
Gasoline Range Organics (8015M)					
Gasoline Range Organics, mg/kg dw	<0.27	<0.28	95	1700	80
Surrogate - a,a,a-Trifluorotoluene	109 %	95 %	69 %	196%*F53	86 %
Batch ID	1202E	1202E	1127C	1127C	1127C
Clock ID	1I1127	1I1129	1I1204	2I1204	1I1204
PF Code	T	T	T	T	T
Preparation Date	11.27.96	11.29.96	12.03.96	12.04.96	12.03.96
Preparation Time	2215	1556	1100	1100	1100
Initial Volume/Weight	5.05g	4.98g	4.02g	4.05g	4.02g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	1.0	1.0	80	800	80
Date Analyzed	11.27.96	11.29.96	12.04.96	12.04.96	12.04.96
Analysis Time	2215	1556	1616	2053	1646
RES Code	PP01	PP01	PP01	PP01	PD11

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Project: HAA46/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 175270122

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
13380-1	SB1501*CS*SB15(0-2)*SB15 } Pump House #2	11-20-96/0815	HAA46
13380-2	SB1502*CS*SB15(4-6)*SB15 } Pump House #2	11-20-96/0825	HAA46
13380-3	SB1601*CS*SB16(4-6)*SB16	11-20-96/0855	HAA46
13380-4	SB1602*CS*SB16(8-10)*SB16	11-20-96/0900	HAA46
13380-5	SB5301*CS*SB16(4-6)*SB16	11-20-96/0855	HAA46

PARAMETER	13380-1	13380-2	13380-3	13380-4	13380-5
Polynuclear Aromatic Hydrocarbons (8100)					
Acenaphthene, ug/kg dw	<360	<380	<31000*F65	<8100	<31000*F65
Acenaphthylene, ug/kg dw	<360	<380	<31000*F65	<8100	<31000*F65
Benzo(a)pyrene, ug/kg dw	<360	<380	<31000*F65	<8100	<31000*F65
Benzo(g,h,i)perylene, ug/kg dw	<360	<380	<31000*F65	<8100	<31000*F65
Benzo(b,k)fluoranthene, ug/kg dw	<360	<380	<31000*F65	<8100	<31000*F65
Chrysene + Benzo(a)anthracene, ug/kg dw	<360	<380	<31000*F65	<8100	<31000*F65
Fluoranthene, ug/kg dw	<360	<380	<31000*F65	<8100	<31000*F65
Fluorene, ug/kg dw	<360	<380	<31000*F65	<8100	<31000*F65
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<360	<380	<31000*F65	<8100	<31000*F65
Naphthalene, ug/kg dw	<360	<380	<31000*F65	<8100	<31000*F65
Phenanthrene + Anthracene, ug/kg dw	<360	<380	<31000*F65	<8100	<31000*F65
Pyrene, ug/kg dw	<360	<380	<31000*F65	<8100	<31000*F65
1-Methylnaphthalene, ug/kg dw	<360	<380	<31000*F65	12000	<31000*F65
2-Methylnaphthalene, ug/kg dw	<360	<380	<31000*F65	16000	<31000*F65
Surrogate - 2-Fluorobiphenyl	65 %	74 %	*F33	*F33	*F33
Batch ID	1202H	1202H	1202I	1202I	1202I
PF Code	T	T	T	T	T

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

LOG NO: T6-13380
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Reported: 10 DEC 96
Revised: 22 JAN 97

Ms. Christine Hettinger
Metcalf & Eddy
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Atlanta, GA 30361

Project: HAA46/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 175270122

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
13380-1	SB1501*CS*SB15(0-2)*SB15 } Pumphouse #2	11-20-96/0815	HAA46
13380-2	SB1502*CS*SB15(4-6)*SB15 }	11-20-96/0825	HAA46
13380-3	SB1601*CS*SB16(4-6)*SB16	11-20-96/0855	HAA46
13380-4	SB1602*CS*SB16(8-10)*SB16	11-20-96/0900	HAA46
13380-5	SB5301*CS*SB16(4-6)*SB16	11-20-96/0855	HAA46

PARAMETER	13380-1	13380-2	13380-3	13380-4	13380-5
Preparation Date	12.02.96	12.02.96	12.02.96	12.02.96	12.02.96
Preparation Time	1400	1400	1400	1400	1400
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	80	20	80
Date Analyzed	12.05.96	12.04.96	12.05.96	12.05.96	12.05.96
Analysis Time	1006	1653	2058	2158	2028
RES Code	PP01	PP01	PP01	PP01	PD11
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	4.2	7.7	4800	2500	4300
Surrogate - o-Terphenyl	78 %	101 %	*F33	*F33	*F33
Batch ID	1202H	1202H	1202I	1202I	1202I
PF Code	T	T	T	T	T
Preparation Date	12.02.96	12.02.96	12.02.96	12.02.96	12.02.96
Preparation Time	1400	1400	1400	1400	1400
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	80	20	80
Date Analyzed	12.05.96	12.04.96	12.05.96	12.05.96	12.05.96
Analysis Time	1006	1653	2058	2158	2028
RES Code	PP01	PP01	PP01	PP01	PD11
Percent Solids, %	92 %	88 %	87 %	81 %	88 %

SL SAVANNAH LABORATORIES
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2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

LOG NO: T6-13380
Received: 20 NOV 96
Reported: 10 DEC 96
Revised: 22 JAN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA46/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 180370122

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
13380-25	WB0902*CS*MW09(13-15)*MW09	11-20-96/1430	HAA46
13380-26	WB1001*CS*MW10(8-10)*MW10 } Pump House #2	11-20-96/1546	HAA46
13380-26-DL	WB1001*CS*MW10(8-10)*MW10 } Pump House #2	11-20-96/1546	HAA46
13380-27	WB1002*CS*MW10(13-15)*MW10 } Pump House #2	11-20-96/1554	HAA46

PARAMETER	13380-25	13380-26	13380-26-DL	13380-27
Purgeable Aromatics (8020)				
Benzene, ug/kg dw	<6.1	<6200	1600	<6.1
Toluene, ug/kg dw	<6.1	<6200	830	<6.1
Ethylbenzene, ug/kg dw	<6.1	14000	E	6.6
Xylenes, ug/kg dw	12	49000	E	91
Methyl-tert-butyl ether (MTBE), ug/kg dw	<61	<62000	<3100	<61
Surrogate - a,a,a-Trifluorotoluene	95 %	159%*F53	608%*F53	96 %
Batch ID	1202E	1127C	1127C	1127C
Clock ID	1I1130	2I1204	1I1203	1I1204
PF Code	T	T	T	T
Preparation Date	11.30.96	12.04.96	12.03.96	12.04.96
Preparation Time	1729	1100	1100	1215
Initial Volume/Weight	5.05g	4.00g	4.00g	5.01g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	1.0	800	40	1.0
Date Analyzed	11.30.96	12.04.96	12.03.96	12.04.96
Analysis Time	1729	1221	2355	1215
RES Code	PP01	PP01	PP02	PP01

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LOG NO: T6-13380
Received: 20 NOV 96
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Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA46/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 175270122

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
13380-25	WB0902*CS*MW09(13-15)*MW09	11-20-96/1430	HAA46
13380-26	WB1001*CS*MW10(8-10)*MW10 } Pump House #2	11-20-96/1546	HAA46
13380-26-DL	WB1001*CS*MW10(8-10)*MW10 } Pump House #2	11-20-96/1546	HAA46
13380-27	WB1002*CS*MW10(13-15)*MW10 } Pump House #2	11-20-96/1554	HAA46

PARAMETER	13380-25	13380-26	13380-26-DL	13380-27
Gasoline Range Organics (8015M)				
Gasoline Range Organics, mg/kg dw	<0.30	4700		0.71
Surrogate - a,a,a-Trifluorotoluene	103 %	207 %*F53		110 %
Batch ID	1202E	1127C		1127C
Clock ID	1I1129	2I1204		1I1204
PF Code	T	T		T
Preparation Date	11.30.96	12.04.96		12.04.96
Preparation Time	1729	1100		1215
Initial Volume/Weight	5.05g	4.00g		5.01g
Final Extraction Volume (FV1)	5.0ml	5.0ml		5.0ml
Dilution factor	1.0	800		1.0
Date Analyzed	11.30.96	12.04.96		12.04.96
Analysis Time	1729	2121		1215
RES Code	PP01	PP01		PP01

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& ENVIRONMENTAL SERVICES, INC.

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Received: 20 NOV 96
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Revised: 22 JAN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA46/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 175270122

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
13380-25	WB0902*CS*MW09(13-15)*MW09	11-20-96/1430	HAA46
13380-26	WB1001*CS*MW10(8-10)*MW10 } Pumphouse #2	11-20-96/1546	HAA46
13380-26-DL	WB1001*CS*MW10(8-10)*MW10 } Pumphouse #2	11-20-96/1546	HAA46
13380-27	WB1002*CS*MW10(13-15)*MW10 } Pumphouse #2	11-20-96/1554	HAA46

PARAMETER	13380-25	13380-26	13380-26-DL	13380-27
Polynuclear Aromatic Hydrocarbons (8100)				
Acenaphthene, ug/kg dw	<410	<410		<410
Acenaphthylene, ug/kg dw	<410	<410		<410
Benzo(a)pyrene, ug/kg dw	<410	<410		<410
Benzo(g,h,i)perylene, ug/kg dw	<410	<410		<410
Benzo(b,k)fluoranthene, ug/kg dw	<410	<410		<410
Chrysene + Benzo(a)anthracene, ug/kg dw	<410	<410		<410
Fluoranthene, ug/kg dw	<410	<410		<410
Fluorene, ug/kg dw	<410	<410		<410
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<410	<410		<410
Naphthalene, ug/kg dw	<410	<410		<410
Phenanthrene + Anthracene, ug/kg dw	<410	<410		<410
Pyrene, ug/kg dw	<410	<410		<410
1-Methylnaphthalene, ug/kg dw	<410	<410		<410
2-Methylnaphthalene, ug/kg dw	<410	<410		<410
Surrogate - 2-Fluorobiphenyl	63 %	64 %		75 %
Batch ID	1202H	1202H		1202H
PF Code	T	T		T
Preparation Date	12.02.96	12.02.96		12.02.96

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1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA46/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 175270122

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
13380-25	WB0902*CS*MW09(13-15)*MW09	11-20-96/1430	HAA46
13380-26	WB1001*CS*MW10(8-10)*MW10 } Pump House #2	11-20-96/1546	HAA46
13380-26-DL	WB1001*CS*MW10(8-10)*MW10 } Pump House #2	11-20-96/1546	HAA46
13380-27	WB1002*CS*MW10(13-15)*MW10 } Pump House #2	11-20-96/1554	HAA46

PARAMETER	13380-25	13380-26	13380-26-DL	13380-27
Preparation Time	1400	1400		1400
Initial Volume/Weight	30g	30g		30g
Final Extraction Volume (FV1)	1.0ml	1.0ml		1.0ml
Dilution factor	1.0	1.0		1.0
Date Analyzed	12.05.96	12.05.96		12.05.96
Analysis Time	0143	0403		0450
RES Code	PP01	PP01		PP01
Diesel Range Organics (8100M)				
Hydrocarbons as DRO, mg/kg dw	4.7	10		4.7
Surrogate - o-Terphenyl	88 %	89 %		94 %
Batch ID	1202H	1202H		1202H
PF Code	T	T		T
Preparation Date	12.02.96	12.02.96		12.02.96
Preparation Time	1400	1400		1400
Initial Volume/Weight	30g	30g		30g
Final Extraction Volume (FV1)	1.0ml	1.0ml		1.0ml
Dilution factor	1.0	1.0		1.0
Date Analyzed	12.05.96	12.05.96		12.05.96
Analysis Time	0143	0403		0450
RES Code	PP01	PP01		PP01
Percent Solids, %	81 %	81 %		82 %

M&E Metcalf & Eddy

CHAIN - OF - CUSTODY - RECORD

PROJECT NAME: Hunter IV

PROJECT NO: 019457-4102

LABORATORY ID: SLS

SAMPLER(S) NAME: Daniel Howard

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: Daniel Howard

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F) FIELD
11/20/96	0815	S	SB1501	SB15	PP01	0/2	2	N	—
	0825	S	SB1502	SB15	PP01	4/6	2	N	—
	0855	S	SB1601	SB16	PP01	4/6	2	N	—
	0900	S	SB1602	SB16	PP01	8/10	2	N	—
	0855	S	SB5301	SB16	PD2	4/6	2	N	—
	1000	S	SB1701	SB17	PP01	4/6	2	N	—
	1005	S	SB1702	SB17	PP01	6/8	2	N	—
	1025	S	SB1801	SB18	PP01	1/3	2	N	—
	1035	S	SB1802	SB18	PP01	5/7	2	N	—
	1350	S	SB1901	SB19	PP01	4/6	2	N	—
	1355	S	SB1902	SB19	PP01	6/8	2	N	—
*	1420	S	SB2001	SB20	PP01	4/6	2	N	—

ANALYTICAL PARAMETERS/METHODS

Method No.	VOCs BTEX/MTBE 8020	SVOCs BNA/PAH 8100	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	T/H/DRO 8015M	GRO 8015M	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	

Relinquished by: (Signature) Daniel Howard

Date/Time: 11/20/96/1750

Received by: ~~(A)~~ (B)

Date/Time: 5:50

Cooler Temperature: 1.4°C

Remarks: * Use sample SB2001 as MS/MSD also MBasso (T613380) 11/26/96 0935

AIRBILL CO. Hand Delivered by M+E

TRACKING NO:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____
STORED/SHIPPED IN ICE (Y)/N

(2)

2 of 2

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter IV

PROJECT NO: 019457-4102

LABORATORY ID: SLS

SAMPLER(S) NAME: Daniel Howard

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: Daniel Howard

DATE	TIME - MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)	FILTERED (L) LAB (F) FIELD
11/20/96	1425	S	SB2002	SB20	PP01	6/8	2	N	—
	1450	S	SB2101 DUP	SB21	PP01	1/3	2	N	—
	1505	S	SB2102	SB21	PP01	9/11	2	N	—
	1615	S	SB2201	SB22	PP01	6/8	2	N	—
	1625	S	SB2202	SB22	PP01	8/10	2	N	—
	1625	S	SB5401	SB22	PD3	8/10	2	N	—
↓	—	—	TEMP	Blank	—		1	—	—

ANALYTICAL PARAMETERS/METHODS

Method No.	VOCs BTEX+MTBE 8020	SVOC PAH 8100	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO 8100M	GRO 8015M	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	

Relinquished by: (Signature) Daniel Howard

Date/Time: 11/20/96/1740

Received by: ~~A Campbell~~ (8) M Bass T613380

Date/Time: 11/20/96 5:40 / 11/26/96 0930

Cooler Temperature: 1.4°C

Remarks:

AIRBILL CO. Hand Delivered by M+E

TRACKING NO:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____
STORED/SHIPPED IN ICE (Y)/N

V-47

(1)

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter IV

PROJECT NO: 019457-4102

LABORATORY ID: SLS

SAMPLER(S) NAME: Daniel Howard

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: Daniel Howard

ANALYTICAL PARAMETERS/METHODS

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)	FILTERED (L) LAB (F) FIELD	VOCs BTEX+MTBE 8020	SVOC PAH 8100	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO 8100m	GRO 8015M	
11/20/96	0845	S	WB0701	MW07	PP01	9/11	2	N	—	X	X					X	X	
	0845	S	WB5601	MW07	PD1	9/11	2	N	—	X	X					X	X	
	0855	S	WB0702	MW07	PP01	14/16	2	N	—	X	X					X	X	
	1010	S	WB0801	MW08	PP01	8/10	2	N	—	X	X					X	X	
*	1018	S	WB0802	MW08	PP01	13/15	2	N	—	X	X					X	X	
	1418	S	WB0901	MW09	PP01	8/10	2	N	—	X	X					X	X	
	1430	S	WB0902	MW09	PP01	13/15	2	N	—	X	X					X	X	
	1546	S	WB1001	MW10	PP01	8/10	2	N	—	X	X					X	X	
	1554	S	WB1002	MW10	PP01	13/15	2	N	—	X	X					X	X	
↓	—	-	TEMP	Blank	—		1	—	—									

Method No.

Relinquished by: (Signature) Daniel Howard Date/Time: 11/20/96/1751

Received by: ~~(A)~~ Date/Time: 11/20/96 5:51

Remarks: * MS/MSD

Cooler Temperature: 0.6 °C

AIRBILL CO. Hand Delivered by M&E

TRACKING NO:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):

(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____

STORED/SHIPPED IN ICE (Y)/N

CAP-PART A
SEDIMENT ANALYTICAL RESULTS

DECEMBER 1996

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Table V-B. Summary of CAP-Part A Sediment Analytical Results

Station:	GUST	P2-SWE03	P2-SWE04	P2-SWE05	P2-SWE06
Sample ID:	Soil	HT4-SE03	HT4-SE04	HT4-SE05	HT4-SE06
Sample Interval (ft BGS):	Threshold	0.0	0.0	0.0	0.0
Collection Date:	Levels	12/10/1996	12/10/1996	12/10/1996	12/10/1996
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS					
Benzene	0.017	0.0078 U	0.0077 U	0.0078 U	0.0068 U
Toluene	115	0.0078 U	0.0077 U	0.0078 U	0.0068 U
Ethylbenzene	18	0.0078 U	0.0077 U	0.0078 U	0.0068 U
Xylenes	700	0.0078 U	0.0077 U	0.0078 U	0.0068 U
MTBE		0.078 U	0.077 U	0.078 U	0.068 U
POLYNUCLEAR AROMATIC HYDROCARBONS					
1-Methylnaphthalene	NRC	0.52 U	0.51 U	0.52 U	2.3 U
2-Methlynaphthalene	NRC	0.52 U	0.51 U	0.52 U	2.3 U
Acenaphthene	NRC	0.52 U	0.51 U	0.52 U	2.3 U
Acenaphthylene	NRC	0.52 U	0.51 U	0.52 U	2.3 U
Anthracene	NRC	[a]	[a]	[a]	[a]
Benoz(a)anthracene	0.660	[b]	[b]	[b]	[b]
Benzo(a)pyrene	0.660	1.9 =	0.51 U	0.52 U	8.5 J
Benzo(b)fluoranthene	0.660	3.7 =	0.51 U	0.52 U	16 J
Benzo(g,h,i)perylene	NRC	1.1 =	0.51 U	0.52 U	5.6 J
Benzo(k)fluoranthene	0.660	[c]	[c]	[c]	[c]
Chrysene	0.660	3.5 =	0.51 U	0.52 U	21 J
Dibenzo(a,h)anthracene	0.660	[d]	[d]	[d]	[d]
Fluoranthene	NRC	4.8 =	0.51 U	0.52 U	20 J
Fluorene	NRC	0.52 U	0.51 U	0.52 U	2.3 U
Indeno(1,2,3-cd)pyrene	0.660	1.5 =	0.51 U	0.52 U	7 J
Naphthalene	NRC	0.52 U	0.51 U	0.52 U	2.3 U
Phenanthrene	NRC	2.8 =	0.51 U	0.52 U	12 J
Pyrene	NRC	4 J	0.51 U	0.52 U	16 J
OTHER ANALYTES					
TPH-Diesel Range Organics	NRC	16 U	15 U	16 U	32 =
TPH- Gasoline Range Organics	NRC	0.28 U	0.28 U	0.28 U	0.25 U

NOTES:

[1] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table B, Column 1)

[a] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene

[b] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene

[c] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene

[d] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene

NRC No regulatory criteria

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

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SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S6-87284
Received: 10 DEC 96
Reported: 13 JAN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA48/019457-4102/HUNTER IV/TC=18//
Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG=
87284-6	HT4-SE07*CS*SE07	Pump House #1	12-10-96/1415	HAA48
87284-7	HT4-SE06*CS*SE06	Pump House #2	12-10-96/1430	HAA48
87284-8	HT4-SE53*CS*SE06		12-10-96/1430	HAA48
87284-9	HT4-SE04*CS*SE04		12-10-96/1500	HAA48
87284-10	HT4-SE03*CS*SE03		12-10-96/1515	HAA48

PARAMETER	87284-6	87284-7	87284-8	87284-9	87284-10
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<620*F39	<6.8	<7.7	<7.7	<7.8
Toluene, ug/kg dw	<620	<6.8	<7.7	<7.7	<7.8
Ethylbenzene, ug/kg dw	<620	<6.8	<7.7	<7.7	<7.8
Xylenes, ug/kg dw	<620	<6.8	<7.7	<7.7	<7.8
Methyl tert-butyl ether (MTBE), ug/kg dw	<6200	<68	<77	<77	<78
Surrogate - F3-Toluene	150 %	150%	122%	122 %	148 %
PF Code	T	T	T	T	T
Dilution Factor	80.0	1.0	1.0	1.0	1.0
Batch ID	1220A	1216C	1216C	1216C	1216C
Preparation Date	12.23.96	12.16.96	12.16.96	12.17.96	12.18.96
Preparation Time	1655	2130	2215	1626	1818
Analysis Time	1655	2130	2215	1626	1818
Date Analyzed	12.23.96	12.16.96	12.16.96	12.17.96	12.18.96
RES Code	PP01	PP01	PD01	PP01	PP01
Initial Volume/Weight	5.0	5.0	5.0	5.0	5.0
Final Extraction Volume (FV)	10.0	5.0	5.0	5.0	5.0
Clock ID	1B1223	1D1216	1D1216	1D1217	1D1218

DUPLICATE

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& ENVIRONMENTAL SERVICES, INC.

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LOG NO: S6-87284
Received: 10 DEC 96
Reported: 13 JAN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA48/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
87284-6	HT4-SE07*CS*SE07	PUMPHOUSE #1	12-10-96/1415	HAA48
87284-7	HT4-SE06*CS*SE06	PUMPHOUSE #2	12-10-96/1430	HAA48
87284-8	HT4-SE53*CS*SE06	PUMPHOUSE #2	12-10-96/1430	HAA48
87284-9	HT4-SE04*CS*SE04	PUMPHOUSE #2	12-10-96/1500	HAA48
87284-10	HT4-SE03*CS*SE03	PUMPHOUSE #2	12-10-96/1515	HAA48

PARAMETER	87284-6	87284-7	87284-8	87284-9	87284-10
Polynuclear Aromatic HC (8100)					
Acenaphthene, ug/kg dw	<510	<2300	<5100	<510	<520
Acenaphthylene, ug/kg dw	<510	<2300	<5100	<510	<520
Benzo(a)pyrene, ug/kg dw	600	8500X	20000X	<510	1900X
Benzo(g,h,i)perylene, ug/kg dw	<510	5600	11000	<510	1100X
Benzo(b,k)fluoranthene, ug/kg dw	<510	16000	36000	<510	3700X
Chrysene + Benzo(a)anthracene, ug/kg dw	<510	21000	50000	<510	3500X
Fluoranthene, ug/kg dw	<510	20000	53000	<510	4800X
Fluorene, ug/kg dw	<510	<2300	<5100	<510	<520
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<510	7000X	16000X	<510	1500X
Naphthalene, ug/kg dw	<510	<2300	<5100	<510	<520
Phenanthrene + Anthracene, ug/kg dw	<510	12000X	39000	<510	2800
Pyrene, ug/kg dw	<510	16000	44000	<510	4000
1-Methylnaphthalene, ug/kg dw	<510	<2300	<5100	<510	<520
2-Methylnaphthalene, ug/kg dw	<510	<2300	<5100	<510	<520
Surrogate - 2-Fluorobiphenyl	46 %	*F33	*F33	58 %	65 %
PF Code	T	T	T	T	T

DUPLICATE

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Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG=
87284-6	HT4-SE07*CS*SE07	Pump House #1	12-10-96/1415	HAA48
87284-7	HT4-SE06*CS*SE06	Pump House #2	12-10-96/1430	HAA48
87284-8	HT4-SE53*CS*SE06		12-10-96/1430	HAA48
87284-9	HT4-SE04*CS*SE04		12-10-96/1500	HAA48
87284-10	HT4-SE03*CS*SE03		12-10-96/1515	HAA48

PARAMETER	87284-6	87284-7	87284-8	87284-9	87284-10
Initial Volume/Weight	30.0	30.0	30.0	30.0	30.0
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Dilution factor	1.0	5.0	10.0	1.0	1.0
Batch ID	1212W	1212W	1212W	1212W	1212W
Preparation Date	12.12.96	12.12.96	12.12.96	12.12.96	12.12.96
Preparation Time	2145	2145	2145	2145	2145
Analysis Time	1630	2111	1020	1842	1249
Date Analyzed	01.02.97	01.02.97	01.03.97	01.02.97	01.03.97
RES Code	PP01	PP01	PP01	PP01	PP01
Instrument ID	SGPFID	SGPFID	SGPFID	SGPFID	SGPFID

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Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
87284-6	HT4-SE07*CS*SE07	Pumphouse #1	12-10-96/1415	HAA48
87284-7	HT4-SE06*CS*SE06	Pumphouse #2	12-10-96/1430	HAA48
87284-8	HT4-SE53*CS*SE06		12-10-96/1430	HAA48
87284-9	HT4-SE04*CS*SE04		12-10-96/1500	HAA48
87284-10	HT4-SE03*CS*SE03		12-10-96/1515	HAA48

PARAMETER	87284-6	87284-7	87284-8	87284-9	87284-10
Gasoline Range Organics (8015M)					
Hydrocarbons as GRO, mg/kg dw	130	<0.25	<0.28	<0.28	<0.28
Surrogate - a,a,a-Trifluorotoluene	100 %	75%	52%	74 %	87 %
Preparation Date	12.13.96	12.16.96	12.16.96	12.17.96	12.18.96
Preparation Time	1655	2130	2215	1626	1818
Dilution factor	80.0	1.0	1.0	1.0	1.0
Date Analyzed	12.23.96	12.16.96	12.16.96	12.17.96	12.18.96
Batch ID	1220A	1216C	1216C	1216C	1216C
Clock ID	1B1223	1D1216	1D1216	1D1217	1D1218
PF Code	T	T	T	T	T
Initial Volume/Weight	5.0	5.0	5.0	5.0	5.0
Final Extraction Volume (FV)	10.0	5.0	5.0	5.0	5.0
Analysis Time	1655	2130	2215	1626	1818
RES Code	PP01	PP01	PD01	PP01	PP01

DUPLICATE

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Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
87284-6	HT4-SE07*CS*SE07	Pump House #1	12-10-96/1415	HAA48
87284-7	HT4-SE06*CS*SE06	Pump House #2	12-10-96/1430	HAA48
87284-8	HT4-SE53*CS*SE06		12-10-96/1430	HAA48
87284-9	HT4-SE04*CS*SE04		12-10-96/1500	HAA48
87284-10	HT4-SE03*CS*SE03		12-10-96/1515	HAA48

PARAMETER	87284-6	87284-7	87284-8	87284-9	87284-10
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	<15	32	100	<15	<16
Surrogate - o-Terphenyl	72 %	58 %	100 %	82 %	93 %
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Extracted	12.12.96	12.12.96	12.12.96	12.12.96	12.12.96
Date Analyzed	12.19.96	01.07.97	12.19.96	12.18.96	12.19.96
Batch ID	1212W	1212W	1212W	1212W	1212W
Instrument ID	SGQFID	SGQFID	SGQFID	SGQFID	SGQFID
PF Code	T	T	T	T	T
Initial Volume/Weight	30.0	30.0	30.0	30.0	30.0
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Preparation Date	12.12.96	12.12.96	12.12.96	12.12.96	12.12.96
Preparation Time	2145	2145	2145	2145	2145
Analysis Time	0203	0722	0758	2258	0240
RES Code	PP01	PD01	PD01	PP01	PP01
Percent Solids (160.3), %	65	73	65	65	64

DUPLICATE

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Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG=
87284-11	HT4-SE05*CS*SE05 } Pump House #2	12-10-96/1530	HAA48

PARAMETER	87284-11
Purgeable Aromatics (8020)	
Benzene, ug/kg dw	<7.8
Toluene, ug/kg dw	<7.8
Ethylbenzene, ug/kg dw	<7.8
Xylenes, ug/kg dw	<7.8
Methyl tert-butyl ether (MTBE), ug/kg dw	<78
Surrogate - F3-Toluene	148 %
PF Code	T
Dilution factor	1.0
Batch ID	1216C
Preparation Date	12.17.96
Preparation Time	1756
Analysis Time	1756
Date Analyzed	12.17.96
RES Code	PP01
Initial Volume/Weight	5.0
Final Extraction Volume (FV1)	5.0
Clock ID	1D1217

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Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA48/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-11	HT4-SE05*CS*SE05 } Pumphouse #2	10-10-96/1530	HAA48

PARAMETER	87284-11
Polynuclear Aromatic HC (8100)	
Acenaphthene, ug/kg dw	<520
Acenaphthylene, ug/kg dw	<520
Benzo(a)pyrene, ug/kg dw	<520
Benzo(g,h,i)perylene, ug/kg dw	<520
Benzo(b,k)fluoranthene, ug/kg dw	<520
Chrysene + Benzo(a)anthracene, ug/kg dw	<520
Fluoranthene, ug/kg dw	<520
Fluorene, ug/kg dw	<520
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<520
Naphthalene, ug/kg dw	<520
Phenanthrene + Anthracene, ug/kg dw	<520
Pyrene, ug/kg dw	<520
1-Methylnaphthalene, ug/kg dw	<520
2-Methylnaphthalene, ug/kg dw	<520
Surrogate - 2-Fluorobiphenyl	54 %
PF Code	T
Initial Volume/Weight	30.0
Final Extraction Volume (FV1)	1.0
Dilution factor	1.0
Batch ID	1212W

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Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA48/019457-4102/HUNTER IV/TO=18//
Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-11	HT4-SE05*CS*SE05 } Pump House #2	12-10-96/1530	HAA48

PARAMETER	87284-11
Preparation Date	12.12.96
Preparation Time	2145
Analysis Time	1707
Date Analyzed	01.02.97
RES Code	PP01
Instrument ID	SGPFID
Gasoline Range Organics (8015M)	
Hydrocarbons as GRO, mg/kg dw	<0.28
Surrogate - a,a,a-Trifluorotoluene	65 %
Preparation Date	12.17.96
Preparation Time	1756
Dilution factor	1.0
Date Analyzed	12.17.96
Batch ID	1216C
Clock ID	1D1217
PF Code	T
Initial Volume/Weight	5.0
Final Extraction Volume (FV1)	5.0
Analysis Time	1756
RES Code	PP01

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Project: HAA48/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-11	HT4-SE05*CS*SE05 } Pump House #2	12-10-96/1530	HAA48

PARAMETER	87284-11
Diesel Range Organics (8100M)	
Hydrocarbons as DRO, mg/kg dw	<16
Surrogate - o-Terphenyl	100 %
Dilution factor	1.0
Date Extracted	12.12.96
Date Analyzed	12.19.96
Batch ID	1212W
Instrument ID	SGQFID
PF Code	T
Initial Volume/Weight	30.03
Final Extraction Volume (FV1)	1.0
Preparation Date	12.12.96
Preparation Time	2145
Analysis Time	0048
RES Code	PP01
Percent Solids (160.3), %	64

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter Y

PROJECT NO: 018457.4102

LABORATORY ID: SLS

SAMPLER(S) NAME: G. Rowell

TASK ORDER NO.

SAMPLE EVENT: Week Sampling

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: G. Rowell

ANALYTICAL PARAMETERS/METHODS

DATE	TIME (MILITARY)	MATRIX (SAO)	FIELD SAMPLE ID	SITE ID	RES. CODE	DEPTH (FT)	NO. OF CONT.	STANDARD PRESERV. (Y/N)	FILTERED (L) LAB (D) FIELD	VOCs 8020	SVOC 8100	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO 8100m	GRO 8015m	PAH 8310
										Method No.								
12/10		W	Temp Blank					/										
	1350	W	HT4-SW08	SW08	PP01		2	N	N	X	X					X	X	X
	1350	S	HT4-SE08	SE08	PP01		2	N	N									
	1415	W	HT4-SW07	SW07	PP01		2	N	N	X	X					X	X	X
	1415	S	HT4-SE07	SE07	PP01		2	N	N									
	1430	S	HT4-SE06	SE06	PP01		2	N	N	X	X					X	X	X
	1430	S	HT4-SE53	SE06	PD01		2	N	N									
	1430	W	HT4-SW06	SW06	PP01		2	N	N									X
↓	1430	W	HT4-SW53	SW06	PD01		2	N	N									X

Relinquished by: (Signature) G. Rowell

Date/Time: 12-10-96/1810

Received by: [illegible]

Date/Time: 12/10/96 20:10

Cooler Temperature:

Remarks:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

AIRBILL CO.

TRACKING NO:

STANDARD PRESERVATION (Y):
(H) HCl/VOC
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER

STORED/SHIPPED IN ICE (Y/N)

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter 4 — TASK ORDER NO.

PROJECT NO: 01945.7.4102 — SAMPLE EVENT: Well Sampling

LABORATORY ID: SCS — PROGRAM TYPE:

SAMPLER(S) NAME: G. Rowell — SAMPLER(S) SIGNATURE: G. Rowell

DATE	TIME (MILITARY)	MATRIX (SAS)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)	FILTERED (L) LAB (F) FIELD
12-10			TEMP Blank				2	N	N
	1500	W	HT4-SW04	SW04	PP01		2	N	N
	1500	S	HT4-SE04	SE04	PP01		2	N	N
	1515	W	HT4-SW03	SW03	PP01		2	N	N
	1515	S	HT4-SE03	SE03	PP01		2	N	N
	1530	W	HT4-SW05	SW05	PP01		2	N	N
	1530	S	HT4-SE05	SE05	PP01		2	N	N

ANALYTICAL PARAM... METHODS

Method No.	VOCs 8020	SVOC 8100	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO 8100m	GRO 8015m	PAH 8310
	X	X					X	X	X
	X	X					X	X	X
	X	X					X	X	X

Relinquished by: (Signature) G. Rowell — Date/Time: 12-10-96/1810 — Received by: S. Stark (G) — Date/Time: 12/10/96 1810

Cooler Temperature:

Remarks:

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER
STORED/SHIPPED IN ICE Y/N

Send Results to:
Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

AIRBILL CO.

TRACKING NO:

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CAP-PART B
SOIL ANALYTICAL RESULTS

MAY 1997 & SEPTEMBER 1999

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Table V-C. Summary of CAP-Part B Soil Analytical Results

Station:	GUST	P2-MW25	P2-MW25	P2-MW26	P2-MW26	P2-MW27	P2-MW27
Sample ID:	Soil	WB2501	WB2502	WB2601	WB2602	WB2701	WB2702
Sample Interval (ft BGS):	Threshold	2.0 - 4.0	8.0 - 10.0	4.0 - 6.0	8.0 - 10.0	8.0 - 10.0	13.0 - 15.0
Collection Date:	Levels	05/08/1997	05/08/1997	05/08/1997	05/08/1997	05/09/1997	05/09/1997
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.017	0.0052 U	3.3 U	0.0056 U	0.0063 U	0.02 UJ	0.0062 U
Toluene	115	0.0052 U	15 U	0.0056 U	0.0063 U	3.5 J	0.015 =
Ethylbenzene	18	0.0052 U	49 =	0.0056 U	0.0063 U	13 J	0.0084 =
Xylene (total)	700	0.0052 U	270 =	0.0056 U	0.0063 U	50 J	0.017 =
MTBE		0.052 U	150 U	0.056 U	0.063 U	2 J	0.062 U
POLYNUCLEAR AROMATIC HYDROCARBONS							
1-Methylnaphthalene	NRC	0.34 U	0.4 U	0.37 U	0.42 U	0.48 =	0.41 U
2-Methylnaphthalene	NRC	0.34 U	0.4 U	0.37 U	0.42 U	0.97 =	0.41 U
Acenaphthene	NRC	0.34 U	0.4 U	0.37 U	0.42 U	0.46 =	0.41 U
Acenaphthylene	NRC	0.34 U	0.4 U	0.37 U	0.42 U	0.35 U	0.41 U
Anthracene	NRC	[a]	[a]	[a]	[a]	[a]	[a]
Bezno(a)anthracene	0.660	[b]	[b]	[b]	[b]	[b]	[b]
Benzo(a)pyrene	0.660	0.34 U	0.4 U	0.37 U	0.42 U	0.19 J	0.41 U
Benzo(b)fluoranthene	0.660	0.34 U	0.4 U	0.37 U	0.42 U	0.39 =	0.41 U
Benzo(g,h,i)perylene	NRC	0.34 U	0.4 U	0.37 U	0.42 U	0.35 U	0.41 U
Benzo(k)fluoranthene	0.660	[c]	[c]	[c]	[c]	[c]	[c]
Chrysene	0.660	0.34 U	0.4 U	0.37 U	0.42 U	0.4 =	0.41 U
Dibenzo(a,h)anthracene	0.660	[d]	[d]	[d]	[d]	[d]	[d]
Fluoranthene	NRC	0.34 U	0.4 U	0.37 U	0.42 U	1.6 =	0.41 U
Fluorene	NRC	0.34 U	0.4 U	0.37 U	0.42 U	0.29 J	0.41 U
Indeno(1,2,3-cd)pyrene	0.660	0.34 U	0.4 U	0.37 U	0.42 U	0.35 U	0.41 U
Naphthalene	NRC	0.34 U	0.4 U	0.37 U	0.42 U	0.9 =	0.41 U
Phenanthrene	NRC	0.34 U	0.4 U	0.37 U	0.42 U	1.4 =	0.41 U
Pyrene	NRC	0.34 U	0.4 U	0.37 U	0.42 U	1.3 =	0.044 J
OTHER ANALYTES							
Lead	NRC						81 =
Total Organic Carbon	NRC						43000 =
TPH - Diesel Range Organics	NRC	5.1 J	13 =	11 U	12 U	54 =	12 U
TPH - Gasoline Range Organics	NRC	0.19 UJ	7900 =	0.2 U	0.42 =	710 J	0.22 UJ

NOTES:

[1] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table B, Column 1)

[a] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene

[b] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene

[c] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene

[d] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene

NRC No regulatory criteria

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

Table V-C. Summary of CAP-Part B Soil Analytical Results (continued)

Station:	GUST	P2-MW28	P2-MW28	P2-MW29	P2-MW29	P2-MW30	P2-MW30
Sample ID:	Soil	WB2801	WB2802	WB2901	WB2902	WB3001	WB3002
Sample Interval (ft BGS):	Threshold	8.0 - 10.0	13.0 - 15.0	8.0 - 10.0	13.0 - 15.0	8.0 - 10.0	13.0 - 15.0
Collection Date:	Levels	05/08/1997	05/08/1997	05/08/1997	05/08/1997	05/09/1997	05/09/1997
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.017	0.0055 U	0.0066 U	0.0055 U	0.0063 U	0.0057 U	0.0061 U
Toluene	115	0.0055 U	0.0066 U	0.0055 U	0.0063 U	0.0057 U	0.0096 =
Ethylbenzene	18	0.0055 U	0.0066 U	0.0055 U	0.0063 U	0.0057 U	0.0061 U
Xylene (total)	700	0.0055 U	0.0066 U	0.0055 U	0.0063 U	0.0057 U	0.01 =
MTBE		0.055 U	0.066 U	0.055 U	0.063 U	0.057 U	0.061 U
POLYNUCLEAR AROMATIC HYDROCARBONS							
1-Methylnaphthalene	NRC	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
2-Methylnaphthalene	NRC	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Acenaphthene	NRC	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Acenaphthylene	NRC	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Anthracene	NRC	[a]	[a]	[a]	[a]	[a]	[a]
Bezno(a)anthracene	0.660	[b]	[b]	[b]	[b]	[b]	[b]
Benzo(a)pyrene	0.660	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Benzo(b)fluoranthene	0.660	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Benzo(g,h,i)perylene	NRC	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Benzo(k)fluoranthene	0.660	[c]	[c]	[c]	[c]	[c]	[c]
Chrysene	0.660	0.37 U	0.43 U	0.36 U	0.42 U	0.12 J	0.40 U
Dibenzo(a,h)anthracene	0.660	[d]	[d]	[d]	[d]	[d]	[d]
Fluoranthene	NRC	0.37 U	0.43 U	0.36 U	0.42 U	0.064 J	0.40 U
Fluorene	NRC	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Indeno(1,2,3-cd)pyrene	0.660	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Naphthalene	NRC	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Phenanthrene	NRC	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
Pyrene	NRC	0.37 U	0.43 U	0.36 U	0.42 U	0.38 U	0.40 U
OTHER ANALYTES							
Lead	NRC						
Total Organic Carbon	NRC						
TPH - Diesel Range Organics	NRC	11 U	13 U	22 =	13 U	11 U	12 U
TPH - Gasoline Range Organics	NRC	0.2 U	0.24 U	0.2 U	0.23 U	0.2 UJ	0.22 UJ

NOTES:

[1] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table B, Column 1)

[a] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene

[b] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene

[c] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene

[d] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene

NRC No regulatory criteria

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

Table V-C. Summary of CAP-Part B Soil Analytical Results (continued)

Station:	GUST	P2-MW31	P2-MW31	P2-MW32	P2-MW32	P2-SB42	P2-SB42
Sample ID:	Soil	WB3101	WB3102	WB3201	WB3202	SB4201	SB4202
Sample Interval (ft BGS):	Threshold	8.0 - 10.0	13.0 - 15.0	4.0 - 6.0	8.0 - 10.0	4.0 - 6.0	8.0 - 10.0
Collection Date:	Levels	05/09/1997	05/09/1997	05/13/1997	05/13/1997	05/08/1997	05/08/1997
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.017	0.0053 U	0.0061 U	0.0052 U	0.006 U	0.0062 U	0.069 U
Toluene	115	0.0053 U	0.0064 =	0.0052 U	0.006 U	0.025 =	0.75 =
Ethylbenzene	18	0.0053 U	0.0061 U	0.0052 U	0.006 U	0.033 =	2.4 =
Xylene (total)	700	0.0053 U	0.0061 U	0.0052 U	0.006 U	0.036 =	17 =
MTBE		0.053 U	0.061 U	0.052 U	0.06 U	0.062 U	7.5 U
POLYNUCLEAR AROMATIC HYDROCARBONS							
1-Methylnaphthalene	NRC	0.35 U	0.40 U	0.34 U	0.037 J	0.42 U	0.83 U
2-Methylnaphthalene	NRC	0.35 U	0.40 U	0.34 U	0.62 =	0.42 U	0.83 U
Acenaphthene	NRC	0.35 U	0.40 U	0.34 U	0.39 U	0.42 U	0.83 U
Acenaphthylene	NRC	0.35 U	0.40 U	0.34 U	0.39 U	0.42 U	0.83 U
Anthracene	NRC	[a]	[a]	[a]	[a]	[a]	[a]
Bezno(a)anthracene	0.660	[b]	[b]	[b]	[b]	[b]	[b]
Benzo(a)pyrene	0.660	0.33 J	0.40 U	0.34 U	0.39 U	0.42 U	0.24 J
Benzo(b)fluoranthene	0.660	0.19 J	0.40 U	0.34 U	0.39 U	0.42 U	0.83 U
Benzo(g,h,i)perylene	NRC	0.69 =	0.40 U	0.34 U	0.39 U	0.42 U	0.83 U
Benzo(k)fluoranthene	0.660	[c]	[c]	[c]	[c]	[c]	[c]
Chrysene	0.660	0.16 J	0.40 U	0.34 U	0.39 U	0.32 J	3 =
Dibenzo(a,h)anthracene	0.660	[d]	[d]	[d]	[d]	[d]	[d]
Fluoranthene	NRC	0.35 U	0.40 U	0.34 U	0.39 U	0.29 J	3.3 =
Fluorene	NRC	0.35 U	0.40 U	0.34 U	0.079 =	0.42 U	0.83 U
Indeno(1,2,3-cd)pyrene	0.660	0.89 =	0.40 U	0.34 U	0.39 U	0.42 U	0.83 U
Naphthalene	NRC	0.35 U	0.40 U	0.34 U	0.39 U	0.42 U	0.83 U
Phenanthrene	NRC	0.35 U	0.40 U	0.34 U	0.39 U	0.22 J	0.83 U
Pyrene	NRC	0.05 J	0.40 U	0.34 U	0.39 U	0.32 J	3.9 =
OTHER ANALYTES							
Lead	NRC				5.2 =		
Total Organic Carbon	NRC				2600 =		
TPH - Diesel Range Organics	NRC	12 =	12 U	10 U	12 =	17 =	140 =
TPH - Gasoline Range Organics	NRC	0.19 UJ	0.22 UJ	0.19 UJ	0.21 UJ	0.58 J	170 J

NOTES:

[1] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table B, Column 1)

[a] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene

[b] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene

[c] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene

[d] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene

NRC No regulatory criteria

Laboratory Qualifiers

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UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

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Table V-C. Summary of CAP-Part B Soil Analytical Results (continued)

Station:	GUST	P2-SB43	P2-SB43	P2-SB44	P2-SB44	P2-SB45	P2-SB45
Sample ID:	Soil	SB4301	SB4302	SB4401	SB4402	SB4501	SB4502
Sample Interval (ft BGS):	Threshold	4.0 - 6.0	10.0 - 12.0	8.0 - 10.0	10.0 - 12.0	4.0 - 6.0	8.0 - 10.0
Collection Date:	Levels	05/08/1997	05/08/1997	05/07/1997	05/07/1997	05/07/1997	05/07/1997
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.017	0.0051 U	0.17 U	0.0054 U	0.07 U	0.0055 U	0.0057 U
Toluene	115	0.0051 U	0.77 U	0.0054 U	0.32 U	0.0095 =	0.0057 U
Ethylbenzene	18	0.0051 U	1.0 =	0.0054 U	0.32 U	0.0055 U	0.0057 U
Xylene (total)	700	0.0051 U	5.7 =	0.0054 U	0.37 =	0.014 =	0.0057 U
MTBE		0.051 U	7.7 U	0.054 U	3.2 U	0.055 U	0.057 U
POLYNUCLEAR AROMATIC HYDROCARBONS							
1-Methylnaphthalene	NRC	0.68 U	0.41 U	0.36 U	0.36 U	0.37 U	0.38 U
2-Methylnaphthalene	NRC	0.42 J	0.41 U	0.36 U	0.36 U	0.37 U	0.38 U
Acenaphthene	NRC	0.42 J	0.41 U	0.36 U	0.36 U	0.37 U	0.38 U
Acenaphthylene	NRC	0.68 U	0.41 U	0.36 U	0.36 U	0.37 U	0.38 U
Anthracene	NRC	[a]	[a]	[a]	[a]	[a]	[a]
Bezno(a)anthracene	0.660	[b]	[b]	[b]	[b]	[b]	[b]
Benzo(a)pyrene	0.660	0.68 U	0.41 U	0.52 =	0.36 U	0.37 U	0.54 =
Benzo(b)fluoranthene	0.660	0.68 U	0.41 U	1.4 =	0.36 U	0.37 U	1.2 =
Benzo(g,h,i)perylene	NRC	0.68 U	0.41 U	0.36 U	0.36 U	0.37 U	0.38 U
Benzo(k)fluoranthene	0.660	[c]	[c]	[c]	[c]	[c]	[c]
Chrysene	0.660	1.6 =	0.29 J	0.44 =	0.36 U	0.37 U	0.6 =
Dibenzo(a,h)anthracene	0.660	[d]	[d]	[d]	[d]	[d]	[d]
Fluoranthene	NRC	3.3 =	0.65 =	0.57 =	0.38 J	0.37 U	0.38 U
Fluorene	NRC	0.52 J	0.41 U	0.36 U	0.36 U	0.37 U	0.38 U
Indeno(1,2,3-cd)pyrene	0.660	0.68 U	0.41 U	0.36 U	0.36 U	0.37 U	0.56 =
Naphthalene	NRC	0.68 =	0.41 U	0.36 U	0.36 U	0.37 U	0.38 U
Phenanthrene	NRC	4.4 =	0.54 =	0.36 U	0.36 U	0.37 U	0.38 U
Pyrene	NRC	1.7 =	0.6 =	2.0 =	0.48 =	0.37 U	0.5 =
OTHER ANALYTES							
Lead	NRC	3.2 =					
Total Organic Carbon	NRC	540 =					
TPH - Diesel Range Organics	NRC	68 =	13 =	140 =	140 =	9.9 J	33 =
TPH - Gasoline Range Organics	NRC	0.18 U	130 J	0.062 J	70 J	0.2 U	0.69 =

NOTES:

[1] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table B, Column 1)

[a] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene

[b] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene

[c] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene

[d] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene

NRC No regulatory criteria

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

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Table V-C. Summary of CAP-Part B Soil Analytical Results (continued)

Station:	GUST	P2-SB46	P2-SB46	P2-SB47	P2-SB47	P2-SB48	P2-SB48
Sample ID:	Soil	SB4601	SB4602	SB4701	SB4702	SB4801	SB4802
Sample Interval (ft BGS):	Threshold	4.0 - 6.0	10.0 - 12.0	4.0 - 6.0	10.0 - 12.0	4.0 - 6.0	10.0 - 12.0
Collection Date:	Levels	05/07/1997	05/07/1997	05/07/1997	05/07/1997	05/07/1997	05/07/199 7
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS							
Benzene	0.017	0.0055 U	0.067 U	0.0055 U	0.067 U	0.0057 U	0.67 U
Toluene	115	0.0055 U	0.3 U	0.0055 U	0.3 U	0.0057 U	10 =
Ethylbenzene	18	0.0055 U	0.23 J	0.0055 U	0.091 J	0.0057 U	16 =
Xylene (total)	700	0.0055 U	2.2 =	0.0055 U	0.65 =	0.0057 U	100 =
MTBE		0.055 U	3 U	0.055 U	3 U	0.057 U	30 U
POLYNUCLEAR AROMATIC HYDROCARBONS							
1-Methylnaphthalene	NRC	0.36 U	0.41 U	1.8 U	0.40 U	0.37 U	0.41 U
2-Methylnaphthalene	NRC	0.36 U	0.41 U	1.8 U	0.40 U	0.37 U	0.41 U
Acenaphthene	NRC	0.36 U	0.41 U	1.8 U	0.40 U	0.37 U	0.41 U
Acenaphthylene	NRC	0.36 U	0.41 U	1.8 U	0.40 U	0.37 U	0.41 U
Anthracene	NRC	[a]	[a]	[a]	[a]	[a]	[a]
Bezno(a)anthracene	0.660	[b]	[b]	[b]	[b]	[b]	[b]
Benzo(a)pyrene	0.660	0.36 U	0.41 U	1.8 U	0.40 U	0.37 U	0.41 U
Benzo(b)fluoranthene	0.660	0.36 U	0.41 U	1.8 U	0.34 J	0.37 U	0.41 =
Benzo(g,h,i)perylene	NRC	0.36 U	0.41 U	1.8 U	0.40 U	0.37 U	0.41 U
Benzo(k)fluoranthene	0.660	[c]	[c]	[c]	[c]	[c]	[c]
Chrysene	0.660	0.36 U	0.42 =	1.8 U	0.73 =	0.37 U	1 =
Dibenzo(a,h)anthracene	0.660	[d]	[d]	[d]	[d]	[d]	[d]
Fluoranthene	NRC	0.36 U	0.87 =	1.8 U	1.3 =	0.37 U	1.5 =
Fluorene	NRC	0.36 U	0.41 U	1.8 U	0.40 U	0.37 U	0.41 U
Indeno(1,2,3-cd)pyrene	0.660	0.36 U	0.41 U	1.8 U	0.40 U	0.37 U	0.41 U
Naphthalene	NRC	0.36 U	0.41 U	1.8 U	0.40 U	0.37 U	0.41 U
Phenanthrene	NRC	0.36 U	0.74 =	1.8 U	1.1 =	0.37 U	1.4 =
Pyrene	NRC	0.36 U	0.76 =	1.8 U	1.2 =	0.37 U	1.5 =
OTHER ANALYTES							
Lead	NRC						
Total Organic Carbon	NRC						
TPH - Diesel Range Organics	NRC	11 UJ	18 J	360 J	22 J	61 J	33 J
TPH - Gasoline Range Organics	NRC	0.2 U	100 J	0.078 J	56 J	0.2 U	1900 J

NOTES:

[1] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table B, Column 1)

[a] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene

[b] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene

[c] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene

[d] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene

NRC No regulatory criteria

Laboratory Qualifiers

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UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

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Table V-C. Summary of CAP-Part B Soil Analytical Results (continued)

Station:	GUST	P2-SB49	P2-SB49	P2-SB50	P2-SB50	P2-SB51
Sample ID:	Soil	SB4901	SB4902	SB5001	SB5002	SB5101
Sample Interval (ft BGS):	Threshold	8.0 - 10.0	10.0 - 12.0	4.0 - 6.0	8.0 - 10.0	2.0 - 4.0
Collection Date:	Levels	05/07/1997	05/07/1997	05/07/1997	05/07/1997	05/07/1997
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS						
Benzene	0.017	0.0053 U	1.6 U	0.0055 U	0.0056 U	0.0055 U
Toluene	115	0.0053 U	23 =	0.0055 U	0.0056 U	0.0055 U
Ethylbenzene	18	0.0053 U	38 =	0.0055 U	0.0056 U	0.0055 U
Xylene (total)	700	0.0053 U	240 =	0.0055 U	0.0056 U	0.0055 U
MTBE		0.053 U	740 U	0.055 U	0.056 U	0.055 U
POLYNUCLEAR AROMATIC HYDROCARBONS						
1-Methylnaphthalene	NRC	0.35 U	0.40 U	0.37 U	0.38 U	0.37 U
2-Methylnaphthalene	NRC	0.35 U	0.40 U	0.37 U	0.38 U	0.37 U
Acenaphthene	NRC	0.35 U	0.40 U	0.37 U	0.38 U	0.37 U
Acenaphthylene	NRC	0.35 U	0.40 U	0.37 U	0.38 U	0.37 U
Anthracene	NRC	[a]	[a]	[a]	[a]	[a]
Bezno(a)anthracene	0.660	[b]	[b]	[b]	[b]	[b]
Benzo(a)pyrene	0.660	0.35 U	0.25 J	0.37 U	0.38 U	0.37 U
Benzo(b)fluoranthene	0.660	0.35 U	0.76 =	0.37 U	0.38 U	0.37 U
Benzo(g,h,i)perylene	NRC	0.35 U	0.40 U	0.37 U	0.38 U	0.37 U
Benzo(k)fluoranthene	0.660	[c]	[c]	[c]	[c]	[c]
Chrysene	0.660	0.22 J	0.63 =	0.37 U	0.38 U	0.37 U
Dibenzo(a,h)anthracene	0.660	[d]	[d]	[d]	[d]	[d]
Fluoranthene	NRC	0.51 =	2.5 =	0.37 U	0.38 U	0.37 U
Fluorene	NRC	0.35 U	0.26 J	0.37 U	0.38 U	0.37 U
Indeno(1,2,3-cd)pyrene	0.660	0.35 U	0.40 U	0.37 U	0.38 U	0.37 U
Naphthalene	NRC	0.35 U	0.40 U	0.37 U	0.38 U	0.37 U
Phenanthrene	NRC	0.47 =	2.7 =	0.37 U	0.38 U	0.37 U
Pyrene	NRC	0.45 =	2.0 =	0.37 U	0.38 U	0.37 U
OTHER ANALYTES						
Lead	NRC					
Total Organic Carbon	NRC					
TPH - Diesel Range Organics	NRC	11 J	35 J	11 UJ	11 UJ	8.5 J
TPH - Gasoline Range Organics	NRC	0.11 J	4400 J	0.2 U	0.2 U	0.2 U

NOTES:

[1] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table B, Column 1)

[a] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene

[b] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene

[c] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene

[d] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene

NRC No regulatory criteria

Laboratory Qualifiers

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UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

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= Indicates that the compound was detected at the concentration reported.

Table V-C. Summary of CAP-Part B Soil Analytical Results (continued)

Station:	GUST	P2-SB51	P2-SB52	P2-SB52	P2-SB53	P2-SB53
Sample ID:	Soil	SB5102	SB5201	SB5202	SB5301	SB5302
Sample Interval (ft BGS):	Threshold	6.0 - 8.0	4.0 - 6.0	6.0 - 8.0	0.0 - 2.0	6.0 - 8.0
Collection Date:	Levels	05/07/1997	05/07/1997	05/07/1997	05/06/1997	05/06/1997
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS						
Benzene	0.017	0.066 U	0.0053 U	0.0067 U	0.0054 U	0.49 =
Toluene	115	3.7 U	0.0053 U	0.03 U	0.012 =	0.69 =
Ethylbenzene	18	13 =	0.0053 U	0.03 U	0.0054 U	2.9 =
Xylene (total)	700	97 =	0.0053 U	0.047 =	0.0099 =	4.6 =
MTBE		37 U	0.053 U	0.3 U	0.054 U	2.1 J
POLYNUCLEAR AROMATIC HYDROCARBONS						
1-Methylnaphthalene	NRC	0.40 U	0.35 U	0.38 U	0.051 J	0.36 U
2-Methylnaphthalene	NRC	0.40 U	0.35 U	0.38 U	0.35 U	0.36 U
Acenaphthene	NRC	0.40 U	0.35 U	0.38 U	0.35 U	0.36 U
Acenaphthylene	NRC	0.40 U	0.35 U	0.38 U	0.35 U	0.049 J
Anthracene	NRC	[a]	[a]	[a]	[a]	[a]
Bezno(a)anthracene	0.660	[b]	[b]	[b]	[b]	[b]
Benzo(a)pyrene	0.660	0.40 U	0.35 U	0.38 U	0.35 U	0.36 U
Benzo(b)fluoranthene	0.660	0.39 J	0.35 U	0.38 U	0.35 U	0.36 U
Benzo(g,h,i)perylene	NRC	0.40 U	0.35 U	0.38 U	0.35 U	0.36 U
Benzo(k)fluoranthene	0.660	[c]	[c]	[c]	[c]	[c]
Chrysene	0.660	0.87 =	0.35 U	0.38 U	0.35 U	0.36 U
Dibenzo(a,h)anthracene	0.660	[d]	[d]	[d]	[d]	[d]
Fluoranthene	NRC	1.6 =	0.35 U	0.38 U	0.35 U	0.36 U
Fluorene	NRC	0.40 U	0.35 U	0.38 U	0.35 U	0.36 U
Indeno(1,2,3-cd)pyrene	0.660	0.40 U	0.35 U	0.38 U	0.35 U	0.36 U
Naphthalene	NRC	0.40 U	0.35 U	0.38 U	0.35 U	0.36 U
Phenanthrene	NRC	1.5 =	0.35 U	0.38 U	0.35 U	0.36 U
Pyrene	NRC	1.4 =	0.35 U	0.38 U	0.35 U	0.36 U
OTHER ANALYTES						
Lead	NRC					
Total Organic Carbon	NRC					
TPH - Diesel Range Organics	NRC	32 J	28 J	10 J	11 U	15 =
TPH - Gasoline Range Organics	NRC	2900 J	0.19 U	4.8 =	0.19 U	190 =

NOTES:

[1] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table B, Column 1)

[a] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene

[b] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene

[c] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene

[d] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene

NRC No regulatory criteria

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

Table V-C. Summary of CAP-Part B Soil Analytical Results (continued)

Station:	GUST	P2-SB54	P2-SB54	P2-MW41	P2-MW41
Sample ID:	Soil	SB5401	SB5402	PH2-WB4101	PH2-WB4102
Sample Interval (ft BGS):	Threshold	4.0 - 6.0	6.0 - 8.0	10.0 - 12.00	26.0 - 28.00
Collection Date:	Levels	05/07/1997	05/07/1997	09/30/1999	09/30/1999
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS					
Benzene	0.017	0.0054 U	0.0057 U	0.25 U	0.0064 U
Toluene	115	0.0054 U	0.0057 U	0.25 U	0.0064 U
Ethylbenzene	18	0.0054 U	0.0057 U	0.25 U	0.0064 U
Xylene (total)	700	0.0054 U	0.0057 U	1.1 =	0.013 U
MTBE		0.054 U	0.057 U	2.5 U	0.064 U
POLYNUCLEAR AROMATIC HYDROCARBONS					
1-Methylnaphthalene	NRC	0.36 U	0.38 U	0.25 U	0.026 U
2-Methylnaphthalene	NRC	0.36 U	0.38 U	0.25 U	0.026 U
Acenaphthene	NRC	0.36 U	0.38 U	0.62 U	0.065 U
Acenaphthylene	NRC	0.36 U	0.38 U	0.25 U	0.026 U
Anthracene	NRC	[a]	[a]	0.25 =	0.0052 U
Bezno(a)anthracene	0.660	[b]	[b]	0.36 =	0.0052 U
Benzo(a)pyrene	0.660	0.36 U	0.38 U	0.19 =	0.0052 U
Benzo(b)fluoranthene	0.660	0.36 U	0.38 U	0.28 =	0.0052 U
Benzo(g,h,i)perylene	NRC	0.36 U	0.38 U	0.19 =	0.013 U
Benzo(k)fluoranthene	0.660	[c]	[c]	0.13 =	0.0052 U
Chrysene	0.660	0.36 U	0.38 U	0.38 =	0.0052 U
Dibenzo(a,h)anthracene	0.660	[d]	[d]	0.23 J	0.013 U
Fluoranthene	NRC	0.36 U	0.38 U	1.3 =	0.013 U
Fluorene	NRC	0.36 U	0.38 U	0.12 U	0.013 U
Indeno(1,2,3-cd)pyrene	0.660	0.36 U	0.38 U	0.12 U	0.013 U
Naphthalene	NRC	0.36 U	0.38 U	0.25 U	0.026 U
Phenanthrene	NRC	0.36 U	0.38 U	1 =	0.0052 U
Pyrene	NRC	0.36 U	0.38 U	1.3 =	0.013 U
OTHER ANALYTES					
Lead	NRC	4 =			
Total Organic Carbon	NRC	850 =			
TPH - Diesel Range Organics	NRC	7 J	9.3 J	18 =	4.3 U
TPH - Gasoline Range Organics	NRC	0.19 U	0.2 U	36 J	0.32 U

NOTES:

[1] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table B, Column 1)

[a] Phenanthrene & anthracene co-eluted and could not be determined individually, results are presented under phenanthrene

[b] Chrysene & benzo(a)anthracene co-eluted and could not be determined individually, results are presented under chrysene

[c] Benzo(b)fluoranthene & benzo(k)fluoranthene co-eluted and could not be determined individually, results are presented under benzo(b)fluoranthene

[d] Indeno(1,2,3-cd)pyrene & dibenzo(a,h)anthracene co-eluted and could not be determined individually, results are presented under indeno(1,2,3-cd)pyrene

NRC No regulatory criteria

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit.

UJ Indicates that the compound was not detected above an approximated sample quantitation limit.

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S7-72546
Received: 06 MAY 97
Reported: 27 MAY 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA58/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 095570528

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
72546-21	SB6402*CS*SB62 (6-8')	05-06-97/1620	HAA58
72546-22	SB5301*CS*SB53 (0-2') } Pump House #2	05-06-97/1700	HAA58
72546-23	SB5302*CS*SB53 (6-8')	05-06-97/1720	HAA58

PARAMETER	72546-21	72546-22	72546-23
Purgeable Aromatics (8020)			
Benzene, ug/kg dw	<6.1	<5.4	490
Toluene, ug/kg dw	<6.1	12	690
Ethylbenzene, ug/kg dw	<6.1	<5.4	2900
Xylenes, ug/kg dw	<6.1	9.9	4600
Methyl tert-butyl ether (MTBE), ug/kg dw	<61	<54	<2100J
Surrogate - F3-Toluene	93 %	93 %	115 %
PF Code	T	T	T
Dilution factor	1.0	1.0	80.0
Batch ID	0517A	0517A	0517B
Preparation Date	05.17.97	05.17.97	05.20.97
Preparation Time	1531	1627	2207
Analysis Time	1531	1627	2207
Date Analyzed	05.17.97	05.17.97	05.20.97
RES Code	PP01	PP01	PP01
Initial Volume/Weight	5.0	5.0	5.0
Final Extraction Volume (FV1)	5.0	5.0	10
Clock ID	1E0517	1E0517	1B0520

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Code: 095570528

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
72546-21	SB6402*CS*SB62 (6-8')	05-06-97/1620	HAA58
72546-22	SB5301*CS*SB53 (0-2') } Pump House #2	05-06-97/1700	HAA58
72546-23	SB5302*CS*SB53 (6-8') }	05-06-97/1720	HAA58

PARAMETER	72546-21	72546-22	72546-23
Polynuclear Aromatic HC (8100)			
Acenaphthene, ug/kg dw	<400	<350	<360
Acenaphthylene, ug/kg dw	<400	<350	49JX
Benzo(a)pyrene, ug/kg dw	<400	<350	<360
Benzo(g,h,i)perylene, ug/kg dw	<400	<350	<360
Benzo(b,k)fluoranthene, ug/kg dw	<400	<350	<360
Chrysene + Benzo(a)anthracene, ug/kg dw	<400	<350	<360
Fluoranthene, ug/kg dw	<400	<350	<360
Fluorene, ug/kg dw	<400	<350	<360
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<400	<350	<360
Naphthalene, ug/kg dw	<400	<350	<360
Phenanthrene + Anthracene, ug/kg dw	<400	<350	<360
Pyrene, ug/kg dw	<400	<350	<360
1-Methylnaphthalene, ug/kg dw	<400	51JX	<360
2-Methylnaphthalene, ug/kg dw	<400	<350	<360
Surrogate - 2-Fluorobiphenyl	70 %	72 %	67 %
PF Code	T	T	T
Initial Volume/Weight	30.0	30.0	30.0
Final Extraction Volume (FV1)	1.0	1.0	1.0
Dilution factor	1.0	1.0	1.0
Batch ID	0509X	0509X	0509X

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Atlanta, GA 30361

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Sampled By: Client
Code: 095570528

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
72546-21	SB6402*CS*SB62 (6-8')	05-06-97/1620	HAA58
72546-22	SB5301*CS*SB53 (0-2') } Pump House #2	05-06-97/1700	HAA58
72546-23	SB5302*CS*SB53 (6-8') }	05-06-97/1720	HAA58

PARAMETER	72546-21	72546-22	72546-23
Preparation Date	05.09.97	05.09.97	05.09.97
Preparation Time	1845	1845	1845
Analysis Time	0512	0606	0659
Date Analyzed	05.19.97	05.19.97	05.19.97
RES Code	PP01	PP01	PP01
Instrument ID	EXSFID	EXSFID	EXSFID
Gasoline Range Organics (8015M)			
Hydrocarbons as GRO, mg/kg dw	<0.22	<0.19	190
Surrogate - a,a,a-Trifluorotoluene	106 %	75 %	123 %
Preparation Date	05.18.97	05.17.97	05.20.97
Preparation Time	1555	1344	0238
Dilution factor	1.0	1.0	1.0
Date Analyzed	05.18.97	05.17.97	05.20.97
Batch ID	0509C	0509C	0520C
Clock ID	1D0518	1D0517	1D0519
PF Code	T	T	T
Initial Volume/Weight	5.0	5.0	5.0
Final Extraction Volume (FV1)	5.0	5.0	5.0
Analysis Time	1555	1344	0238
RES Code	PP01	PP01	PP01

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Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA58/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 095570528

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
72546-21	SB6402*CS*SB62 (6-8')	05-06-97/1620	HAA58
72546-22	SB5301*CS*SB53 (0-2') } PUMPHOUSE #2	05-06-97/1700	HAA58
72546-23	SB5302*CS*SB53 (6-8') }	05-06-97/1720	HAA58

PARAMETER	72546-21	72546-22	72546-23
Diesel Range Organics (8100M)			
Hydrocarbons as DRO, mg/kg dw	<12	<11	15
Surrogate - o-Terphenyl	76 %	101 %	84 %
Dilution factor	1.0	1.0	1.0
Date Extracted	05.09.97	05.09.97	05.09.97
Date Analyzed	05.16.97	05.17.97	05.16.97
Batch ID	0509X	0509X	0509X
Instrument ID	SGQFID	SGQFID	SGQFID
PF Code	T	T	T
Initial Volume/Weight	30.0	30.0	30.0
Final Extraction Volume (FV1)	1.0	1.0	1.0
Preparation Date	05.09.97	05.09.97	05.09.97
Preparation Time	1845	1845	1845
Analysis Time	1344	0107	1423
RES Code	PP01	PP01	PP01
Percent Solids (160.3), %	82	93	91

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LOG NO: S7-72546
Received: 06 MAY 97
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Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA58/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 095570528

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
72546-21	SB6402*CS*SB62 (6-8')	05-06-97/1620	HAA58
72546-22	SB5301*CS*SB53 (0-2') } Pump House #2	05-06-97/1700	HAA58
72546-23	SB5302*CS*SB53 (6-8')	05-06-97/1720	HAA58

PARAMETER	72546-21	72546-22	72546-23

The flag 'J' indicates the presence of a compound that meets the identification criteria, but the result is less than the sample RL and greater than the MDL.

X = Identification of target analytes using GC methodology is based on retention time. Although two dissimilar GC columns confirmed the presence of the target analyte in the sample, % difference is >25%. Thus, reviewer discretion should be employed during data review and interpretation of results for this target compound.

Methods: EPA SW-846
*F33 = Control limits are established only for surrogate concentration levels specified by EPA methods. Because the sample was diluted prior to analysis, surrogate recoveries are not reported.

*F53 = Because surrogate recoveries were outside established limits, the sample was re-extracted and/or reanalyzed. Comparable results were obtained.

Lisa McLeod

Lisa G. McLeod, Project Manager

Final Page Of Report

CHAIN - OF - CUSTODY - RECORD

M&E Metcalf & Eddy

PROJECT NAME: Hunter IV

PROJECT NO: 019457-4102

LABORATORY ID: SLS

SAMPLER(S) NAME: Daniel Howard

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: Daniel Howard

ANALYTICAL PARAMETERS/METHODS

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	FILE CODE	DEPTH (FT)	NO. OF CONTS.	STANDARD PRESERV. (YN)	FILTERED (L) LAB (F) FIELD	VOCs 8020	SVOC PAH 8120	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO 8100M	GRO 8015M	
5/6/97	1615	S	SB6401	SB64	PP01	4/6	2	N	—	X	X					X	X	
	1620	S	SB6402	SB64	PP01	6/8	2	N	—	X	X					X	X	
	1700	S	SB5301	SB53	PP01	0/2	2	N	—	X	X					X	X	
↓	1720	S	SB5302	SB53	PP01	6/8	2	N	—	X	X					X	X	

Method No.

Relinquished by: (Signature) Daniel K Howard — Date/Time: 5/7/97 1803

Received by: M. Howard 72546 — Date/Time: 5.7.97 6:06

Cooler Temperature:

Remarks: Lot # 72546 Use SB6401 for MS/MSD per D. Howard 5/8/97 RW

AIRBILL CO. Hand Delivered by M+E

TRACKING NO:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____
STORED/SHIPPED IN ICE (Y)/N

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

Revised

LOG NO: T7-21285
Received: 07 MAY 97
Reported: 28 MAY 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA59/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 104270618

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21285-1	SB5401*CS*SB54 (4-6')	05-07-97/0800	HAA59
21285-2	SB5402*CS*SB54 (6-8')	05-07-97/0805	HAA59
21285-3	SB5201*CS*SB52 (4-6')	05-07-97/0835	HAA59
21285-4	SB5202*CS*SB52 (6-8')	05-07-97/0845	HAA59
21285-5	SB5101*CS*SB51 (2-4')	05-07-97/1000	HAA59

Pump House #2

PARAMETER	21285-1	21285-2	21285-3	21285-4	21285-5
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<5.4	<5.7	<5.3	<6.7	<5.5
Toluene, ug/kg dw	<5.4	<5.7	<5.3	<30	<5.5
Ethylbenzene, ug/kg dw	<5.4	<5.7	<5.3	<30	<5.5
Xylenes, ug/kg dw	<5.4	<5.7	<5.3	47	<5.5
Methyl tert-butyl ether (MTBE), ug/kg dw	<54	<57	<53	<300	<55
Surrogate - a,a,a-Trifluorotoluene	100 %	105 %	103 %	99 %	99 %
Batch ID	0519F	0519F	0519F	0520F	0519F
Clock ID	1G0519	1G0519	1G0519	1G0521	1G0519
PF Code	T	T	T	T	T
Preparation Date	05.19.97	05.19.97	05.19.97	05.21.97	05.19.97
Preparation Time	2049	2130	2211	1219	2252
Initial Volume/Weight	4.97g	5.00g	5.01g	0.95g	5.01g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	1.0	1.0	1.0	5.0	1.0
Date Analyzed	05.19.97	05.19.97	05.19.97	05.21.97	05.19.97
Analysis Time	2049	2130	2211	1219	2252
RES Code	PP01	PP01	PP01	PP01	PP01

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

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LOG NO: T7-21285
Received: 07 MAY 97
Reported: 28 MAY 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA59/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 123270529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21285-1	SB5401*CS*SB54 (4-6')	05-07-97/0800	HAA59
21285-2	SB5402*CS*SB54 (6-8')	05-07-97/0805	HAA59
21285-3	SB5201*CS*SB52 (4-6')	05-07-97/0835	HAA59
21285-4	SB5202*CS*SB52 (6-8')	05-07-97/0845	HAA59
21285-5	SB5101*CS*SB51 (2-4')	05-07-97/1000	HAA59

Pump House #2

PARAMETER	21285-1	21285-2	21285-3	21285-4	21285-5
Gasoline Range Organics (8015M)					
Gasoline Range Organics, mg/kg dw	<0.19	<0.20	<0.19	4.8	<0.20
Surrogate - a,a,a-Trifluorotoluene	95 %	97 %	98 %	98 %	93 %
Batch ID	0519F	0519F	0519F	0520F	0519F
Clock ID	1G0519	1G0519	1G0519	1G0521	1G0519
PF Code	T	T	T	T	T
Preparation Date	05.19.97	05.19.97	05.19.97	05.21.97	05.19.97
Preparation Time	2049	2130	2211	1219	2252
Initial Volume/Weight	4.97g	5.00g	5.01g	0.95g	5.01g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Analyzed	05.19.97	05.19.97	05.19.97	05.21.97	05.19.97
Analysis Time	2049	2130	2211	1219	2252
RES Code	PP01	PP01	PP01	PP01	PP01

SL SAVANNAH LABORATORIES
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LOG NO: T7-21285
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Ms. Christine Hettinger
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1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA59/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 123270529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21285-1	SB5401*CS*SB54 (4-6')	05-07-97/0800	HAA59
21285-2	SB5402*CS*SB54 (6-8')	05-07-97/0805	HAA59
21285-3	SB5201*CS*SB52 (4-6')	05-07-97/0835	HAA59
21285-4	SB5202*CS*SB52 (6-8')	05-07-97/0845	HAA59
21285-5	SB5101*CS*SB51 (2-4')	05-07-97/1000	HAA59

Pumphouse #2

PARAMETER	21285-1	21285-2	21285-3	21285-4	21285-5
Polynuclear Aromatic Hydrocarbons (8100)					
Acenaphthene, ug/kg dw	<360	<380	<350	<380	<370
Acenaphthylene, ug/kg dw	<360	<380	<350	<380	<370
Benzo(a)pyrene, ug/kg dw	<360	<380	<350	<380	<370
Benzo(g,h,i)perylene, ug/kg dw	<360	<380	<350	<380	<370
Benzo(b,k)fluoranthene, ug/kg dw	<360	<380	<350	<380	<370
Chrysene + Benzo(a)anthracene, ug/kg dw	<360	<380	<350	<380	<370
Fluoranthene, ug/kg dw	<360	<380	<350	<380	<370
Fluorene, ug/kg dw	<360	<380	<350	<380	<370
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<360	<380	<350	<380	<370
Naphthalene, ug/kg dw	<360	<380	<350	<380	<370
Phenanthrene + Anthracene, ug/kg dw	<360	<380	<350	<380	<370
Pyrene, ug/kg dw	<360	<380	<350	<380	<370
1-Methylnaphthalene, ug/kg dw	<360	<380	<350	<380	<370
2-Methylnaphthalene, ug/kg dw	<360	<380	<350	<380	<370
Surrogate - 2-Fluorobiphenyl	70 %	45 %	61 %	60 %	37 %
Batch ID	0509Y	0509Y	0509Y	0509Y	0509Y
PF Code	T	T	T	T	T

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Atlanta, GA 30361

Project: HAA59/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 123270529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21285-1	SB5401*CS*SB54 (4-6')	05-07-97/0800	HAA59
21285-2	SB5402*CS*SB54 (6-8')	05-07-97/0805	HAA59
21285-3	SB5201*CS*SB52 (4-6')	05-07-97/0835	HAA59
21285-4	SB5202*CS*SB52 (6-8')	05-07-97/0845	HAA59
21285-5	SB5101*CS*SB51 (2-4')	05-07-97/1000	HAA59

Pump House #2

PARAMETER	21285-1	21285-2	21285-3	21285-4	21285-5
Preparation Date	05.09.97	05.09.97	05.09.97	05.09.97	05.09.97
Preparation Time	2100	2100	2100	2100	2100
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Analyzed	05.22.97	05.20.97	05.22.97	05.22.97	05.22.97
Analysis Time	0244	0728	0857	0810	0857
RES Code	PP01	PP01	PP01	PP01	PP01
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	7.0*J	9.3*J	28	10*J	8.5*J
Surrogate - o-Terphenyl	82 %	65 %	74 %	71 %	52 %
Batch ID	0509Y	0509Y	0509Y	0509Y	0509Y
PF Code	T	T	T	T	T
Preparation Date	05.09.97	05.09.97	05.09.97	05.09.97	05.09.97
Preparation Time	2100	2100	2100	2100	2100
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Analyzed	05.22.97	05.20.97	05.22.97	05.22.97	05.22.97
Analysis Time	0244	0728	0857	0810	0857
RES Code	PP01	PP01	PP01	PP01	PP01
Percent Solids, %	93 %	88 %	94 %	87 %	91 %

Revised

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2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

LOG NO: T7-21285
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Atlanta, GA 30361

Project: HAA59/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 104270618

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21285-6	SB5102*CS*SB51 (6-8')	05-07-97/1015	HAA59
21285-7	SB10501*CS*SB51 (6-8')	05-07-97/1015	HAA59
21285-8	SB5001*CS*SB50 (4-6')	05-07-97/1050	HAA59
21285-9	SB5002*CS*SB50 (8-10')	05-07-97/1105	HAA59
21285-10	SB4901*CS*SB49 (8-10')	05-07-97/1345	HAA59

Pumphouse #2

PARAMETER	21285-6	21285-7	21285-8	21285-9	21285-10
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<66	<1700	<5.5	<5.6	<5.3
Toluene, ug/kg dw	<3700	<10000	<5.5	<5.6	<5.3
Ethylbenzene, ug/kg dw	13000	34000	<5.5	<5.6	<5.3
Xylenes, ug/kg dw	97000	260000	<5.5	<5.6	<5.3
Methyl tert-butyl ether (MTBE), ug/kg dw	<37000	<100000	<55	<56	<53
Surrogate - a,a,a-Trifluorotoluene	112 %	109 %	100 %	100 %	96 %
Batch ID	0519A	0519A	0519F	0519F	0520F
Clock ID	1A0521	1A0521	1G0519	1G0519	2G0520
PF Code	T	T	T	T	T
Preparation Date	05.20.97	05.20.97	05.19.97	05.20.97	05.21.97
Preparation Time	1500	1500	2333	0014	0031
Initial Volume/Weight	4.04g	4.01g	5.02g	5.04g	5.00g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	500	1300	1.0	1.0	1.0
Date Analyzed	05.21.97	05.21.97	05.19.97	05.20.97	05.21.97
Analysis Time	1404	2227	2333	0014	0031
RES Code	PP01	PD11	PP01	PP01	PP01

DUPLICATE

SL SAVANNAH LABORATORIES
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LOG NO: T7-21285
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Atlanta, GA 30361

Project: HAA59/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 123270529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21285-6	SB5102*CS*SB51 (6-8')	05-07-97/1015	HAA59
21285-7	SB10501*CS*SB51 (6-8')	05-07-97/1015	HAA59
21285-8	SB5001*CS*SB50 (4-6')	05-07-97/1050	HAA59
21285-9	SB5002*CS*SB50 (8-10')	05-07-97/1105	HAA59
21285-10	SB4901*CS*SB49 (8-10')	05-07-97/1345	HAA59

Pumphouse #2

PARAMETER	21285-6	21285-7	21285-8	21285-9	21285-10
Gasoline Range Organics (8015M)					
Gasoline Range Organics, mg/kg dw	2900	5700	<0.20	<0.20	0.11*J
Surrogate - a,a,a-Trifluorotoluene	115 %	119 %	88 %	96 %	100 %
Batch ID	0519A	0519A	0519F	0519F	0520F
Clock ID	1A0521	1A0521	1G0519	1G0519	2G0520
PF Code	T	T	T	T	T
Preparation Date	05.20.97	05.20.97	05.19.97	05.20.97	05.20.97
Preparation Time	1500	1500	2333	0014	0031
Initial Volume/Weight	4.04g	4.01g	5.02g	5.04g	5.00g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	500	1300	1.0	1.0	1.0
Date Analyzed	05.21.97	05.21.97	05.19.97	05.20.97	05.20.97
Analysis Time	1404	2227	2333	0014	0031
RES Code	PP01	PD11	PP01	PP01	PP01

↑ DUPLICATE

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Code: 123270529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21285-6	SB5102*CS*SB51 (6-8')	05-07-97/1015	HAA59
21285-7	SB10501*CS*SB51 (6-8')	05-07-97/1015	HAA59
21285-8	SB5001*CS*SB50 (4-6')	05-07-97/1050	HAA59
21285-9	SB5002*CS*SB50 (8-10')	05-07-97/1105	HAA59
21285-10	SB4901*CS*SB49 (8-10')	05-07-97/1345	HAA59

Pump House #2

PARAMETER	21285-6	21285-7	21285-8	21285-9	21285-10
Polynuclear Aromatic Hydrocarbons (8100)					
Acenaphthene, ug/kg dw	<400	<410	<370	<380	<350
Acenaphthylene, ug/kg dw	<400	<410	<370	<380	<350
Benzo(a)pyrene, ug/kg dw	<400	<410	<370	<380	<350
Benzo(g,h,i)perylene, ug/kg dw	<400	<410	<370	<380	<350
Benzo(b,k)fluoranthene, ug/kg dw	390*J	300*J	<370	<380	<350
Chrysene + Benzo(a)anthracene, ug/kg dw	870	630	<370	<380	220*J
Fluoranthene, ug/kg dw	1600	1500	<370	<380	510
Fluorene, ug/kg dw	<400	<410	<370	<380	<350
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<400	<410	<370	<380	<350
Naphthalene, ug/kg dw	<400	<410	<370	<380	<350
Phenanthrene + Anthracene, ug/kg dw	1500	<410	<370	<380	470
Pyrene, ug/kg dw	1400	1000	<370	<380	450
1-Methylnaphthalene, ug/kg dw	<400	<410	<370	<380	<350
2-Methylnaphthalene, ug/kg dw	<400	<410	<370	<380	<350
Surrogate - 2-Fluorobiphenyl	50 %	46 %	52 %	49 %	45 %
Batch ID	0509Y	0509Y	0509Y	0509Y	0509Y
PF Code	T	T	T	T	T

↑ DUPLICATE

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

LOG NO: T7-21285
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Ms. Christine Hettinger
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Project: HAA59/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 123270529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21285-6	SB5102*CS*SB51 (6-8')	05-07-97/1015	HAA59
21285-7	SB10501*CS*SB51 (6-8')	05-07-97/1015	HAA59
21285-8	SB5001*CS*SB50 (4-6')	05-07-97/1050	HAA59
21285-9	SB5002*CS*SB50 (8-10')	05-07-97/1105	HAA59
21285-10	SB4901*CS*SB49 (8-10')	05-07-97/1345	HAA59

PumpHouse #2

PARAMETER	21285-6	21285-7	21285-8	21285-9	21285-10
Preparation Date	05.09.97	05.09.97	05.09.97	05.09.97	05.09.97
Preparation Time	2100	2100	2100	2100	2100
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Analyzed	05.22.97	05.22.97	05.20.97	05.20.97	05.22.97
Analysis Time	0331	0417	0815	0901	0504
RES Code	PP01	PD11	PP01	PP01	PP01
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	32	29	<11	<11	11
Surrogate - o-Terphenyl	72 %	72 %	67 %	65 %	66 %
Batch ID	0509Y	0509Y	0509Y	0509Y	0509Y
PF Code	T	T	T	T	T
Preparation Date	05.09.97	05.09.97	05.09.97	05.09.97	05.09.97
Preparation Time	2100	2100	2100	2100	2100
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Analyzed	05.22.97	05.22.97	05.20.97	05.20.97	05.22.97
Analysis Time	0331	0417	0815	0901	0504
RES Code	PP01	PD11	PP01	PP01	PP01
Percent Solids, %	83 %	82 %	90 %	88 %	94 %

↑ DUPLICATE

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SL SAVANNAH LABORATORIES
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2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

LOG NO: T7-21285
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Atlanta, GA 30361

Project: HAA59/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 104270618

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21285-11	SB4902*CS*SB49 (10-12')	05-07-97/1350	HAA59
21285-12	SB4801*CS*SB48 (4-6')	05-07-97/1425	HAA59
21285-13	SB4802*CS*SB48 (10-12') Pump House #2	05-07-97/1435	HAA59
21285-14	SB4701*CS*SB47 (4-6')	05-07-97/1525	HAA59
21285-15	SB4702*CS*SB47 (10-12')	05-07-97/1535	HAA59

PARAMETER	21285-11	21285-12	21285-13	21285-14	21285-15
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<1600	<5.7	<670	<5.5	<67
Toluene, ug/kg dw	23000	<5.7	10000	<5.5	<300
Ethylbenzene, ug/kg dw	38000	<5.7	16000	<5.5	91*J
Xylenes, ug/kg dw	240000	<5.7	100000	<5.5	650
Methyl tert-butyl ether (MTBE), ug/kg dw	<740000	<57	<30000	<55	<3000
Surrogate - a,a,a-Trifluorotoluene	109 %	101 %	120 %	186%*F36	110 %
Batch ID	0519A	0519F	0519A	0519F	0519A
Clock ID	1A0521	1G0519	1A0521	1G0519	1A0519
PF Code	T	T	T	T	T
Preparation Date	05.20.97	05.20.97	05.20.97	05.20.97	05.19.97
Preparation Time	1500	0055	1500	0136	0900
Initial Volume/Weight	4.01g	4.95g	4.02g	5.03g	3.96g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	1000	1.0	400	1.0	40
Date Analyzed	05.21.97	05.20.97	05.21.97	05.20.97	05.19.97
Analysis Time	1557	0055	1653	0136	1914
RES Code	PP01	PP01	PP01	PP01	PP01

SL SAVANNAH LABORATORIES
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Atlanta, GA 30361

Project: HAA59/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 123270529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21285-11	SB4902*CS*SB49 (10-12')	05-07-97/1350	HAA59
21285-12	SB4801*CS*SB48 (4-6')	05-07-97/1425	HAA59
21285-13	SB4802*CS*SB48 (10-12')	05-07-97/1435	HAA59
21285-14	SB4701*CS*SB47 (4-6')	05-07-97/1525	HAA59
21285-15	SB4702*CS*SB47 (10-12')	05-07-97/1535	HAA59

Pumphouse #2

PARAMETER	21285-11	21285-12	21285-13	21285-14	21285-15
Gasoline Range Organics (8015M)					
Gasoline Range Organics, mg/kg dw	4400	<0.20	1900	0.078*J	56
Surrogate - a,a,a-Trifluorotoluene	118 %	79 %	113 %	146 %	101 %
Batch ID	0519A	0519F	0519A	0519F	0519A
Clock ID	1A0521	1G0519	1A0521	1G0519	1A0519
PF Code	T	T	T	T	T
Preparation Date	05.20.97	05.20.97	05.20.97	05.20.97	05.19.97
Preparation Time	1500	0055	1500	0136	0900
Initial Volume/Weight	4.01g	4.95g	4.02g	5.03g	3.96g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	1000	1.0	400	1.0	40
Date Analyzed	05.21.97	05.20.97	05.21.97	05.20.97	05.19.97
Analysis Time	1557	0055	1653	0136	1914
RES Code	PP01	PP01	PP01	PP01	PP01

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Sampled By: Client
Code: 123270529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21285-11	SB4902*CS*SB49 (10-12')	05-07-97/1350	HAA59
21285-12	SB4801*CS*SB48 (4-6')	05-07-97/1425	HAA59
21285-13	SB4802*CS*SB48 (10-12')	05-07-97/1435	HAA59
21285-14	SB4701*CS*SB47 (4-6')	05-07-97/1525	HAA59
21285-15	SB4702*CS*SB47 (10-12')	05-07-97/1535	HAA59

Pump House #2

PARAMETER	21285-11	21285-12	21285-13	21285-14	21285-15
Polynuclear Aromatic Hydrocarbons (8100)					
Acenaphthene, ug/kg dw	<400	<370	<410	<1800	<400
Acenaphthylene, ug/kg dw	<400	<370	<410	<1800	<400
Benzo(a)pyrene, ug/kg dw	250	<370	<410	<1800	<400
Benzo(g,h,i)perylene, ug/kg dw	<400	<370	<410	<1800	<400
Benzo(b,k)fluoranthene, ug/kg dw	760	<370	410	<1800	340*J
Chrysene + Benzo(a)anthracene, ug/kg dw	630	<370	1000	<1800	730
Fluoranthene, ug/kg dw	2500	<370	1500	<1800	1300
Fluorene, ug/kg dw	260	<370	<410	<1800	<400
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<400	<370	<410	<1800	<400
Naphthalene, ug/kg dw	<400	<370	<410	<1800	<400
Phenanthrene + Anthracene, ug/kg dw	2700	<370	1400	<1800	1100
Pyrene, ug/kg dw	2000	<370	1500	<1800	1200
1-Methylnaphthalene, ug/kg dw	<400	<370	<410	<1800	<400
2-Methylnaphthalene, ug/kg dw	<400	<370	<410	<1800	<400
Surrogate - 2-Fluorobiphenyl	48 %	53 %	59 %	0 %*F33	42 %
Batch ID	0509Y	0509Y	0509Y	0509Y	0509Y
PF Code	T	T	T	T	T

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

LOG NO: T7-21285
Received: 07 MAY 97
Reported: 28 MAY 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA59/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 123270529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21285-11	SB4902*CS*SB49 (10-12')	05-07-97/1350	HAA59
21285-12	SB4801*CS*SB48 (4-6')	05-07-97/1425	HAA59
21285-13	SB4802*CS*SB48 (10-12')	05-07-97/1435	HAA59
21285-14	SB4701*CS*SB47 (4-6')	05-07-97/1525	HAA59
21285-15	SB4702*CS*SB47 (10-12')	05-07-97/1535	HAA59

Pumphouse #2

PARAMETER	21285-11	21285-12	21285-13	21285-14	21285-15
Preparation Date	05.09.97	05.09.97	05.09.97	05.09.97	05.09.97
Preparation Time	2100	2100	2100	2100	2100
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	1.0	5.0	1.0
Date Analyzed	05.20.97	05.20.97	05.20.97	05.21.97	05.20.97
Analysis Time	1212	0948	1259	2338	1345
RES Code	PP01	PP01	PP01	PP01	PP01
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	35	61	33	360	22
Surrogate - o-Terphenyl	78 %	69 %	83 %	0 %*F33	68 %
Batch ID	0509Y	0509Y	0509Y	0509Y	0509Y
PF Code	T	T	T	T	T
Preparation Date	05.09.97	05.09.97	05.09.97	05.09.97	05.09.97
Preparation Time	2100	2100	2100	2100	2100
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	1.0	5.0	1.0
Date Analyzed	05.20.97	05.20.97	05.20.97	05.21.97	05.20.97
Analysis Time	1212	0948	1259	2338	1345
RES Code	PP01	PP01	PP01	PP01	PP01
Percent Solids, %	84 %	89 %	82 %	90 %	83 %

REVISED

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

LOG NO: T7-21285
Received: 07 MAY 97
Reported: 28 MAY 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA59/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 104270618

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21285-16	SB4601*CS*SB46 (4-6') } Pump House #2	05-07-97/1610	HAA59
21285-17	SB4602*CS*SB46 (10-12')	05-07-97/1620	HAA59
21285-18	SB10401*CS*SB46 (10-12')	05-07-97/1620	HAA59
21285-19	WB3301*CS*MW33 (4-6')	05-07-97/0924	HAA59
21285-20	WB3302*CS*MW33 (8-10')	05-07-97/0936	HAA59

PARAMETER	21285-16	21285-17	21285-18	21285-19	21285-20
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<5.5	<67	<66	<6.0	<5.8
Toluene, ug/kg dw	<5.5	<300	<300	120	13
Ethylbenzene, ug/kg dw	<5.5	230*J	<300	25	<5.8
Xylenes, ug/kg dw	<5.5	2200	260*J	170	140
Methyl tert-butyl ether (MTBE), ug/kg dw	<55	<3000	<3000	<60	<58
Surrogate - a,a,a-Trifluorotoluene	100 %	111 %	112 %	168%*F36	98 %
Batch ID	0519F	0519A	0519A	0519F	0519F
Clock ID	1G0519	1A0519	1A0519	1G0520	1G0520
PF Code	T	T	T	T	T
Preparation Date	05.20.97	05.19.97	05.19.97	05.20.97	05.20.97
Preparation Time	0217	0900	0900	1031	1113
Initial Volume/Weight	4.97g	4.00g	4.01g	5.02g	5.05g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	1.0	40	40	1.0	1.0
Date Analyzed	05.20.97	05.19.97	05.19.97	05.20.97	05.20.97
Analysis Time	0217	2009	2105	1031	1113
RES Code	PP01	PP01	PD11	PP01	PP01

↑ DUPLICATE

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

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LOG NO: T7-21285
Received: 07 MAY 97
Reported: 28 MAY 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA59/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 123270529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21285-16	SB4601*CS*SB46 (4-6') } Pump House #2	05-07-97/1610	HAA59
21285-17	SB4602*CS*SB46 (10-12') } Pump House #2	05-07-97/1620	HAA59
21285-18	SB10401*CS*SB46 (10-12') } Pump House #2	05-07-97/1620	HAA59
21285-19	WB3301*CS*MW33 (4-6')	05-07-97/0924	HAA59
21285-20	WB3302*CS*MW33 (8-10')	05-07-97/0936	HAA59

PARAMETER	21285-16	21285-17	21285-18	21285-19	21285-20
Gasoline Range Organics (8015M)					
Gasoline Range Organics, mg/kg dw	<0.20	100	45	0.21*J	0.34
Surrogate - a,a,a-Trifluorotoluene	87 %	104 %	102 %	74 %	102 %
Batch ID	0519F	0519A	0519A	0519F	0519F
Clock ID	1G0519	1A0519	1A0519	1G0520	1G0520
PF Code	T	T	T	T	T
Preparation Date	05.20.97	05.19.97	05.19.97	05.20.97	05.20.97
Preparation Time	0217	0900	0900	1031	1113
Initial Volume/Weight	4.97g	4.00g	4.01g	5.02g	5.05g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	1.0	40	40	1.0	1.0
Date Analyzed	05.20.97	05.19.97	05.19.97	05.20.97	05.20.97
Analysis Time	0217	2009	2105	1031	1113
RES Code	PP01	PP01	PD11	PP01	PP01

↑ DUPLICATE

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

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Atlanta, GA 30361

Project: HAA59/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 123270529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21285-16	SB4601*CS*SB46 (4-6') } Pump House #2	05-07-97/1610	HAA59
21285-17	SB4602*CS*SB46 (10-12') } Pump House #2	05-07-97/1620	HAA59
21285-18	SB10401*CS*SB46 (10-12') } Pump House #2	05-07-97/1620	HAA59
21285-19	WB3301*CS*MW33 (4-6')	05-07-97/0924	HAA59
21285-20	WB3302*CS*MW33 (8-10')	05-07-97/0936	HAA59

PARAMETER	21285-16	21285-17	21285-18	21285-19	21285-20
Polynuclear Aromatic Hydrocarbons (8100)					
Acenaphthene, ug/kg dw	<360	<410	<400	<400	<390
Acenaphthylene, ug/kg dw	<360	<410	<400	<400	<390
Benzo(a)pyrene, ug/kg dw	<360	<410	<400	<400	<390
Benzo(g,h,i)perylene, ug/kg dw	<360	<410	<400	<400	<390
Benzo(b,k)fluoranthene, ug/kg dw	<360	<410	<400	<400	<390
Chrysene + Benzo(a)anthracene, ug/kg dw	<360	420	240*J	<400	<390
Fluoranthene, ug/kg dw	<360	870	590	<400	<390
Fluorene, ug/kg dw	<360	<410	<400	<400	<390
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<360	<410	<400	<400	<390
Naphthalene, ug/kg dw	<360	<410	<400	<400	<390
Phenanthrene + Anthracene, ug/kg dw	<360	740	500	<400	<390
Pyrene, ug/kg dw	<360	760	610	<400	<390
1-Methylnaphthalene, ug/kg dw	<360	<410	<400	<400	<390
2-Methylnaphthalene, ug/kg dw	<360	<410	<400	<400	<390
Surrogate - 2-Fluorobiphenyl	60 %	66 %	50 %	56 %	49 %
Batch ID	0509Y	0509Y	0509Y	0509Y	0509Y
PF Code	T	T	T	T	T

↑ DUPLICATE

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

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LOG NO: T7-21285
Received: 07 MAY 97
Reported: 28 MAY 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA59/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 123270529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21285-16	SB4601*CS*SB46 (4-6') } Pump House #2	05-07-97/1610	HAA59
21285-17	SB4602*CS*SB46 (10-12')	05-07-97/1620	HAA59
21285-18	SB10401*CS*SB46 (10-12')	05-07-97/1620	HAA59
21285-19	WB3301*CS*MW33 (4-6')	05-07-97/0924	HAA59
21285-20	WB3302*CS*MW33 (8-10')	05-07-97/0936	HAA59

PARAMETER	21285-16	21285-17	21285-18	21285-19	21285-20
Preparation Date	05.09.97	05.09.97	05.09.97	05.09.97	05.09.97
Preparation Time	2100	2100	2100	2100	2100
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Analyzed	05.20.97	05.20.97	05.22.97	05.22.97	05.22.97
Analysis Time	1432	1518	0550	0637	0724
RES Code	PP01	PP01	PD11	PP01	PP01
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	<11	18	16	15	9.8*J
Surrogate - o-Terphenyl	76 %	85 %	71 %	76 %	68 %
Batch ID	0509Y	0509Y	0509Y	0509Y	0509Y
PF Code	T	T	T	T	T
Preparation Date	05.09.97	05.09.97	05.09.97	05.09.97	05.09.97
Preparation Time	2100	2100	2100	2100	2100
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Analyzed	05.20.97	05.20.97	05.22.97	05.22.97	05.22.97
Analysis Time	1432	1518	0550	0637	0724
RES Code	PP01	PP01	PD11	PP01	PP01
Percent Solids, %	92 %	82 %	83 %	83 %	85 %

↑ DUPLICATE

CHAIN - OF - CUSTODY - RECORD

M&E Metcalf & Eddy

PROJECT NAME: Hunter II

PROJECT NO: 019457-4102

LABORATORY ID: SLS

SAMPLER(S) NAME: Daniel Howard

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: Daniel Howard

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F) FIELD	ANALYTICAL PARAMETERS/METHODS: VOCS 8020	SVOC PAH 8100	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO 8100M	GRO 8015M
5/7/97	0800	S	SB5401	SB54	PP01	4/6	2	N	—	X	X					X	X
	0805	S	SB5402	SB54	PP01	6/8	2	N	—	X	X					X	X
	0835	S	SB5201	SB52	PP01	4/6	2	N	—	X	X					X	X
	0845	S	SB5202	SB52	PP01	6/8	2	N	—	X	X					X	X
	1000	S	SB5101	SB51	PP01	2/4	2	N	—	X	X					X	X
*	1015	S	SB5102	SB51	PP01	6/8	2	N	—	X	X					X	X
	1000 15 min	S	SB10501	SB51	PD1	6/8	2	N	—	X	X					X	X
	1050	S	SB5001	SB50	PP01	4/6	2	N	—	X	X					X	X
	1105	S	SB5002	SB50	PP01	8/10	2	N	—	X	X					X	X
	1345	S	SB4901	SB49	PP01	8/10	2	N	—	X	X					X	X
	1350	S	SB4902	SB49	PP01	10/12	2	N	—	X	X					X	X
↓	1425	S	SB4801	SB48	PP01	4/6	2	N	—	X	X					X	X

Relinquished by: (Signature) Daniel Howard — Date/Time: 5/7/97/1804 — Received by: M. Marshall T721285 — Date/Time: 5.7.97 6:07

Cooler Temperature: 2.1

Remarks: * Use sample SB5102 for MS/MSD also

RELINQUISHED By: (Signature) M. Howard — DATE 5/8/97 — TIME 3:30

RECEIVED By: (Signature) — DATE — TIME

AIRBILL CO. Hand Delivered by M&E

TRACKING NO:

Send Results to:
Christine Hendrickson / METCALF & EDDY, INC.
1401 Peachtree St., NE., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____
STORED/SHIPPED IN ICE (Y)/N

V-97

CHAIN - OF - CUSTODY - RECORD

M&E Metcalf & Eddy

PROJECT NAME: Hunter IV
PROJECT NO: 019457-4102
LABORATORY ID: SLS
SAMPLER(S) NAME: Daniel Howard

TASK ORDER NO.
SAMPLE EVENT:
PROGRAM TYPE:
SAMPLER(S) SIGNATURE: Daniel Howard

DATE	TIME MILITARY	MATRIX (SAS)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD TURNAROUND (Y/N)*	FILTERED (LAB OR FIELD)
5/7/97	1435	S	SB4802	SB48	PP01	10/12	2	N	—
	1525	S	SB4701	SB47	PP01	4/6	2	N	—
	1535	S	SB4702	SB47	PP01	10/12	2	N	—
	1610	S	SB4601	SB46	PP01	4/6	2	N	—
	1620	S	SB4602	SB46	PP01	10/12	2	N	—
DH	~~1620~~	~~S~~	~~SB4602~~	~~SB46~~	PP01	10/12	2	N	—
	—	W	TEMP	Blank			1		
5/7/97	1620	S	SB10401	SB46	PD2	10/12	2	N	—

ANALYTICAL PARAMETERS/METHODS

Method No.	VOCs 8020	SVOC PAH 8100	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO 8100M	GRO 8015M
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X
	~~X~~	~~X~~					~~X~~	~~X~~
	X	X					X	X

Relinquished by: (Signature) Daniel Howard
Date/Time: 5/7/97/1804
Received by: M. Howell ~~5-7-97~~ (MH)
T721285
Date/Time: 5.7.97 6:07

Cooler Temperature: 2.1

Remarks:

RELINQUISHED By: (Signature) M. Howell
DATE: 5.8.97
TIME: 730

RECEIVED By: (Signature) M. Bryant
DATE: 5/8/97
TIME: 0930

AIRBILL CO. Hand Delivered by M&E
TRACKING NO:

c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____
STORED/SHIPPED IN ICE (Y) N

V-98

REVISED

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

LOG NO: T7-21284
Received: 08 MAY 97
Reported: 30 MAY 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA60/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 105670618

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21284-1	SB4501*CS*SB45 (4-6')	05-07-97/1715	HAA60
21284-2	SB4502*CS*SB45 (8-10')	05-07-97/1720	HAA60
21284-3	SB4401*CS*SB44 (8-10')	05-07-97/1745	HAA60
21284-4	SB4402*CS*SB44 (10-12')	05-07-97/1750	HAA60
21284-5	SB4301*CS*SB43 (4-6')	05-08-97/1100	HAA60

Pumphouse #2

PARAMETER	21284-1	21284-2	21284-3	21284-4	21284-5
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<5.5	<5.7	<5.4	<70	<5.1
Toluene, ug/kg dw	9.5	<5.7	<5.4	<320	<5.1
Ethylbenzene, ug/kg dw	<5.5	<5.7	<5.4	<320	<5.1
Xylenes, ug/kg dw	14	<5.7	<5.4	370	<5.1
Methyl tert-butyl ether (MTBE), ug/kg dw	<55	<57	<54	<3200	<51
Surrogate - a,a,a-Trifluorotoluene	101 %	91 %	99 %	109 %	98 %
Batch ID	0520F	0520F	0520F	0519A	0520F
Clock ID	2G0520	2G0520	2G0520	1A0519	2G0520
PF Code	T	T	T	T	T
Preparation Date	05.20.97	05.20.97	05.20.97	05.19.97	05.20.97
Preparation Time	2024	2350	2105	0900	2147
Initial Volume/Weight	5.01g	5.01g	5.02g	3.97g	5.02g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	1.0	1.0	1.0	40	1.0
Date Analyzed	05.20.97	05.20.97	05.20.97	05.19.97	05.20.97
Analysis Time	2024	2350	2105	2255	2147
RES Code	PP01	PP01	PP01	PP01	PP01

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

LOG NO: T7-21284
Received: 08 MAY 97
Reported: 30 MAY 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA60/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 10467063

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21284-1	SB4501*CS*SB45 (4-6')	05-07-97/1715	HAA60
21284-2	SB4502*CS*SB45 (8-10')	05-07-97/1720	HAA60
21284-3	SB4401*CS*SB44 (8-10')	05-07-97/1745	HAA60
21284-4	SB4402*CS*SB44 (10-12')	05-07-97/1750	HAA60
21284-5	SB4301*CS*SB43 (4-6')	05-08-97/1100	HAA60

Pump House #2

PARAMETER	21284-1	21284-2	21284-3	21284-4	21284-5
Gasoline Range Organics (8015M)					
Gasoline Range Organics, mg/kg dw	<0.20	0.69	0.062	70	<0.18
Surrogate - a,a,a-Trifluorotoluene	91 %	85 %	96 %	103 %	71 %
Batch ID	0520F	0520F	0520F	0519A	0520F
Clock ID	2G0520	2G0520	2G0520	1A0519	1G0520
PF Code	T	T	T	T	T
Preparation Date	05.20.97	05.20.97	05.20.97	05.19.97	05.20.97
Preparation Time	2024	2350	2105	0900	2147
Initial Volume/Weight	5.01g	5.02g	5.02g	3.97g	5.02
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	1.0	1.0	1.0	40	1.0
Date Analyzed	05.20.97	05.20.97	05.20.97	05.19.97	05.20.97
Analysis Time	2024	2350	2105	2255	2147
RES Code	PP01	PP01	PP01	PP01	PP01

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LOG NO: T7-21284
Received: 08 MAY 97
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Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA60/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 10467063

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21284-1	SB4501*CS*SB45 (4-6')	05-07-97/1715	HAA60
21284-2	SB4502*CS*SB45 (8-10')	05-07-97/1720	HAA60
21284-3	SB4401*CS*SB44 (8-10')	05-07-97/1745	HAA60
21284-4	SB4402*CS*SB44 (10-12')	05-07-97/1750	HAA60
21284-5	SB4301*CS*SB43 (4-6')	05-08-97/1100	HAA60

Pumphouse #2

PARAMETER	21284-1	21284-2	21284-3	21284-4	21284-5
Polynuclear Aromatic Hydrocarbons (8100)					
Acenaphthene, ug/kg dw	<370	<380	<360	<360	420*J
Acenaphthylene, ug/kg dw	<370	<380	<360	<360	<680
Benzo(a)pyrene, ug/kg dw	<370	540	520	<360	<680
Benzo(g,h,i)perylene, ug/kg dw	<370	<380	<360	<360	<680
Benzo(b,k)fluoranthene, ug/kg dw	<370	1200	1400	<360	<680
Chrysene + Benzo(a)anthracene, ug/kg dw	<370	600	440	<360	1600
Fluoranthene, ug/kg dw	<370	<380	570	380	3300
Fluorene, ug/kg dw	<370	<380	<360	<360	520*J
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<370	560	<360	<360	<680
Naphthalene, ug/kg dw	<370	<380	<360	<360	680*J
Phenanthrene + Anthracene, ug/kg dw	<370	<380	<360	<360	4400
Pyrene, ug/kg dw	<370	500	2000	480	1700
1-Methylnaphthalene, ug/kg dw	<370	<380	<360	<360	<680
2-Methylnaphthalene, ug/kg dw	<370	<380	<360	<360	420*J
Surrogate - 2-Fluorobiphenyl	59 %	68 %	82 %	40 %	32 %
Batch ID	0512V	0512V	0512V	0512V	0512V
PF Code	T	T	T	T	T

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Project: HAA60/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 16047063

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21284-1	SB4501*CS*SB45 (4-6')	05-07-97/1715	HAA60
21284-2	SB4502*CS*SB45 (8-10')	05-07-97/1720	HAA60
21284-3	SB4401*CS*SB44 (8-10')	05-07-97/1745	HAA60
21284-4	SB4402*CS*SB44 (10-12')	05-07-97/1750	HAA60
21284-5	SB4301*CS*SB43 (4-6')	05-08-97/1100	HAA60

Puma House #2

PARAMETER	21284-1	21284-2	21284-3	21284-4	21284-5
Preparation Date	05.12.97	05.12.97	05.12.97	05.12.97	05.12.97
Preparation Time	2100	2100	2100	2100	2100
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	1.0	1.0	2.0
Date Analyzed	05.20.97	05.21.97	05.21.97	05.20.97	05.22.97
Analysis Time	2240	1104	0624	2102	2330
RES Code	PP01	PP01	PP01	PP01	PP01
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	9.9*J	33	140	140	68
Surrogate - o-Terphenyl	74 %	80 %	82 %	73 %	86 %
Batch ID	0512V	0512V	0512V	0512V	0512V
PF Code	T	T	T	T	T
Preparation Date	05.12.97	05.12.97	05.12.97	05.12.97	05.12.97
Preparation Time	2100	2100	2100	2100	2100
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	1.0	1.0	2.0
Date Analyzed	05.20.97	05.21.97	05.21.97	05.20.97	05.22.97
Analysis Time	2240	1104	0624	2102	2330
RES Code	PP01	PP01	PP01	PP01	PP01
Percent Solids, %	91 %	88 %	93 %	79 %	98 %

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Ms. Christine Hettinger
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Atlanta, GA 30361

Project: HAA60/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 105670618

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
21284-6	SB4302*CS*SB43 (10-12')	Pumphouse #2	05-08-97/1110	HAA60
21284-7	SB4201*CS*SB42 (4-6')		05-08-97/1140	HAA60
21284-8	SB4202*CS*SB42 (8-10')		05-08-97/1150	HAA60
21284-9	SB4101*CS*SB41 (4-6')	Pumphouse #1	05-08-97/1405	HAA60
21284-10	SB4102*CS*SB41 (10-12')		05-08-97/1415	HAA60

PARAMETER	21284-6	21284-7	21284-8	21284-9	21284-10
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<170	<6.2	<69	<5.8	<6.2
Toluene, ug/kg dw	<770	25	750	<5.8	<6.2
Ethylbenzene, ug/kg dw	1000	33	2400	<5.8	<6.2
Xylenes, ug/kg dw	5700	36	17000	12	<6.2
Methyl tert-butyl ether (MTBE), ug/kg dw	<7700	<62	<7500	<58	<62
Surrogate - a,a,a-Trifluorotoluene	105 %	117 %	110 %	107 %	100 %
Batch ID	0519A	0520F	0519A	0521F	0520F
Clock ID	1A0521	2G0521	1A0519	1G0521	1G0522
PF Code	T	T	T	T	T
Preparation Date	05.19.97	05.21.97	05.19.97	05.22.97	05.22.97
Preparation Time	0900	0838	0900	0142	1142
Initial Volume/Weight	3.99g	5.04g	3.98g	5.05g	4.95g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	100	1.0	40	1.0	1.0
Date Analyzed	05.21.97	05.21.97	05.19.97	05.22.97	05.22.97
Analysis Time	2323	0838	2350	0142	1142
RES Code	PP01	PP01	PP01	PP01	PP01

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Project: HAA60/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 10467063

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21284-6	SB4302*CS*SB43 (10-12') } Pumphouse #2	05-08-97/1110	HAA60
21284-7	SB4201*CS*SB42 (4-6')	05-08-97/1140	HAA60
21284-8	SB4202*CS*SB42 (8-10')	05-08-97/1150	HAA60
21284-9	SB4101*CS*SB41 (4-6') } Pumphouse #1	05-08-97/1405	HAA60
21284-10	SB4102*CS*SB41 (10-12')	05-08-97/1415	HAA60

PARAMETER	21284-6	21284-7	21284-8	21284-9	21284-10
Gasoline Range Organics (8015M)					
Gasoline Range Organics, mg/kg dw	130	0.58	170	0.052*J	<0.22
Surrogate - a,a,a-Trifluorotoluene	105 %	78 %	102 %	84 %	100 %
Batch ID	0519A	0520F	0519A	0521F	0520F
Clock ID	1A0521	1G0521	1A0519	1G0522	1G0522
PF Code	T	T	T	T	T
Preparation Date	05.19.97	05.21.97	05.19.97	05.22.97	05.22.97
Preparation Time	0900	0838	0900	1103	1142
Initial Volume/Weight	3.99g	5.04g	3.98g	4.99g	4.95g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	100	1.0	40	1.0	1.0
Date Analyzed	05.21.97	05.21.97	05.19.97	05.22.97	05.22.97
Analysis Time	2323	0838	2350	1103	1142
RES Code	PP01	PP01	PP01	PP01	PP01

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Sampled By: Client
Code: 16047063

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
21284-6	SB4302*CS*SB43 (10-12')	} PumpHouse #2	05-08-97/1110	HAA60
21284-7	SB4201*CS*SB42 (4-6')		05-08-97/1140	HAA60
21284-8	SB4202*CS*SB42 (8-10')		05-08-97/1150	HAA60
21284-9	SB4101*CS*SB41 (4-6')	} Pump House #1	05-08-97/1405	HAA60
21284-10	SB4102*CS*SB41 (10-12')		05-08-97/1415	HAA60

PARAMETER	21284-6	21284-7	21284-8	21284-9	21284-10
Polynuclear Aromatic Hydrocarbons (8100)					
Acenaphthene, ug/kg dw	<410	<420	<830	<390	<410
Acenaphthylene, ug/kg dw	<410	<420	<830	<390	<410
Benzo(a)pyrene, ug/kg dw	<410	<420	240*J	<390	<410
Benzo(g,h,i)perylene, ug/kg dw	<410	<420	<830	<390	<410
Benzo(b,k)fluoranthene, ug/kg dw	<410	<420	<830	<390	<410
Chrysene + Benzo(a)anthracene, ug/kg dw	290*J	320	3000	<390	<410
Fluoranthene, ug/kg dw	650	290*J	3300	<390	<410
Fluorene, ug/kg dw	<410	<420	<830	<390	<410
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<410	<420	<830	<390	<410
Naphthalene, ug/kg dw	<410	<420	<830	<390	<410
Phenanthrene + Anthracene, ug/kg dw	540	220*J	<830	<390	<410
Pyrene, ug/kg dw	600	320*J	3900	<390	<410
1-Methylnaphthalene, ug/kg dw	<410	<420	<830	<390	<410
2-Methylnaphthalene, ug/kg dw	<410	<420	<830	<390	<410
Surrogate - 2-Fluorobiphenyl	36 %	45 %	51 %	57 %	52 %
Batch ID	0512V	0512V	0512V	0512V	0512V
PF Code	T	T	T	T	T
Preparation Date	05.12.97	05.12.97	05.12.97	05.12.97	05.12.97

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Project: HAA60/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 16047063

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
21284-6	SB4302*CS*SB43 (10-12')	Pump House # 2	05-08-97/1110	HAA60
21284-7	SB4201*CS*SB42 (4-6')		05-08-97/1140	HAA60
21284-8	SB4202*CS*SB42 (8-10')		05-08-97/1150	HAA60
21284-9	SB4101*CS*SB41 (4-6')	Pump House # 1	05-08-97/1405	HAA60
21284-10	SB4102*CS*SB41 (10-12')		05-08-97/1415	HAA60

PARAMETER	21284-6	21284-7	21284-8	21284-9	21284-10
Preparation Time	2100	2100	2100	2100	2100
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	2.0	1.0	1.0
Date Analyzed	05.20.97	05.20.97	05.22.97	05.21.97	05.21.97
Analysis Time	2153	2326	2244	0013	0059
RES Code	PP01	PP01	PP01	PP01	PP01
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	13	17	140	7.8*J	<12
Surrogate - o-Terphenyl	64 %	75 %	82 %	77 %	66 %
Batch ID	0512V	0512V	0512V	0512V	0512V
PF Code	T	T	T	T	T
Preparation Date	05.12.97	05.12.97	05.12.97	05.12.97	05.12.97
Preparation Time	2100	2100	2100	2100	2100
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	2.0	1.0	1.0
Date Analyzed	05.20.97	05.20.97	05.22.97	05.21.97	05.21.97
Analysis Time	2153	2326	2244	0013	0059
RES Code	PP01	PP01	PP01	PP01	PP01
Percent Solids, %	81 %	80 %	80 %	86 %	82 %

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Project: HAA60/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 105670618

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21284-21	WB2501*CS*MW25 (2-4')	05-08-97/0907	HAA60
21284-22	WB2502*CS*MW25 (8-10')	05-08-97/0924	HAA60
21284-23	WB2601*CS*MW26 (4-6')	05-08-97/1038	HAA60
21284-24	WB2602*CS*MW26 (8-10')	05-08-97/1047	HAA60
21284-25	WB2901*CS*MW29 (8-10')	05-08-97/1406	HAA60

Pump House #2

PARAMETER	21284-21	21284-22	21284-23	21284-24	21284-25
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<5.2	<3300	<5.6	<6.3	<5.5
Toluene, ug/kg dw	<5.2	<15000	<5.6	<6.3	<5.5
Ethylbenzene, ug/kg dw	<5.2	49000	<5.6	<6.3	<5.5
Xylenes, ug/kg dw	<5.2	270000	<5.6	<6.3	<5.5
Methyl tert-butyl ether (MTBE), ug/kg dw	<52	<150000	<56	<63	<55
Surrogate - a,a,a-Trifluorotoluene	97 %	109 %	99 %	100 %	102 %
Batch ID	0520F	0519A	0520F	0520F	0521F
Clock ID	2G0521	1A0520	2G0521	1G0522	2G0522
PF Code	T	T	T	T	T
Preparation Date	05.22.97	05.20.97	05.22.97	05.22.97	05.22.97
Preparation Time	0020	1500	0101	1259	1801
Initial Volume/Weight	5.01g	4.03g	5.01g	4.97g	5.01g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	1.0	2000	1.0	1.0	1.0
Date Analyzed	05.22.97	05.21.97	05.22.97	05.22.97	05.22.97
Analysis Time	0020	0353	0101	1259	1801
RES Code	PP01	PP01	PP01	PP01	PP01

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Sampled By: Client
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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21284-21	WB2501*CS*MW25 (2-4')	05-08-97/0907	HAA60
21284-22	WB2502*CS*MW25 (8-10')	05-08-97/0924	HAA60
21284-23	WB2601*CS*MW26 (4-6')	05-08-97/1038	HAA60
21284-24	WB2602*CS*MW26 (8-10')	05-08-97/1047	HAA60
21284-25	WB2901*CS*MW29 (8-10')	05-08-97/1406	HAA60

Pumphouse #2

PARAMETER	21284-21	21284-22	21284-23	21284-24	21284-25
Gasoline Range Organics (8015M)					
Gasoline Range Organics, mg/kg dw	<0.19	7900	<0.20	0.42	<0.20
Surrogate - a,a,a-Trifluorotoluene	91 %	108 %	88 %	100 %	86 %
Batch ID	0520F	0519A	0520F	0520F	0521F
Clock ID	1G0522	1A0520	1G0522	1G0522	2G0522
PF Code	T	T	T	T	T
Preparation Date	05.22.97	05.20.97	05.22.97	05.22.97	05.22.97
Preparation Time	1455	1500	1533	1259	1801
Initial Volume/Weight	5.01g	4.03g	5.05g	4.97g	5.01g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	1.0	2000	1.0	1.0	1.0
Date Analyzed	05.22.97	05.21.97	05.22.97	05.22.97	05.22.97
Analysis Time	1455	0353	1533	1259	1801
RES Code	PP01	PP01	PP01	PP01	PP01

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21284-21	WB2501*CS*MW25 (2-4')	05-08-97/0907	HAA60
21284-22	WB2502*CS*MW25 (8-10')	05-08-97/0924	HAA60
21284-23	WB2601*CS*MW26 (4-6')	05-08-97/1038	HAA60
21284-24	WB2602*CS*MW26 (8-10')	05-08-97/1047	HAA60
21284-25	WB2901*CS*MW29 (8-10')	05-08-97/1406	HAA60

Pump House #2

PARAMETER	21284-21	21284-22	21284-23	21284-24	21284-25
Polynuclear Aromatic Hydrocarbons (8100)					
Acenaphthene, ug/kg dw	<340	<400	<370	<420	<360
Acenaphthylene, ug/kg dw	<340	<400	<370	<420	<360
Benzo(a)pyrene, ug/kg dw	<340	<400	<370	<420	<360
Benzo(g,h,i)perylene, ug/kg dw	<340	<400	<370	<420	<360
Benzo(b,k)fluoranthene, ug/kg dw	<340	<400	<370	<420	<360
Chrysene + Benzo(a)anthracene, ug/kg dw	<340	<400	<370	<420	<360
Fluoranthene, ug/kg dw	<340	<400	<370	<420	<360
Fluorene, ug/kg dw	<340	<400	<370	<420	<360
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<340	<400	<370	<420	<360
Naphthalene, ug/kg dw	<340	<400	<370	<420	<360
Phenanthrene + Anthracene, ug/kg dw	<340	<400	<370	<420	<360
Pyrene, ug/kg dw	<340	<400	<370	<420	<360
1-Methylnaphthalene, ug/kg dw	<340	<400	<370	<420	<360
2-Methylnaphthalene, ug/kg dw	<340	<400	<370	<420	<360
Surrogate - 2-Fluorobiphenyl	55 %	43 %	60 %	55 %	73 %
Batch ID	0512U	0512U	0512U	0512U	0512U
PF Code	T	T	T	T	T

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

LOG NO: T7-21284
Received: 08 MAY 97
Reported: 30 MAY 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA60/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 10467063

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21284-21	WB2501*CS*MW25 (2-4')	05-08-97/0907	HAA60
21284-22	WB2502*CS*MW25 (8-10')	05-08-97/0924	HAA60
21284-23	WB2601*CS*MW26 (4-6')	05-08-97/1038	HAA60
21284-24	WB2602*CS*MW26 (8-10')	05-08-97/1047	HAA60
21284-25	WB2901*CS*MW29 (8-10')	05-08-97/1406	HAA60

Pumphouse #2

PARAMETER	21284-21	21284-22	21284-23	21284-24	21284-25
Preparation Date	05.12.97	05.12.97	05.12.97	05.12.97	05.12.97
Preparation Time	2100	2100	2100	2100	2100
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Analyzed	05.19.97	05.19.97	05.20.97	05.20.97	05.20.97
Analysis Time	2258	2344	0030	0117	0203
RES Code	PP01	PP01	PP01	PP01	PP01
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	5.1*J	13	<11	<12	22
Surrogate - o-Terphenyl	125 %	58 %	74 %	72 %	61 %
Batch ID	0512U	0512U	0512U	0512U	0512U
PF Code	T	T	T	T	T
Preparation Date	05.12.97	05.12.97	05.12.97	05.12.97	05.12.97
Preparation Time	2100	2100	2100	2100	2100
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Analyzed	05.19.97	05.19.97	05.20.97	05.20.97	05.20.97
Analysis Time	2258	2344	0030	0117	0203
RES Code	PP01	PP01	PP01	PP01	PP01
Percent Solids, %	96 %	82 %	89 %	80 %	91 %

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

LOG NO: T7-21284
Received: 08 MAY 97
Reported: 30 MAY 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA60/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 10467063

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21284-26	WB2902*CS*MW29 (13-15') } PUMPHOUSE #2	05-08-97/1414	HAA60
21284-27	WB6101*CS*MW29 (13-15')	05-08-97/1414	HAA60
21284-28	WB2801*CS*MW28 (8-10')	05-08-97/1518	HAA60
21284-29	WB2802*CS*MW28 (13-15')	05-08-97/1528	HAA60
21284-30	SB3501*CS*SB35 (4-6') } PUMPHOUSE #1	05-08-97/1740	HAA60

PARAMETER	21284-26	21284-27	21284-28	21284-29	21284-30
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<6.3	<6.4	<5.5	<6.6	<5.7
Toluene, ug/kg dw	<6.3	<6.4	<5.5	<6.6	<5.7
Ethylbenzene, ug/kg dw	<5.5	<6.4	<5.5	<6.6	<5.7
Xylenes, ug/kg dw	<5.5	<6.4	<5.5	<6.6	<5.7
Methyl tert-butyl ether (MTBE), ug/kg dw	<63	<64	<55	<66	<57
Surrogate - a,a,a-Trifluorotoluene	<103	101 %	98 %	99 %	100 %
Batch ID	0521F	0521F	0520F	0521F	0521F
Clock ID	2G0522	2G0522	2G0520	2G0522	2G0522
PF Code	T	T	T	T	T
Preparation Date	05.22.97	05.22.97	05.20.97	05.22.97	05.22.97
Preparation Time	1838	1916	2228	1953	2030
Initial Volume/Weight	5.01g	5.04g	5.02g	4.95g	4.96g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Analyzed	05.22.97	05.22.97	05.20.97	05.22.97	05.22.97
Analysis Time	1838	1916	2228	1953	2030
RES Code	PP01	PD11	PP01	PP01	PP01

↑ DUPLICATE

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

LOG NO: T7-21284
Received: 08 MAY 97
Reported: 30 MAY 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA60/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 10467063

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
21284-26	WB2902*CS*MW29 (13-15')	PUMPHOUSE #2	05-08-97/1414	HAA60
21284-27	WB6101*CS*MW29 (13-15')	PUMPHOUSE #2	05-08-97/1414	HAA60
21284-28	WB2801*CS*MW28 (8-10')	PUMPHOUSE #2	05-08-97/1518	HAA60
21284-29	WB2802*CS*MW28 (13-15')	PUMPHOUSE #2	05-08-97/1528	HAA60
21284-30	SB3501*CS*SB35 (4-6')	PUMPHOUSE #1	05-08-97/1740	HAA60

PARAMETER	21284-26	21284-27	21284-28	21284-29	21284-30
Gasoline Range Organics (8015M)					
Gasoline Range Organics, mg/kg dw	<0.23	<0.23	<0.20	<0.24	<0.20
Surrogate - a,a,a-Trifluorotoluene	102 %	97 %	87 %	86 %	78 %
Batch ID	0521F	0521F	0520F	0521F	0521F
Clock ID	2G0522	2G0522	2G0520	2G0522	2G0522
PF Code	T	T	T	T	T
Preparation Date	05.22.97	05.22.97	05.20.97	05.22.97	05.22.97
Preparation Time	1838	1916	2228	1953	2030
Initial Volume/Weight	5.01g	5.04g	5.02g	4.95g	4.96g
Final Extraction Volume (FV1)	5.0ml	5.0ml	5.0ml	5.0ml	5.0ml
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Analyzed	05.22.97	05.22.97	05.20.97	05.22.97	05.22.97
Analysis Time	1838	1916	2228	1953	2030
RES Code	PP01	PD11	PP01	PP01	PP01

↑ DUPLICATE

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

LOG NO: T7-21284
Received: 08 MAY 97
Reported: 30 MAY 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA60/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 10467063

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
21284-26	WB2902*CS*MW29 (13-15') } PUMPHOUSE #2	05-08-97/1414	HAA60
21284-27	WB6101*CS*MW29 (13-15')	05-08-97/1414	HAA60
21284-28	WB2801*CS*MW28 (8-10')	05-08-97/1518	HAA60
21284-29	WB2802*CS*MW28 (13-15')	05-08-97/1528	HAA60
21284-30	SB3501*CS*SB35 (4-6') } PUMPHOUSE #1	05-08-97/1740	HAA60

PARAMETER	21284-26	21284-27	21284-28	21284-29	21284-30
Polynuclear Aromatic Hydrocarbons (8100)					
Acenaphthene, ug/kg dw	<420	<430	<370	<430	<370
Acenaphthylene, ug/kg dw	<420	<430	<370	<430	<370
Benzo(a)pyrene, ug/kg dw	<420	<430	<370	<430	<370
Benzo(g,h,i)perylene, ug/kg dw	<420	<430	<370	<430	<370
Benzo(b,k)fluoranthene, ug/kg dw	<420	<430	<370	<430	<370
Chrysene + Benzo(a)anthracene, ug/kg dw	<420	<430	<370	<430	<370
Fluoranthene, ug/kg dw	<420	<430	<370	<430	<370
Fluorene, ug/kg dw	<420	<430	<370	<430	<370
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<420	<430	<370	<430	<370
Naphthalene, ug/kg dw	<420	<430	<370	<430	<370
Phenanthrene + Anthracene, ug/kg dw	<420	<430	<370	<430	<370
Pyrene, ug/kg dw	<420	<430	<370	<430	<370
1-Methylnaphthalene, ug/kg dw	<420	<430	<370	<430	<370
2-Methylnaphthalene, ug/kg dw	<420	<430	<370	<430	<370
Surrogate - 2-Fluorobiphenyl	42 %	46 %	45 %	62 %	33 %
Batch ID	0512U	0512U	0512U	0512U	0512U
PF Code	T	T	T	T	T

↑ DUPLICATE

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

2846 Industrial Plaza Drive (32301) • P.O. Box 13056 • Tallahassee, FL 32317-3056 • (904) 878-3994 • Fax (904) 878-9504

LOG NO: T7-21284
Received: 08 MAY 97
Reported: 30 MAY 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Project: HAA60/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 10467063

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
21284-26	WB2902*CS*MW29 (13-15')	Pumphouse #2	05-08-97/1414	HAA60
21284-27	WB6101*CS*MW29 (13-15')	Pumphouse #2	05-08-97/1414	HAA60
21284-28	WB2801*CS*MW28 (8-10')	Pumphouse #2	05-08-97/1518	HAA60
21284-29	WB2802*CS*MW28 (13-15')	Pumphouse #2	05-08-97/1528	HAA60
21284-30	SB3501*CS*SB35 (4-6')	Pumphouse #1	05-08-97/1740	HAA60

PARAMETER	21284-26	21284-27	21284-28	21284-29	21284-30
Preparation Date	05.12.97	05.12.97	05.12.97	05.12.97	05.12.97
Preparation Time	2100	2100	2100	2100	2100
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Analyzed	05.20.97	05.20.97	05.18.97	05.18.97	05.18.97
Analysis Time	0249	0336	2310	2137	2223
RES Code	PP01	PD11	PP01	PP01	PP01
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	<13	<13	<11	<13	<11
Surrogate - o-Terphenyl	61 %	62 %	63 %	72 %	53 %
Batch ID	0512U	0512U	0512U	0512U	0512U
PF Code	T	T	T	T	T
Preparation Date	05.12.97	05.12.97	05.12.97	05.12.97	05.12.97
Preparation Time	2100	2100	2100	2100	2100
Initial Volume/Weight	30g	30g	30g	30g	30g
Final Extraction Volume (FV1)	1.0ml	1.0ml	1.0ml	1.0ml	1.0ml
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Analyzed	05.20.97	05.20.97	05.18.97	05.18.97	05.18.97
Analysis Time	0249	0336	2310	2137	2223
RES Code	PP01	PD11	PP01	PP01	PP01
Percent Solids, %	79 %	77 %	90 %	77 %	89 %

4
DUPLICATE

Metcalf & Eddy

CHAIN - OF - CUSTODY - RECORD

PROJECT NAME: Hunter IV

PROJECT NO: 019457-4102

LABORATORY ID: SLS

SAMPLER(S) NAME: Daniel Howard

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: Daniel Howard

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES. CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F) FIELD
5/7/97	1715	S	SB4501	SB45	PP01	4/6	2	N	—
	1720	S	SB4502	SB45	PP01	8/10	2	N	—
	1745	S	SB4401	SB44	PP01	8/10	2	N	—
	1750	S	SB4402	SB44	PP01	10/12	2	N	—
5/8/97	1100	S	SB4301	SB43	PP01	4/6	2	N	—
	1110	S	SB4302	SB43	PP01	10/12	2	N	—
	1140	S	SB4201	SB42	PP01	4/6	2	N	—
	1150	S	SB4202	SB42	PP01	8/10	2	N	—
*	1405	S	SB4101	SB41	PP01	4/6	2	N	—
	1415	S	SB4102	SB41	PP01	10/12	2	N	—
	1450	S	SB4001	SB40	PP01	4/6	2	N	—
	~~1455~~ 1455	S	SB4002	SB40	PP01	8/10	2	N	—

ANALYTICAL PARAMETERS/METHODS

Method No.

VOCs	SVOC PAH	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO	GRO
8020	8100					8100m	8015m
X	X					X	X
X	X					X	X
X	X					X	X
X	X					X	X
X	X					X	X
X	X					X	X
X	X					X	X
X	X					X	X
X	X					X	X
X	X					X	X
X	X					X	X
X	X					X	X

Relinquished by: (Signature) Daniel L Howard Date/Time: 5/8/97/1825

Received by: Bob Daly T72.1284 ~~S/N 3605~~ Date/Time: 5/8/97 1825

Cooler Temperature: 1.8

Remarks: * Use sample SB4101 as MS/MSD also

RELINQUISHED By: (Signature) [illegible] DATE: 5-13-97 TIME: 3:30

RECEIVED By: (Signature) [illegible] 5/14/97 TIME: 10900

Hand Delivered by M+E

TRACKING NO:

Send Results to:
Christine Hottinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____
STORED/SHIPPED IN ICE (Y) N

CHAIN - OF - CUSTODY - RECORD

M&E Metcalf & Eddy

PROJECT NAME: Hunter IV
PROJECT NO: 019457-4102
LABORATORY ID: SLS
SAMPLER(S) NAME: Daniel Howard

TASK ORDER NO.
SAMPLE EVENT:
PROGRAM TYPE:
SAMPLER(S) SIGNATURE: Daniel Howard

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F) FIELD
5/8/97	1450	S	SB10301	SB40	PP01	4/6	2	N	—
	1530	S	SB3901	SB39	PP01	4/6	2	N	—
	1540	S	SB3902	SB39	PP01	8/10	2	N	—
	1615	S	SB3701	SB37	PP01	4/6	2	N	—
	1625	S	SB3702	SB37	PP01	10/12	2	N	—
	1700	S	SB3601	SB36	PP01	4/6	2	N	—
	1715	S	SB3602	SB36	PP01	10/12	2	N	—
	1715	S	SB10201	SB36	~~PP01~~ PP03	10/12	2	N	—
	—	W	TEMP	Blank			1		

ANALYTICAL PARAMETERS/METHODS

Method No.	VOCs 8020	SVOC PAH 8100	Metals ICP Hg CVAA GFAA	Herbicides	Pesticides	PCB	TPH/DRO 8198M	GRO 8015M
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X

Relinquished By: (Signature) Daniel L. Howard — Date/Time: 5/8/97/1825 — Received by: Bob Daly (MS) — Date/Time: 5/8/97 1825 — Cooler Temperature: 1.8

Remarks:

RELINQUISHED By: (Signature) M. Howard — DATE 5/13/97 — TIME 330 — AIRBILL CO: Hand Delivered by M&E — TRACKING NO:

RECEIVED By: (Signature) W Basnight — DATE 5/14/97 — TIME 0700

Send Results to:
Christine Hollinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____
STORED/SHIPPED IN ICE (Y/N)

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter IV
TASK ORDER NO.
PROJECT NO: 019457-4102
SAMPLE EVENT:
LABORATORY ID: SLS
PROGRAM TYPE:
SAMPLER(S) NAME: Daniel Howard
SAMPLER(S) SIGNATURE: Daniel Howard

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F) FIELD
5/8/97	0907	S	WB2501	MW25	PP01	2/4	2	N	—
	0924	S	WB2502	MW25	PP01	8/10	2	N	—
	1038	S	WB2601	MW26	PP01	4/6	2	N	—
	1047	S	WB2602	MW26	PP01	8/10	2	N	—
	1406	S	WB2901	MW29	PP01	8/10	2	N	—
	1414	S	WB2902	MW29	PP01	13/15	2	N	—
	1414	S	WB6101	MW29	PD1	13/15	2	N	—
*	1518	S	WB2801	MW28	PP01	8/10	2	N	—
	1528	S	WB2802	MW28	PP01	13/15	2	N	—
	1740	S	SB3501	~~MW~~ DH SB35	PP01	4/6	2	N	—
	1750	S	SB3502	SB35	PP01	10/12	2	N	—
↓	—	W	TEMP	Blank			1		

ANALYTICAL PARAMETERS/METHODS

Method No.	VOCs 8020	SVOC PAH 8100	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO 8100M	GRO 8015M
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X

Relinquished by: (Signature) Daniel Howard — Date/Time: 5/8/97/1825
Received by: Bob Daly (M2) — Date/Time: ~~5-9-97~~ T 72.1284 5/8/97 1825
Cooler Temperature: 1.3

Remarks: * Use sample WB2801 as MS/MSD also

Relinquished By: (Signature) M. Hamill — DATE 5.13.97 AIRBILL
Received By: (Signature) — Received for Laboratory By:

TRACKING NO:

Send Results to:
Christine Lettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____
STORED/SHIPPED IN ICE (Y)/N

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S7-72659
Received: 09 MAY 97
Reported: 29 MAY 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA61/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 175570529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
72659-1	WB2701*CS*MW27 (8-10')	05-09-97/0805	HAA61
72659-2	WB2702*CS*MW27 (13-15')	05-09-97/0815	HAA61
72659-3	WB3101*CS*MW31 (8-10')	05-09-97/0925	HAA61
72659-4	WB3102*CS*MW31 (13-15')	05-09-97/0932	HAA61
72659-5	WB3001*CS*MW30 (8-10')	05-09-97/1040	HAA61

Pump House #2

PARAMETER	72659-1	72659-2	72659-3	72659-4	72659-5
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<20J	<6.2	<5.3	<6.1	<5.7
Toluene, ug/kg dw	3500	15	<5.3	6.4	<5.7
Ethylbenzene, ug/kg dw	13000	8.4	<5.3	<6.1	<5.7
Xylenes, ug/kg dw	50000	17	<5.3	<6.1	<5.7
Methyl tert-butyl ether (MTBE), ug/kg dw	<2000J	<62	<53	<61	<57
Surrogate - F3-Toluene	138 %	72 %	75 %	67 %	76 %
PF Code	T	T	T	T	T
Dilution factor	80.0	1.0	1.0	1.0	1.0
Batch ID	0521A	0520D	0520D	0520D	0520D
Preparation Date	05.22.97	05.20.97	05.20.97	05.20.97	05.20.97
Preparation Time	0114	0857	1119	1206	1747
Analysis Time	0114	0857	1119	1206	1747
Date Analyzed	05.22.97	05.20.97	05.20.97	05.20.97	05.20.97
RES Code	PP01	PP01	PP01	PP01	PP01
Initial Volume/Weight	5.0	5.0	5.0	5.0	5.0
Final Extraction Volume (FV1)	10	5.0	5.0	5.0	5.0
Clock ID	1D0521	1A0519	1A0519	1A0519	1A0519

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LOG NO: S7-72659
Received: 09 MAY 97
Reported: 29 MAY 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA61/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 175570529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
72659-1	WB2701*CS*MW27 (8-10')	05-09-97/0805	HAA61
72659-2	WB2702*CS*MW27 (13-15')	05-09-97/0815	HAA61
72659-3	WB3101*CS*MW31 (8-10')	05-09-97/0925	HAA61
72659-4	WB3102*CS*MW31 (13-15')	05-09-97/0932	HAA61
72659-5	WB3001*CS*MW30 (8-10')	05-09-97/1040	HAA61

Pumphouse #2

PARAMETER	72659-1	72659-2	72659-3	72659-4	72659-5
Polynuclear Aromatic HC (8100)					
Acenaphthene, ug/kg dw	460	<410	<350	<400	<380
Acenaphthylene, ug/kg dw	<350	<410	<350	<400	<380
Benzo(a)pyrene, ug/kg dw	190J	<410	330J	<400	<380
Benzo(g,h,i)perylene, ug/kg dw	<350	<410	690	<400	<380
Benzo(b,k)fluoranthene, ug/kg dw	390	<410	190J	<400	<380
Chrysene + Benzo(a)anthracene, ug/kg dw	400	<410	160J	<400	120J
Fluoranthene, ug/kg dw	1600	<410	<350	<400	64J
Fluorene, ug/kg dw	290J	<410	<350	<400	<380
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<350	<410	890	<400	<380
Naphthalene, ug/kg dw	900	<410	<350	<400	<380
Phenanthrene + Anthracene, ug/kg dw	1400	<410	<350	<400	<380
Pyrene, ug/kg dw	1300	44J	50J	<400	<380
1-Methylnaphthalene, ug/kg dw	480	<410	<350	<400	<380
2-Methylnaphthalene, ug/kg dw	970	<410	<350	<400	<380
Surrogate - 2-Fluorobiphenyl	61 %	60 %	38 %	55 %	53 %

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LOG NO: S7-72659
Received: 09 MAY 97
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Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA61/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 175570529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
72659-1	WB2701*CS*MW27 (8-10')	05-09-97/0805	HAA61
72659-2	WB2702*CS*MW27 (13-15')	05-09-97/0815	HAA61
72659-3	WB3101*CS*MW31 (8-10')	05-09-97/0925	HAA61
72659-4	WB3102*CS*MW31 (13-15')	05-09-97/0932	HAA61
72659-5	WB3001*CS*MW30 (8-10')	05-09-97/1040	HAA61

Pumphouse #2

PARAMETER	72659-1	72659-2	72659-3	72659-4	72659-5
PF Code	T	T	T	T	T
Initial Volume/Weight	30.0	30.0	30.0	30.0	30.0
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	0514V	0514V	0514V	0514V	0514V
Preparation Date	05.14.97	05.14.97	05.14.97	05.14.97	05.14.97
Preparation Time	1800	1800	1800	1800	1800
Analysis Time	0015	2250	0141	2333	0058
Date Analyzed	05.21.97	05.20.97	05.21.97	05.20.97	05.21.97
RES Code	PP01	PP01	PP01	PP01	PP01
Instrument ID	SGPFID	SGPFID	SGPFID	SGPFID	SGPFID

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LOG NO: S7-72659
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Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA61/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 175570529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
72659-1	WB2701*CS*MW27 (8-10')	05-09-97/0805	HAA61
72659-2	WB2702*CS*MW27 (13-15')	05-09-97/0815	HAA61
72659-3	WB3101*CS*MW31 (8-10')	05-09-97/0925	HAA61
72659-4	WB3102*CS*MW31 (13-15')	05-09-97/0932	HAA61
72659-5	WB3001*CS*MW30 (8-10')	05-09-97/1040	HAA61

Pumphouse #2

PARAMETER	72659-1	72659-2	72659-3	72659-4	72659-5
Gasoline Range Organics (8015M)					
Hydrocarbons as GRO, mg/kg dw	710	<0.22	<0.19	<0.22	<0.20
Surrogate - a,a,a-Trifluorotoluene	254*F36	72 %	56 %	78 %	71 %
Preparation Date	05.22.97	05.20.97	05.20.97	05.20.97	05.20.97
Preparation Time	1014	0857	1119	1206	1747
Dilution factor	200.0	1.0	1.0	1.0	1.0
Date Analyzed	05.22.97	05.20.97	05.20.97	05.20.7	05.20.97
Batch ID	0521A	0520D	0520D	0520D	0520D
Clock ID	1D0521	1A0519	1A0519	1A0519	1A0519
PF Code	T	T	T	T	T
Initial Volume/Weight	5.0	5.0	5.0	5.0	5.0
Final Extraction Volume (FV1)	10	5.0	5.0	5.0	5.0
Analysis Time	1014	0857	1119	1206	1747
RES Code	PP01	PP01	PP01	PP01	PP01

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
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72659-2	WB2702*CS*MW27 (13-15')	05-09-97/0815	HAA61
72659-3	WB3101*CS*MW31 (8-10')	05-09-97/0925	HAA61
72659-4	WB3102*CS*MW31 (13-15')	05-09-97/0932	HAA61
72659-5	WB3001*CS*MW30 (8-10')	05-09-97/1040	HAA61

Pump House #2

PARAMETER	72659-1	72659-2	72659-3	72659-4	72659-5
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	54	<12	12	<12	<11
Surrogate - o-Terphenyl	97 %	89 %	84 %	91 %	88 %
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Extracted	05.14.97	05.14.97	05.14.97	05.14.97	05.14.97
Date Analyzed	05.22.97	05.21.97	05.20.97	05.22.97	05.22.97
Batch ID	0514V	0514V	0514V	0514V	0514V
Instrument ID	SGQFID	SGQFID	SGQFID	SGQFID	SGQFID
PF Code	T	T	T	T	T
Initial Volume/Weight	30.0	30.0	30.0	30.0	30.0
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Preparation Date	05.14.97	05.14.97	05.14.97	05.14.97	05.14.97
Preparation Time	1800	1800	1800	1800	1800
Analysis Time	0244	0756	2058	0127	0323
RES Code	PP01	PP01	PP01	PP01	PP01
Percent Solids (160.3), %	95	81	94	82	88

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Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA61/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 175570529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
72659-6	WB3002*CS*MW30 (13-15') } Pumphouse #2	05-09-97/1047	HAA61

PARAMETER	72659-6
Purgeable Aromatics (8020)	
Benzene, ug/kg dw	<6.1
Toluene, ug/kg dw	9.6
Ethylbenzene, ug/kg dw	<6.1
Xylenes, ug/kg dw	10
Methyl tert-butyl ether (MTBE), ug/kg dw	<61
Surrogate - F3-Toluene	78 %
PF Code	T
Dilution factor	1.0
Batch ID	0520D
Preparation Date	05.20.97
Preparation Time	1341
Analysis Time	1341
Date Analyzed	05.20.97
RES Code	PP01
Initial Volume/Weight	5.0
Final Extraction Volume (FV1)	5.0
Clock ID	1A0519

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Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA61/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 175570529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
72659-6	WB3002*CS*MW30 (13-15') } Pump House #2	05-09-97/1047	HAA61

PARAMETER	72659-6
Polynuclear Aromatic HC (8100)	
Acenaphthene, ug/kg dw	<400
Acenaphthylene, ug/kg dw	<400
Benzo(a)pyrene, ug/kg dw	<400
Benzo(g,h,i)perylene, ug/kg dw	<400
Benzo(b,k)fluoranthene, ug/kg dw	<400
Chrysene + Benzo(a)anthracene, ug/kg dw	<400
Fluoranthene, ug/kg dw	<400
Fluorene, ug/kg dw	<400
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<400
Naphthalene, ug/kg dw	<400
Phenanthrene + Anthracene, ug/kg dw	<400
Pyrene, ug/kg dw	<400
1-Methylnaphthalene, ug/kg dw	<400
2-Methylnaphthalene, ug/kg dw	<400
Surrogate - 2-Fluorobiphenyl	42 %
PF Code	T
Initial Volume/Weight	30.0
Final Extraction Volume (FV1)	1.0
Dilution factor	1.0
Batch ID	0514V
Preparation Date	05.14.97
Preparation Time	1800
Analysis Time	1555
Date Analyzed	05.21.97
RES Code	PP01
Instrument ID	SGPFID

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Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA61/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 175570529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
72659-6	WB3002*CS*MW30 (13-15') } Pump House #2	05-09-97/1047	HAA61

PARAMETER	72659-6
Gasoline Range Organics (8015M)	
Hydrocarbons as GRO, mg/kg dw	<0.22
Surrogate - a,a,a-Trifluorotoluene	100 %
Preparation Date	05.20.97
Preparation Time	1341
Dilution factor	1.0
Date Analyzed	05.20.97
Batch ID	0520D
Clock ID	1A0519
PF Code	T
Initial Volume/Weight	5.0
Final Extraction Volume (FV1)	5.0
Analysis Time	1341
RES Code	PP01

SL SAVANNAH LABORATORIES
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Project: HAA61/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 175570529

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
72659-6	WB3002*CS*MW30 (13-15') } Pumphouse #2	05-09-97/1047	HAA61

PARAMETER	72659-6
Diesel Range Organics (8100M)	
Hydrocarbons as DRO, mg/kg dw	<12
Surrogate - o-Terphenyl	94 %
Dilution factor	1.0
Date Extracted	05.14.97
Date Analyzed	05.22.97
Batch ID	0514V
Instrument ID	SGQFID
PF Code	T
Initial Volume/Weight	30.0
Final Extraction Volume (FV1)	1.0
Preparation Date	05.14.97
Preparation Time	1800
Analysis Time	0206
RES Code	PP01
Percent Solids (160.3), %	82

The flag 'J' indicates the presence of a compound that meets the identification criteria, but the result is less than the sample RL and greater than the MDL.

Methods: EPA SW-846
*F36 = Surrogate recovery was outside established limits due to coeluting matrix interference in the sample.

Lisa G. McLeod, Project Manager

Final Page Of Report

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter IV
PROJECT NO: 019457-4102
LABORATORY ID: SLS
SAMPLER(S) NAME: Daniel Howard

TASK ORDER NO.
SAMPLE EVENT:
PROGRAM TYPE:
SAMPLER(S) SIGNATURE: Daniel Howard

	DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F) FIELD
	5/9/97	0805	S	WB2701	MW27	PP01	8/10	2	N	—
		0815	S	WB2702	MW27	PP01	13/15	2	N	—
*		0925	S	WB3101	MW31	PP01	8/10	2	N	—
		0932	S	WB3102	MW31	PP01	13/15	2	N	—
		1040	S	WB3001	MW30	PP01	8/10	2	N	—
		1047	S	WB3002	MW30	PP01	13/15	2	N	—
	↓	—	W	TEMP	Blank			1		

ANALYTICAL PARAMETERS/METHODS

Method No.	VOCs 8020	SVOC PAH 8100	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO 8100M	GRO 8015M	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	
	X	X					X	X	

Relinquished by: (Signature) Daniel Howard Date/Time: 5/9/97/1307 Received by: M Lancomb Date/Time: 5.9.97 1:07

Cooler Temperature: 2.2

Remarks: *Use sample WB3101 as MS/MSD also SI-726051

AIRBILL CO. Hand Delivered by M+E

TRACKING NO:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER
STORED/SHIPPED IN ICE (Y)/N

SL **SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.**

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LOG NO: S7-72708
Received: 13 MAY 97
Reported: 09 JUN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA63/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 13297069

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
72708-21	WB6001*CS*MW23 (13-15')	Pumphouse #1	05-13-97/0824	HAA63
72708-22	WB2001*CS*MW20 (4-6')		05-13-97/0916	HAA63
72708-23	WB2002*CS*MW20 (8-10')		05-13-97/0925	HAA63
72708-24	WB3201*CS*MW32 (4-6')	Pumphouse #2	05-13-97/1240	HAA63
72708-25	WB3202*CS*MW32 (8-10')		05-13-97/1252	HAA63

PARAMETER	72708-21	72708-22	72708-23	72708-24	72708-25
Purgeable Aromatics (8020)					
Benzene, ug/kg dw	<6.0	<5.8	<5.6	<5.2	<6.0
Toluene, ug/kg dw	<6.0	<5.8	<5.6	<5.2	<6.0
Ethylbenzene, ug/kg dw	<6.0	<5.8	<5.6	<5.2	<6.0
Xylenes, ug/kg dw	<6.0	<5.8	<5.6	<5.2	<6.0
Methyl tert-butyl ether (MTBE), ug/kg dw	<60	<58	<56	<52	<60
Surrogate - F3-Toluene	67 %	88 %	71 %	69 %	72 %
PF Code	T	T	T	T	T
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	0520D	0520D	0520D	0520D	0520D
Preparation Date	05.23.97	05.23.97	05.23.97	05.23.97	05.23.97
Preparation Time	0034	1805	0558	0638	0155
Analysis Time	0034	1805	0558	0638	0155
Date Analyzed	05.23.97	05.23.97	05.23.97	05.23.97	05.23.97
RES Code	PD31	PP01	PP01	PP01	PP01
Initial Volume/Weight	5.0	5.0	5.0	5.0	5.0
Final Extraction Volume (FV1)	5.0	5.0	5.0	5.0	5.0
Clock ID	2A0522	1A0523	2A0522	2A0522	2A0522

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LOG NO: S7-72708
Received: 13 MAY 97
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1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA63/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 13297069

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
72708-21	WB6001*CS*MW23 (13-15')	Pump House #1	05-13-97/0824	HAA63
72708-22	WB2001*CS*MW20 (4-6')		05-13-97/0916	HAA63
72708-23	WB2002*CS*MW20 (8-10')		05-13-97/0925	HAA63
72708-24	WB3201*CS*MW32 (4-6')	Pump House #2	05-13-97/1240	HAA63
72708-25	WB3202*CS*MW32 (8-10')		05-13-97/1252	HAA63

PARAMETER	72708-21	72708-22	72708-23	72708-24	72708-25
Polynuclear Aromatic HC (8100)					
Acenaphthene, ug/kg dw	<400	<380	<370	<340	<390
Acenaphthylene, ug/kg dw	<400	<380	<370	<340	<390
Benzo(a)pyrene, ug/kg dw	<400	<380	<370	<340	<390
Benzo(g,h,i)perylene, ug/kg dw	<400	<380	<370	<340	<390
Benzo(b,k)fluoranthene, ug/kg dw	<400	<380	<370	<340	<390
Chrysene + Benzo(a)anthracene, ug/kg dw	<400	<380	<370	<340	<390
Fluoranthene, ug/kg dw	<400	<380	<370	<340	<390
Fluorene, ug/kg dw	<400	<380	<370	<340	79JX
Indeno(1,2,3-cd)pyrene+Dibenzo(a,h)anthracene, ug/kg dw	<400	<380	<370	<340	<390
Naphthalene, ug/kg dw	<400	<380	<370	<340	<390
Phenanthrene + Anthracene, ug/kg dw	<400	<380	<370	<340	<390
Pyrene, ug/kg dw	<400	<380	<370	<340	<390
1-Methylnaphthalene, ug/kg dw	<400	18J	<370	<340	37JX
2-Methylnaphthalene, ug/kg dw	<400	<380	<370	<340	620
Surrogate - 2-Fluorobiphenyl	75 %	63 %	89 %	76 %	140 %

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Sampled By: Client
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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
72708-21	WB6001*CS*MW23 (13-15')	Pump House #1	05-13-97/0824	HAA63
72708-22	WB2001*CS*MW20 (4-6')		05-13-97/0916	HAA63
72708-23	WB2002*CS*MW20 (8-10')		05-13-97/0925	HAA63
72708-24	WB3201*CS*MW32 (4-6')	Pump House #1	05-13-97/1240	HAA63
72708-25	WB3202*CS*MW32 (8-10')		05-13-97/1252	HAA63

PARAMETER	72708-21	72708-22	72708-23	72708-24	72708-25
PF Code	T	T	T	T	T
Initial Volume/Weight	30.0	30.0	30.0	30.0	30.0
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	0515V	0515V	0515V	0515V	0515V
Preparation Date	05.15.97	05.15.97	05.15.97	05.15.97	05.15.97
Preparation Time	1830	1830	1830	1830	1830
Analysis Time	0407	0450	0532	0657	0615
Date Analyzed	05.28.97	05.28.97	05.28.97	05.28.97	05.28.97
RES Code	PD11	PP01	PP01	PP01	PP01
Instrument ID	SGPFID	SGPFID	SGPFID	SGPFID	SGPFID

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S7-72708
Received: 13 MAY 97
Reported: 09 JUN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA63/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 13297069

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
72708-21	WB6001*CS*MW23 (13-15')	Pump House #1	05-13-97/0824	HAA63
72708-22	WB2001*CS*MW20 (4-6')		05-13-97/0916	HAA63
72708-23	WB2002*CS*MW20 (8-10')		05-13-97/0925	HAA63
72708-24	WB3201*CS*MW32 (4-6')	Pump House #2	05-13-97/1240	HAA63
72708-25	WB3202*CS*MW32 (8-10')		05-13-97/1252	HAA63

PARAMETER	72708-21	72708-22	72708-23	72708-24	72708-25
Gasoline Range Organics (8015M)					
Hydrocarbons as GRO, mg/kg dw	<0.22	<0.21	<0.20	<0.19	<0.21
Surrogate - a,a,a-Trifluorotoluene	94 %	71 %	70 %	88 %	78 %
Preparation Date	05.23.97	05.23.97	05.23.97	05.23.97	05.23.97
Preparation Time	0034	1805	0558	0638	0155
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Analyzed	05.23.97	05.23.97	05.23.97	05.23.97	05.23.97
Batch ID	0520D	0520D	0520D	0520D	0520D
Clock ID	2A0522	1A0523	2A0522	2A0522	2A0522
PF Code	T	T	T	T	T
Initial Volume/Weight	5.0	5.0	5.0	5.0	5.0
Final Extraction Volume (FV1)	5.0	5.0	5.0	5.0	5.0
Analysis Time	0034	1805	0558	0638	0155
RES Code	PD31	PP01	PP01	PP01	PP01

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Client PO. No.: 91032

Project: HAA63/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 13297069

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
72708-21	WB6001*CS*MW23 (13-15')	Pump House #1	05-13-97/0824	HAA63
72708-22	WB2001*CS*MW20 (4-6')		05-13-97/0916	HAA63
72708-23	WB2002*CS*MW20 (8-10')		05-13-97/0925	HAA63
72708-24	WB3201*CS*MW32 (4-6')	Pump House #2	05-13-97/1240	HAA63
72708-25	WB3202*CS*MW32 (8-10')		05-13-97/1252	HAA63

PARAMETER	72708-21	72708-22	72708-23	72708-24	72708-25
Diesel Range Organics (8100M)					
Hydrocarbons as DRO, mg/kg dw	<12	<12	<11	<10	12
Surrogate - o-Terphenyl	70 %	55 %	77 %	70 %	70 %
Dilution factor	1.0	1.0	1.0	1.0	1.0
Date Extracted	05.15.97	05.15.97	05.15.97	05.15.97	05.15.97
Date Analyzed	05.22.97	05.22.97	05.22.97	05.22.97	05.22.97
Batch ID	0515V	0515V	0515V	0515V	0515V
Instrument ID	SGQFID	SGQFID	SGQFID	SGQFID	SGQFID
PF Code	T	T	T	T	T
Initial Volume/Weight	30.0	30.0	30.0	30.0	30.0
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Preparation Date	05.15.97	05.15.97	05.15.97	05.15.97	05.15.97
Preparation Time	1830	1830	1830	1830	1830
Analysis Time	1153	1428	1232	1311	1349
RES Code	PD11	PP01	PP01	PP01	PP01
Percent Solids (160.3), %	83	86	90	96	84

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Client PO. No.: 91032

Project: HAA63/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 13297069

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
72708-21	WB6001*CS*MW23 (13-15')	Pump House #1	05-13-97/0824	HAA63
72708-22	WB2001*CS*MW20 (4-6')		05-13-97/0916	HAA63
72708-23	WB2002*CS*MW20 (8-10')		05-13-97/0925	HAA63
72708-24	WB3201*CS*MW32 (4-6')	Pump House #2	05-13-97/1240	HAA63
72708-25	WB3202*CS*MW32 (8-10')		05-13-97/1252	HAA63

PARAMETER	72708-21	72708-22	72708-23	72708-24	72708-25

The flag 'J' indicates the presence of a compound that meets the identification criteria, but the result is less than the sample RL and greater than the MDL.

Methods: EPA SW-846
*F33 = Control limits are established only for surrogate concentration levels specified by EPA methods. Because the sample was diluted prior to analysis, surrogate recoveries are not reported.

*F36 = Surrogate recovery was outside established limits due to coeluting matrix interference in the sample.

Lisa G. McLeod, Project Manager

Final Page Of Report

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter IV

PROJECT NO: 019457-4102

LABORATORY ID: SLS

SAMPLER(S) NAME: Daniel Howard

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: Daniel Howard

	DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F) FIELD	ANALYTICAL PARAMETERS/METHODS: VOCS 8020	SVOC PAH 8100	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO 8100M	GRO 8015M
	5/13/97	0800	S	SB3801	SB38	PP01	4/6	2	N	—	X	X					X	X
		0810	S	SB3802	SB38	PP01	8/10	2	N	—	X	X					X	X
*		0840	S	SB3101	SB31	PP01	4/6	2	N	—	X	X					X	X
		0850	S	SB3102	SB31	PP01	8/10	2	N	—	X	X					X	X
		0925	S	SB3001	SB30	PP01	4/6	2	N	—	X	X					X	X
		0935	S	SB3002	SB30	PP01	8/10	2	N	—	X	X					X	X
		0935	S	SB1010	SB30	PD1	8/10	2	N	—	X	X					X	X
		1005	S	SB2901	SB29	PP01	4/6	2	N	—	X	X					X	X
		1015	S	SB2902	SB29	PP01	8/10	2	N	—	X	X					X	X
		1050	S	SB2801	SB28	PP01	4/6	2	N	—	X	X					X	X
		1105	S	SB2802	SB28	PP01	8/10	2	N	—	X	X					X	X
	↓	1305	S	SB2701	SB27	PP01	2/4	2	N	—	X	X					X	X

Method No.

Relinquished by: (Signature) Daniel Howard Date/Time: 5/13/97/1807

Received by: Cooler A 57-72708 Date/Time: 5/13/97/16:07

Cooler Temperature: 4.2°C

Remarks: * Use sample SB3101 as MS/MSD also

AIRBILL CO. Hand Delivered by M+E

TRACKING NO:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):

(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____

STORED/SHIPPED IN ICE (Y)/N

Metcalf & Eddy

CHAIN - OF - CUSTODY - RECORD

PROJECT NAME: Hunter IV

PROJECT NO: 019457-4102

LABORATORY ID: SLS

SAMPLER(S) NAME: Daniel Howard

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: Daniel Howard

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	REC CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F) FIELD
5/13/97	1320	S	SB 2702	SB27	PP01	8/10	2	N	—
	1320	S	SB 10001	SB27	PD2	8/10	2	N	—
	1400	S	SB 2601	SB26	PP01	4/6	2	N	—
	1405	S	SB 2602	SB26	PP01	8/10	2	N	—
	1500	S	SB 2501	SB25	PP01	4/6	2	N	—
	1510	S	SB 2502	SB25	PP01	8/10	2	N	—
↓	—	W	TEMP	Blank			1		

ANALYTICAL PARAMETERS/METHODS

Method No.	VOCS 8020	SVOC PAH 8100	METALS ICP Hg CVAA GFAA 8010	HERBICIDES 8150	PESTICIDES 8080	PCB 8080	TPH/DRO 8100M	GRO 8015M
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X
	X	X					X	X

Relinquished by: (Signature) Daniel Howard

Date/Time: 5/13/97/1807

Received by: Cook, A 57-72708

Date/Time: 5/13/97/16:07

Cooler Temperature: 4.2°C

Remarks:

AIRBILL CO. Hand Delivered by M+E

TRACKING NO:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):

(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER

STORED/SHIPPED IN ICE (Y) N

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter IV

PROJECT NO: 019457-4102

LABORATORY ID: SLS

SAMPLER(S) NAME: Daniel Howard

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: Daniel Howard

ANALYTICAL PARAMETERS/METHODS

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)	FILTERED (L) LAB (F) FIELD	VOCs 8020	SVOC PAH 8100	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO 8100M	GRO 8015M
5/13/97	0812	S	WB2301	DR MW23	PP01	8/10	2	N	—	X	X					X	X
	0824	S	WB2302	MW23	PP01	13/15	2	N	—	X	X					X	X
	0824	S	WB6001	MW23	PD1	13/15	2	N	—	X	X					X	X
	0916	S	WB2001	MW20	PP01	4/6	2	N	—	X	X					X	X
	0925	S	WB2002	MW20	PP01	8/10	2	N	—	X	X					X	X
*	dff 1240	S	WB3201	MW32	PP01	4/6	2	N	—	X	X					X	X
	1252	S	WB3202	MW32	PP01	8/10	2	N	—	X	X					X	X
↓	—	W	TEMP	Blank			1										

Relinquished by: (Signature) Daniel Howard Date/Time: 5/13/97/1808 Received by: [signature] cooler B Date/Time: 5/13/97/6:08

Cooler Temperature: 2.0°C

Remarks: * Use sample WB3201 as MS/MSD also

AIRBILL CO. Hand Delivered by M+E

TRACKING NO:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):

(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____

STORED/SHIPPED IN ICE (Y)/N

SL ***SAVANNAH LABORATORIES***
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S7-72708A
Received: 16 MAY 97
Reported: 05 JUN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA64/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 13397066

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
72708A-1	WB3501*CS*MW35 (4-6')	05-07-97/1340	HAA64
72708A-2	WB3402*CS*MW34 (8-10')	05-07-97/1050	HAA64
72708A-3	SB6402*CS*SB64 (6-8')	05-06-97/1620	HAA64
72708A-4	SB4301*CS*SB43 (4-6') } Pump House #2	05-08-97/1100	HAA64
72708A-5	WB2702*CS*MW27 (13-15')	05-09-97/0815	HAA64

PARAMETER	72708A-1	72708A-2	72708A-3	72708A-4	72708A-5
Lead (6010)					
Lead (6010), mg/kg dw	6.1	15	3.2	3.2	81
PF Code	T	T	T	T	T
Initial Volume/Weight	1.00	1.00	1.00	1.00	1.00
Final Extraction Volume (FV1)	100	100	100	100	100
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	0521B	0521B	0521B	0521B	0521B
Preparation Date	05.21.97	05.21.97	05.21.97	05.21.97	05.21.97
Preparation Time	1140	1140	1140	1140	1140
Analysis Time	1916	1920	1923	1927	1931
Date Analyzed	05.22.97	05.22.97	05.22.97	05.22.97	05.22.97
RES Code	PP01	PP01	PP01	PP01	PP01

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Project: HAA64/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 13397066

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
72708A-1	WB3501*CS*MW35 (4-6')	05-07-97/1340	HAA64
72708A-2	WB3402*CS*MW34 (8-10')	05-07-97/1050	HAA64
72708A-3	SB6402*CS*SB64 (6-8')	05-06-97/1620	HAA64
72708A-4	SB4301*CS*SB43 (4-6') } Pump House #2	05-08-97/1100	HAA64
72708A-5	WB2702*CS*MW27 (13-15')	05-09-97/0815	HAA64

PARAMETER	72708A-1	72708A-2	72708A-3	72708A-4	72708A-5
Total Organic Carbon (9060)					
Total Organic Carbon (9060), mg/kg dw	26000	15000	410	540	43000
PF Code	T	T	T	T	T
Initial Volume/Weight	1.0	1.0	1.0	1.0	1.0
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	0522X	0522X	0522X	0522X	0522X
Preparation Date	05.22.97	05.22.97	05.22.97	05.22.97	05.22.97
Preparation Time	0900	0900	0900	0900	0900
Date Analyzed	05.22.97	05.22.97	05.22.97	05.22.97	05.22.97
Analysis Time	1617	1608	1324	1304	1626
RES Code	PP01	PP01	PP01	PP01	PP01
Percent Solids (160.3), %	87	88	82	97	81

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Received: 16 MAY 97
Reported: 05 JUN 97

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Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA64/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 13397066

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
72708A-6	SB5401*CS*SB54 (4-6')	Pump House #2	05-07-97/0800	HAA64
72708A-7	WB3202*CS*MW32 (8-10')		05-13-97/1252	HAA64
72708A-8	WB1301*CS*MW13 (8-10')	Pump House #1	05-12-97/1630	HAA64
72708A-9	WB1502*CS*MW15 (8-10')		05-12-97/0952	HAA64
72708A-10	SB3102*CS*SB31 (8-10')		05-13-97/0850	HAA64

PARAMETER	72708A-6	72708A-7	72708A-8	72708A-9	72708A-10
Lead (6010)					
Lead (6010), mg/kg dw	4.0	5.2	18	4.5	8.6
PF Code	T	T	T	T	T
Initial Volume/Weight	1.00	1.00	1.00	1.00	1.00
Final Extraction Volume (FV1)	100	100	100	100	100
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	0521B	0521B	0521B	0521B	0521B
Preparation Date	05.21.97	05.21.97	05.21.97	05.21.97	05.21.97
Preparation Time	1140	1140	1140	1140	1140
Analysis Time	1937	2009	2013	2017	2020
Date Analyzed	05.22.97	05.22.97	05.22.97	05.22.97	05.22.97
RES Code	PP01	PP01	PP01	PP01	PP01

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Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA64/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 13397066

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES		DATE/ TIME SAMPLED	SDG#
72708A-6	SB5401*CS*SB54 (4-6')	Pumphouse #2	05-07-97/0800	HAA64
72708A-7	WB3202*CS*MW32 (8-10')	Pumphouse #2	05-13-97/1252	HAA64
72708A-8	WB1301*CS*MW13 (8-10')	Pumphouse #1	05-12-97/1630	HAA64
72708A-9	WB1502*CS*MW15 (8-10')	Pumphouse #1	05-12-97/0952	HAA64
72708A-10	SB3102*CS*SB31 (8-10')	Pumphouse #1	05-13-97/0850	HAA64

PARAMETER	72708A-6	72708A-7	72708A-8	72708A-9	72708A-10
Total Organic Carbon (9060)					
Total Organic Carbon (9060), mg/kg dw	850	2600	740	3700	8800
PF Code	T	T	T	T	T
Initial Volume/Weight	1.0	1.0	1.0	1.0	1.0
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	0522X	0522X	0522X	0522X	0522X
Preparation Date	05.22.97	05.22.97	05.22.97	05.22.97	05.22.97
Preparation Time	0900	0900	0900	0900	0900
Date Analyzed	05.22.97	05.22.97	05.22.97	05.22.97	05.22.97
Analysis Time	1416	1529	1255	1539	1552
RES Code	PP01	PP01	PP01	PP01	PP01
Percent Solids (160.3), %	93	87	88	81	86

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter IV

TASK ORDER NO. 725

PROJECT NO: 019457-4102

SAMPLE EVENT:

LABORATORY ID: SLS

PROGRAM TYPE:

SAMPLER(S) NAME: Daniel Howard

SAMPLER(S) SIGNATURE: Daniel Howard

DATE	TIME	MATRIX	SAMPLE NO.	LOCATION	SAMPLE TYPE	DEPTH	Method No.	VOCS	SVOC	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO	GRO	TCO
										Lead 6010 Trace						9060
5/7/97	1340	S	WB3501	MW35 72586	PP01	4/6	59	N	—							
5/7/97	1050	S	WB3402	MW34 72586	PP01	8/10	59	N	—	X						X
5/6/97	1620	S	SB6402	SB64 72546	PP01	6/8	58	N	—	X						X
5/8/97	1100	S	SB4301	SB43 72625	PP01	4/6	60	N	—	X						X
5/9/97	0815	S	WB2702	MW27	PP01	13/15	61	N	—	X						X
5/7/97	0800	S	SB5401	SB54	PP01	4/6	59	N	—	X						X
~~5/13/97~~	~~1252~~	~~S~~	~~WB3202~~	~~MW32~~	~~PP01~~	~~8/10~~	~~?63~~	~~N~~	~~—~~	~~X~~						~~X~~
5/12/97	1630	S	WB1301	MW13	PP01	8/10	62	N	—	X						X
5/12/97	0952	S	WB1502	MW15	PP01	8/10	62	N	—	X						X
5/13/97	0850	S	SB3102	SB31	PP01	~~13~~ 10/15	?63	N	—	X						X
5/5/97	1315	S	WB1902	MW19	PP01	13/15	57	N	—	X						X
5/13/97	1305	S	SB2701	SB27	PP01	2/4	?63	N	—	X						X

ANALYTICAL PARAMETERS/METHODS

Relinquished by: (Signature) Daniel K Howard Date/Time: 5/16/97/1500

Received by: Date/Time: Cooler Temperature:

Remarks: The 10+ TOC & Lead are requested for the above samples

* Use sample SB5401 as MS/MSD also

S7-72708 A

AIRBILL CO.

TRACKING NO:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____
STORED/SHIPPED IN ICE (Y) N

MAY 16 '97 15:15

Savannah Laboratories
5102 LaRoche Avenue · Savannah, GA 31404 · (912) 354-7858 · Fax (912) 352-0165 · www.stlsavlab.com

LOG NO: S9-16522
Received: 01 OCT 99
Reported: 27 OCT 99

Ms. Christine Hettinger
Metcalf & Eddy
Two Sun Court, Suite 200
Norcross, GA 30092

Client PO. No.: 207159

Contract No.: 94-016159-001
Project: HAA71/019457-4113/HUNTER 4 PUMPHOUSES #1 & 2/TO#027//
Sampled By: Client
Code: 120491117

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
16522-1	PH2-WB4101*CS** } PumpHouse #2	09-30-99	HAA71
16522-1-DL	PH2-WB4101*CS**	09-30-99	HAA71
16522-2	PH2-WB4202*CS**	09-30-99	HAA71

PARAMETER	16522-1	16522-1-DL	16522-2
Halogenated and Aromatic Volatiles (8021)			
Benzene, ug/kg dw	6.2U	250U	6.4U
Toluene, ug/kg dw	1400E	250U	6.4U
Ethylbenzene, ug/kg dw	480E	250U	6.4U
Total Xylenes, ug/kg dw	1200E	1100D	13U
Methyl tert-butyl ether (MTBE), ug/kg dw	62U	2500U	64U
Surrogate - a,a,a-Trifluorotoluene	*F36	97 %	84 %
Date Analyzed	10.07.99	10.08.99	10.07.99
Dilution factor	1.0	40.0	1.0
Batch ID	2A1006	1D1008	2A1006
Clock ID	2A1006	1D1008	2A1006
PF Code	T	T	T
Initial Volume/Weight	5.0	10	5.1
Final Extraction Volume (FV1)	5.0	10	5.0
Analysis Time	0732	1715	0649
RES Code	PP01	PP01	PP01
Dilution Factor	1.0	1.0	1.0
Analysis Date	10.07.99	10.08.99	10.07.99
Analysis Time	0732	1715	0649
Batch ID	2A1006	1D1008	2A1006

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Sampled By: Client
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REPORT OF RESULTS

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16522-1-DL	PH2-WB4101*CS**	09-30-99	HAA71
16522-2	PH2-WB4202*CS**	09-30-99	HAA71

PARAMETER	16522-1	16522-1-DL	16522-2
Gasoline Range Organics (8015M)			
Hydrocarbons as GRO, mg/kg dw	19E	36D	0.32U
Surrogate - a,a,a-Trifluorotoluene	*F36	147 %	58 %
Preparation Date	10.07.99	10.08.99	10.07.99
Preparation Time	0732	1715	0649
Dilution factor	1.0	40.0	1.0
Date Analyzed	10.07.99	10.08.99	10.07.99
Batch ID	2A1006	1D1008	2A1006
Clock ID	2A1006	1D1008	2A1006
PF Code	T	T	T
Initial Volume/Weight	5.0	10	5.0
Final Extraction Volume (FV1)	5.0	10	5.0
Analysis Time	0732	1715	0649
RES Code	PP01	PP02	PP01
Dilution Factor	1.0	1.0	1.0
Analysis Date	10.07.99	10.08.99	10.07.99
Analysis Time	0732	1715	0649
Batch ID	2A1006	1D1008	2A1006

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Contract No.: 94-016159-001
Project: HAA71/019457-4113/HUNTER 4 PUMPHOUSES #1 & 2/TO#027//
Sampled By: Client
Code: 120491117

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
16522-1	PH2-WB4101*CS** } Pump House #2	09-30-99	HAA71
16522-1-DL	PH2-WB4101*CS**	09-30-99	HAA71
16522-2	PH2-WB4202*CS**	09-30-99	HAA71

PARAMETER	16522-1	16522-1-DL	16522-2
Polynuclear Aromatic HC (8310)			
Acenaphthene, ug/kg dw	89P	620U	65U
Acenaphthylene, ug/kg dw	25U	250U	26U
Benzo(a)pyrene, ug/kg dw	170	190D	5.2U
Benzo(g,h,i)perylene, ug/kg dw	230P	190DP	13U
Benzo(b)fluoranthene, ug/kg dw	240E	280D	5.2U
Benzo(k)fluoranthene, ug/kg dw	120	130D	5.2U
Chrysene, ug/kg dw	350E	380D	5.2U
Benzo(a)anthracene, ug/kg dw	320E	360D	5.2U
Fluoranthene, ug/kg dw	1100E	1300D	13U
Fluorene, ug/kg dw	100	120U	13U
Indeno(1,2,3-cd)pyrene, ug/kg dw	81P	120U	13U
Dibenzo(a,h)anthracene, ug/kg dw	190	230D	13U
Naphthalene, ug/kg dw	25U	250U	26U
Phenanthrene, ug/kg dw	780E	1000D	5.2U
Anthracene, ug/kg dw	200	250D	5.2U
Pyrene, ug/kg dw	1100E	1300D	13U
1-Methylnaphthalene, ug/kg dw	25U	250U	26U
2-Methylnaphthalene, ug/kg dw	90	250U	26U
Surrogate - Terphenyl-d14	*F36	*F36	50 %
PF Code	T	T	T

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16522-1-DL	PH2-WB4101*CS**	09-30-99	HAA71
16522-2	PH2-WB4202*CS**	09-30-99	HAA71

PARAMETER	16522-1	16522-1-DL	16522-2
Initial Volume/Weight	30.1	30.1	30.0
Final Extraction Volume (FV1)	1.0	1.0	1.0
Dilution factor	1.0	10.0	1.0
Batch ID	1005J	1005J	1005J
Preparation Date	10.05.99	10.05.99	10.05.99
Preparation Time	1400	1400	1400
Analysis Time	0007	1714	0053
Date Analyzed	10.13.99	10.13.99	10.13.99
RES Code	PP01	PP02	PP01
Instrument ID	LCAUV	LCAUV	LCAUV
Dilution Factor	1.0	10.0	1.0
Analysis Date	10.13.99	10.13.99	10.13.99
Analysis Time	0007	1714	0053
Batch ID	1005J	1005J	1005J

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5102 LaRoche Avenue · Savannah, GA 31404 · (912) 354-7858 · Fax (912) 352-0165 · www.stlsavlab.com

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Metcalf & Eddy
Two Sun Court, Suite 200
Norcross, GA 30092

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Contract No.: 94-016159-001
Project: HAA71/019457-4113/HUNTER 4 PUMPHOUSES #1 & 2/TO#027//
Sampled By: Client
Code: 120491117

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED	SDG#
16522-1	PH2-WB4101*CS** } Pump House #2	09-30-99	HAA71
16522-1-DL	PH2-WB4101*CS**	09-30-99	HAA71
16522-2	PH2-WB4202*CS**	09-30-99	HAA71

PARAMETER	16522-1	16522-1-DL	16522-2
Diesel Range Organics (8100M)			
Hydrocarbons as DRO, mg/kg dw	18	---	4.3U
Surrogate - o-Terphenyl	66 %	---	58 %
Dilution factor	1.0	---	1.0
Date Extracted	10.07.99	---	10.07.99
Date Analyzed	10.08.99	---	10.08.99
Batch ID	1007U	---	1007U
Instrument ID	EXSFID	---	EXSFID
PF Code	T	---	T
Initial Volume/Weight	30.1	---	30.1
Final Extraction Volume (FV1)	1.0	---	1.0
Preparation Date	10.07.99	---	10.07.99
Preparation Time	1520	---	1520
Analysis Time	1118	---	1123
RES Code	PP01	---	PP01
Percent Solids (160.3), %	80		77

Methods: EPA SW-846, Update III.

*F36 = Surrogate recovery was outside established limits due to coeluting matrix interference in the sample.

Elizabeth F. Beauchamp, Project Manager

Final Page Of Report

CHAIN - OF - CUSTODY RECORD

Metcalf & Eddy

PROJECT NAME: Pump Houses #1 & #2

PROJECT NO: 019457 - 4114

LABORATORY ID: SAV. LABS

SAMPLER(S) NAME: G. Rowell

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: G. Rowell

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANRDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F)FIELD
9/30/99	~~0920~~	S	PH2-WB4101	MW41	PP01	10/12	4	N	
V	~~1030~~ 1018	S	PH2-WB4102	MW41	PP01	26/28	4	N	
		W	Temp Blank						

ANALYTICAL PARAMETERS / METHODS

	VOCS	SVOC	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO	GRO	
Method No.	8021	8310					8015	8015	
	X	X					X	X	
	X	X					X	X	

Relinquished by: (Signature) Daniel L Howard Date/Time: 10/1/99/0839

Received by: F Swafford Date/Time: 10/1/99 8:39

Cooler Temperature:

Remarks:

Send Results to: 5916522

AIRBILL CO.

TRACKING NO:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____
STORED/SHIPPED IN ICE (Y)/N

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APPENDIX VI

ALTERNATE CONCENTRATION LIMITS (ACLs) AND ALTERNATE THRESHOLD LEVELS (ATLs) CALCULATIONS

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1.0 Alternate Concentration Limits

Benzene, toluene, benzo(a)anthracene, benzo(a)pyrene, chrysene, and naphthalene were selected as COPCs for groundwater at the site. The modeling results estimated a DAF of 6.58 for the lateral migration of benzene in groundwater from the former tank pit area to the drainage ditch. PAH constituents are much less mobile in the environment than benzene and the DAF for naphthalene is at least 500 times that of the DAF for benzene. A conservative approach for estimating the DAF for PAH constituents was to use a DAF that was 10 times that of the DAF for benzene. Thus, the DAF for PAH constituents used in the ACL calculations was 65.8. The compound-specific regulatory levels or risk-based screening values were used in conjunction with the DAF to develop constituent-specific ACLs, which are presented in Table VI-A. As indicated in Table VI-A, the maximum concentration of each constituent observed during each CAP-Part A and CAP-Part B SI is adjacent to the calculated ACL. Benzene is the only constituent in groundwater where the concentrations exceed its ACL.

Table VI-A. Alternate Concentration Limits for Contaminants in Groundwater

Contaminant	Regulatory Level (µg/L)	Drainage Ditch		Maximum Observed Concentration	
		DAF[1]	ACL[2] (µg/L)	CAP-Part B	CAP-Part A
Benzene	71.28 [a]	6.58	469	**2700**	**2400**
Toluene	200,000 [a]	6.58	1,316,000	1500	2300
Benzo(a)anthracene	0.0311 [b]	65.8	2.0	0.16	ND
Benzo(a)pyrene	0.0311 [b]	65.8	2.0	0.022	ND
Chrysene	0.0311 [b]	65.8	2.0	0.18	ND
Naphthalene	6.5 [b]	65.8	428	24	79

[1] DAF = Predicted Concentration at the Source ÷ Predicted Concentration at the Receptor
= 10600 ÷ 1160 ≈ 6.58 at the drainage ditch
[2] ACL = Regulatory Level × DAF
[a] In-Stream Water Quality Standard
[b] Risk-based screening criteria
ND Not detected.
Bold values exceed the calculated ACL

2.0 Alternate Threshold Levels

Benzene, ethylbenzene, toluene, xylenes, benzo(a)pyrene, benze(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene were selected as COPCs for soil at the site. The closest receptor is located approximately 160 feet from the source, thus the DAF for lateral migration of benzene in groundwater from the source to the receptor was calculated to be 6.58. PAH constituents are much less mobile in the environment than benzene and the DAF for naphthalene is at least 500 times that of the DAF for benzene. A conservative approach for estimating the DAF for PAH constituents was to use a DAF that was 10 times that of the DAF for benzene. Thus, the DAF for PAH constituents used in the ACL calculations was 65.8. The dilution for migration of leachate to the water table was neglected because the maximum observed benzene concentration in soil was at the water table, which resulted in the assumption of an equilibrium partitioning between soil and groundwater. The ATLs for soil are presented in Table VI-B along with the maximum observed concentrations for benzene. Benzene and indeno(1,2,3-cd)pyrene are the only constituents in soil where the concentrations exceed the respective ACL.

The ATL for benzene can be calculated using the following steps:

- Step 1 – calculate the fractional organic carbon (f_{cs}) content of the contaminated soil:

  f_{cs} = 0.0117 (geometric mean of site specific total organic carbon data, dimensionless)

- Step 2 – calculate the dilution attenuation factor for lateral migration of groundwater (DAF_w) based on the predicted maximum contaminant concentration at the source and the predicted maximum contaminant concentration at the receptor:

$$DAF_w = \frac{C_{source\ max,\ w}}{C_{receptor\ max,\ w}} = \frac{10.6\ mg/L}{1.16\ mg/L} = 6.58\ (dimensionless)$$

where: $C_{source\ max,\ w}$ = AT123D predicted maximum groundwater concentration at the source
$C_{receptor\ max,w}$ = AT123D predicted maximum groundwater concentration at the receptor location

- Step 3 – calculate the alternate threshold level:

$$ATL = (K_{oc})\ (f_{cs})\ (C_{std})\ (DAF_w)$$

where: K_{oc} = organic carbon partitioning coefficient (GA UST CAP-Part A Guidance, Appendix I, Table 1)
f_{cs} = fractional organic carbon content (calculated in step 1)
C^{std} = applicable water quality standard
DAF_w = dilution attenuation factor for the lateral migration of groundwater

Constituent	K_{oc} (mL/g)	f_{cs}	C_{std} (mg/L)	DAF_w	Calculated ATL (mg/kg)
Benzene	81	0.0117	0.07128[a]	6.58	0.44
Toluene	133	0.0117	200[a]	6.58	2050
Ethylbenzene	176	0.0117	28.718[a]	6.58	389
Xylenes	639	0.0117	10[b]	6.58	494
Benzo(a)pyrene	282,185	0.0117	3.11E-5[a]	65.8	6.8
Benzo(b)fluoranthene	1,148,497	0.0117	3.11E-5[c]	65.8	27.0
Chrysene	426,108	0.0117	3.11E-5[a]	65.8	10.0
Indeno(1,2,3-cd)pyrene	6310	0.0117	3.11E-5[a]	65.8	0.15

[a] In-Stream Water Quality Standard.
[b] Maximum Contaminant Level, the constituent does not have an IWQS.
[c] IWQS for benzo(k)fluoranthene used.
Calculated ATLs for xylenes and indeno(1,2,3-cd)pyrene are less than the respective STLs, thus STLs will be used for these two constituents

Table VI-B. Alternate Threshold Levels for Contaminated Soil

Constituent	ATL (mg/kg)	Maximum Observed Concentration (mg/kg)	
		CAP-Part B	CAP-Part A
Benzene	0.44	**3.3**	**5.2**
Toluene	2050	23	110
Ethylbenzene	389	49	120
Xylenes	700	270	360
Benzo(a)pyrene	6.8	1.8	2.8
Benzo(b)fluoranthene	27.0	1.8	3.1
Chrysene	10.0	3.0	5.0
Indeno(1,2,3-cd)pyrene	0.66	**1.8**	**1.3**

Bold values exceed the calculated ATL.

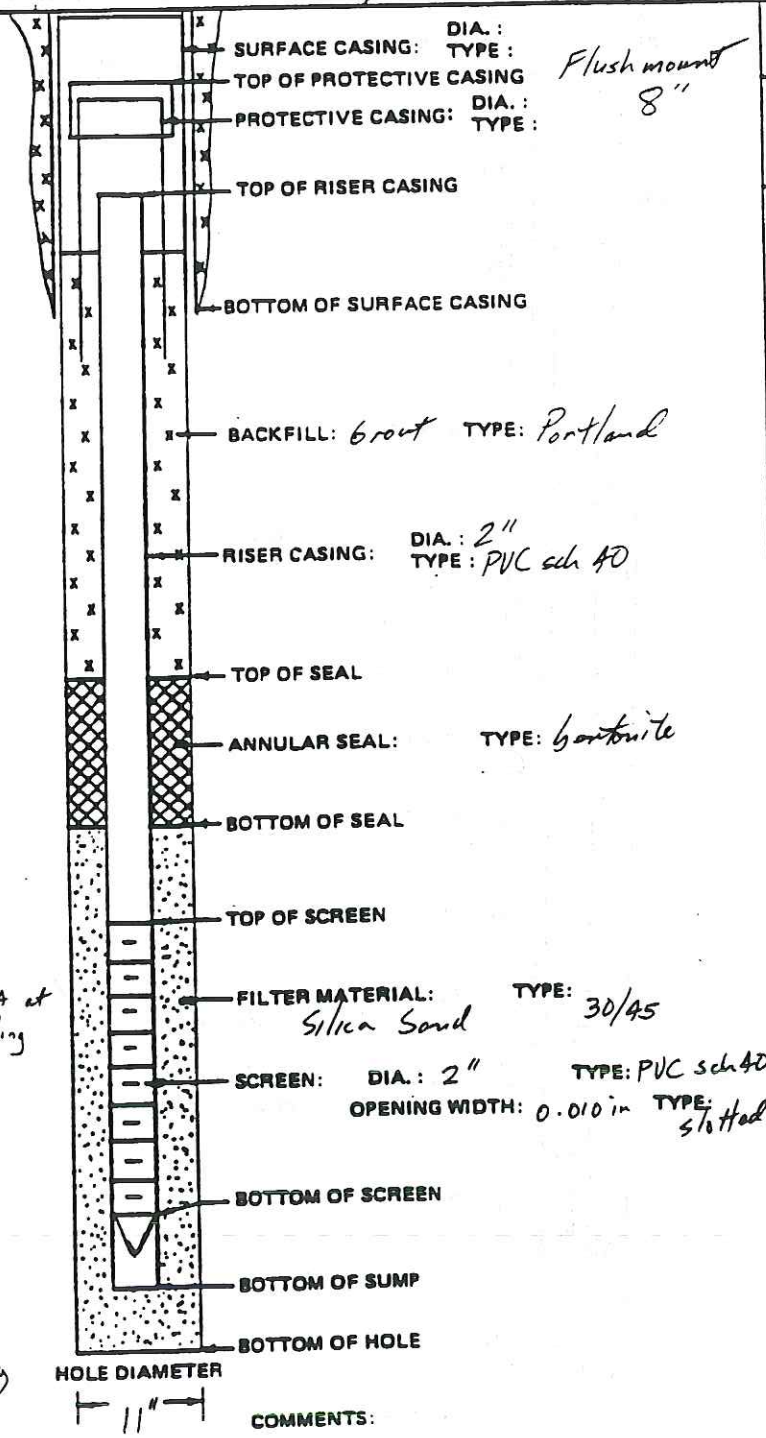
APPENDIX VII

MONITORING WELL DETAILS

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GROUND WATER INSTALLATION	PROJECT: Pumphouse 1,2,6	JOB NO.: 019457	WELL NO.: MW04
DRILLING CONTRACTOR: PSI	COORDINATES:		
BEGUN: 11/19/96 FINISHED: 11/19/96	SUPERVISOR: D. Humphrii DRILLER: M. Gribble	WELL SITE:	WATER LEVEL: 10.24 DEPTH/ELEV.: 27.85

REFERENCE POINT & ELEVATION:



Flush mount 8"

	DEPTH IN	ELEV. IN
GROUND SURFACE	0	38.3
SURFACE CASING	—	—
TOP OF PROTECTIVE CASING	0.2	38.09
PROTECTIVE CASING	—	—
TOP OF RISER CASING		
BOTTOM OF SURFACE CASING		
BACKFILL		
RISER CASING		
TOP OF SEAL	1.6	36.7
ANNULAR SEAL		
BOTTOM OF SEAL	3.6	33.1
TOP OF SCREEN	6.0	32.3
FILTER MATERIAL		
SCREEN		
BOTTOM OF SCREEN	16.0	22.3
BOTTOM OF SUMP	NA	—
BOTTOM OF HOLE	17.0	21.3

METHOD DRILLED: 6 1/4" ID HSA

METHOD DEVELOPED: See Develop log

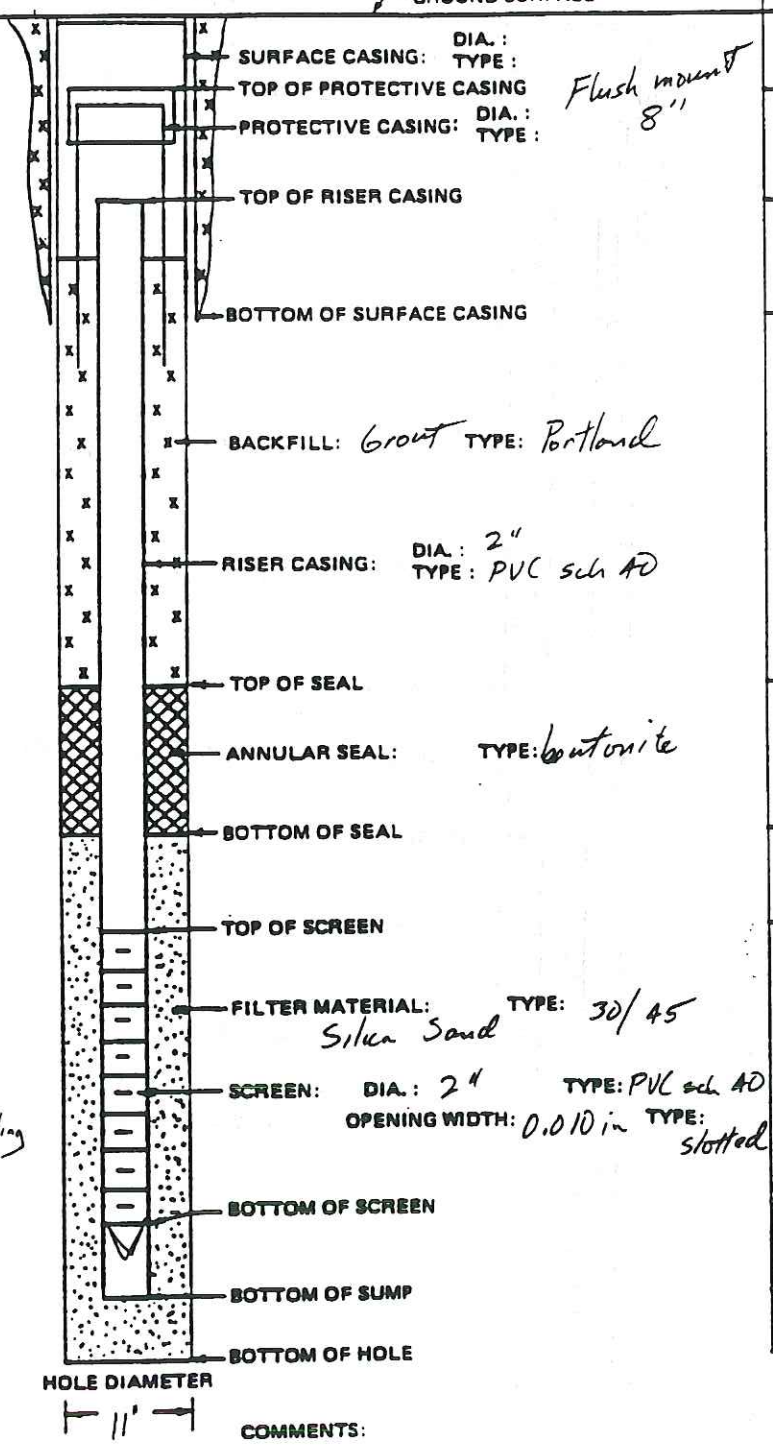
TIME DEVELOPED:

COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouse 1, 2, 6	JOB NO. 019457	WELL NO. MW05
DRILLING CONTRACTOR: PSI	COORDINATES:		
BEGUN: 11/19/96 FINISHED: 11/19/96	SUPERVISOR: D Humphris DRILLER: M. Gribble	WELL SITE:	WATER LEVEL: 11.27 / DEPTH/ELEV. 26.99

REFERENCE POINT & ELEVATION:



	DEPTH IN	ELEV. IN
GROUND SURFACE	0	38.6
SURFACE CASING / TOP OF PROTECTIVE CASING	—	—
PROTECTIVE CASING / TOP OF RISER CASING		38.26
BOTTOM OF SURFACE CASING	—	—
TOP OF SEAL	2.5	36.1
ANNULAR SEAL / BOTTOM OF SEAL	5.2	33.6
TOP OF SCREEN	7.5	31.1
SCREEN / BOTTOM OF SCREEN	17.5	21.1
BOTTOM OF SUMP	NA	—
BOTTOM OF HOLE	18.0	20.6

METHOD DRILLED: 6 1/4" ID HSA

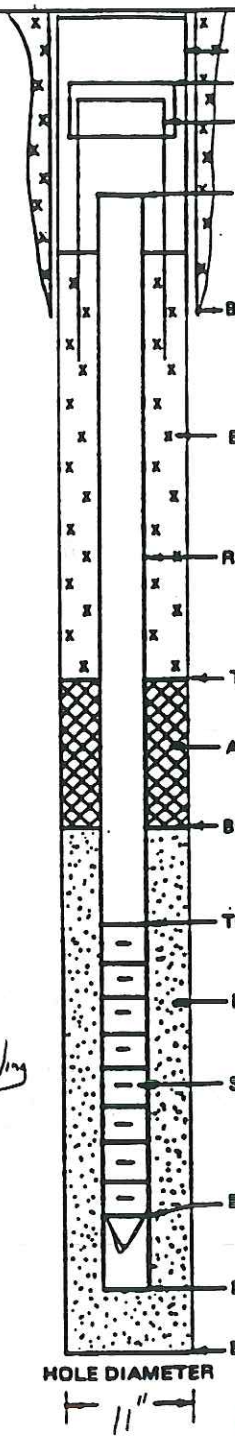
METHOD DEVELOPED: See Develop Log

TIME DEVELOPED:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouse 1,2,6	JOB NO. 019457	WELL NO. MW06
DRILLING CONTRACTOR: PSI	COORDINATES:		
BEGUN: 11/19/96 FINISHED: 11/19/96	SUPERVISOR: D. Humphris DRILLER: M. Grubble	WELL SITE:	WATER LEVEL: 11.39 DEPTH/ELEV.: 26.79

REFERENCE POINT & ELEVATION:



	DEPTH IN	ELEV. IN
GROUND SURFACE	0	38.4
SURFACE CASING: DIA.: TYPE: — TOP OF PROTECTIVE CASING: Flush Mount 8" — PROTECTIVE CASING: DIA.: TYPE:	—	—
TOP OF RISER CASING	0.2	38.18
BOTTOM OF SURFACE CASING	—	—
BACKFILL: Grout TYPE: Portland — RISER CASING: DIA.: 2" TYPE: PVC sch 40		
TOP OF SEAL	3.2	35.2
ANNULAR SEAL: TYPE: bentonite		
BOTTOM OF SEAL	5.5	32.9
TOP OF SCREEN	7.5	30.9
FILTER MATERIAL: Silica Sand TYPE: 30/45 — SCREEN: DIA.: 2" TYPE: PVC sch 40 — OPENING WIDTH: 0.010 in TYPE: slotted		
BOTTOM OF SCREEN	17.5	20.9
BOTTOM OF SUMP	NA	
BOTTOM OF HOLE	18.0	20.4

▽ 11.39 at sampling

METHOD DRILLED: 6 1/4" ID HSA

METHOD DEVELOPED: See Develop log

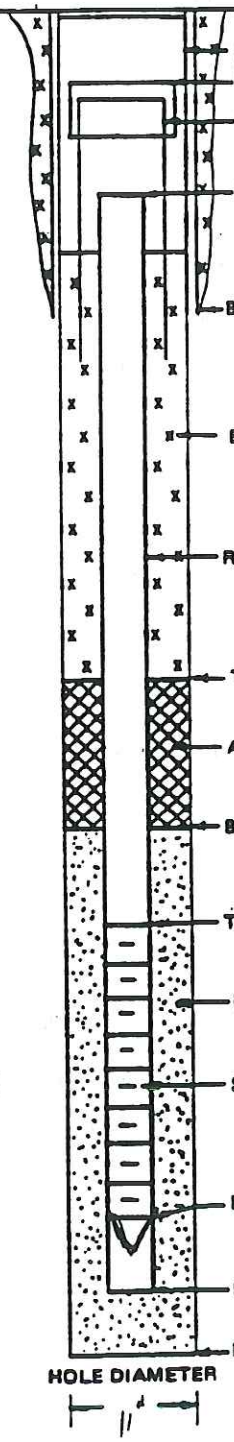
TIME DEVELOPED:

COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouse 1, 2, 6	JOB NO. 019957	WELL NO. MW10
DRILLING CONTRACTOR: PSI	COORDINATES:		
BEGUN: 11/20/96 FINISHED: 11/20/96	SUPERVISOR: D. Humphrey DRILLER: M. Gribble	WELL SITE:	WATER LEVEL: 7.86 DEPTH/ELEV.: 31.54

REFERENCE POINT & ELEVATION:



	DEPTH IN	ELEV. IN
GROUND SURFACE	0	39.5
SURFACE CASING: DIA.: TYPE:	—	—
TOP OF PROTECTIVE CASING / PROTECTIVE CASING: DIA.: TYPE: Flush mount 6"		
TOP OF RISER CASING	0.1	39.40
BOTTOM OF SURFACE CASING	—	—
BACKFILL: Quickrete TYPE: 5000 / RISER CASING: DIA.: 2" TYPE: PVC sch 40		
TOP OF SEAL	1.5	38.0
ANNULAR SEAL: Silica Sand TYPE: Bentonite 30/45		
BOTTOM OF SEAL	2.9	36.4
TOP OF SCREEN	5.0	34.5
FILTER MATERIAL: Silica Sand TYPE: 30/45 / SCREEN: DIA.: 2" TYPE: PVC sch 40 / OPENING WIDTH: 0.010 in TYPE: Slotted		
BOTTOM OF SCREEN	15.0	24.5
BOTTOM OF SUMP	—	—
BOTTOM OF HOLE	16.0	23.5

▽ 7.86' at sampling

METHOD DRILLED: 6 1/4" ID HSA

METHOD DEVELOPED: See Development log

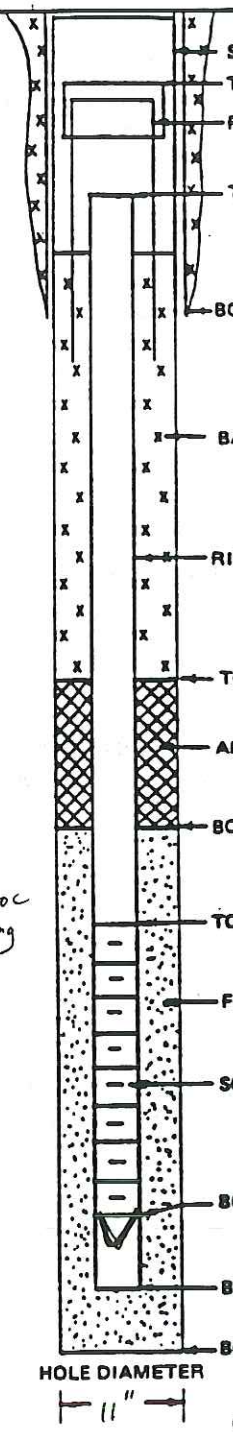
TIME DEVELOPED:

COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouse 1,2,6	JOB NO. 019457	WELL NO. MW 25
DRILLING CONTRACTOR: PSI	COORDINATES:		
BEGUN: 5/8/97 FINISHED: 5/8/97	SUPERVISOR: D. Humphrey DRILLER: K. Durham	WELL SITE:	WATER LEVEL: 8.04' TOC DEPTH/ELEV.: 31.15'

REFERENCE POINT & ELEVATION:



Flush Mount

Concrete — Sackrete 5000 psi

2" PVC sch 40

bentonite — Wyoben pellets

W.L.= 8.04' TOC at sampling

Silica Sand — 30/45

2" PVC sch 40 — 0.010 in — slotted

DEPTH IN FT	ELEV. IN MSL
0	39.4
—	—
0.2	39.19
—	—
1.4	38.0
3.0	36.4
5.0	34.4
15.0	24.4
—	—
15.5	23.9

GENERALIZED GEOLOGIC LOG

METHOD DRILLED: 6 1/4" ID HSA

METHOD DEVELOPED: See Develop Log

TIME DEVELOPED:

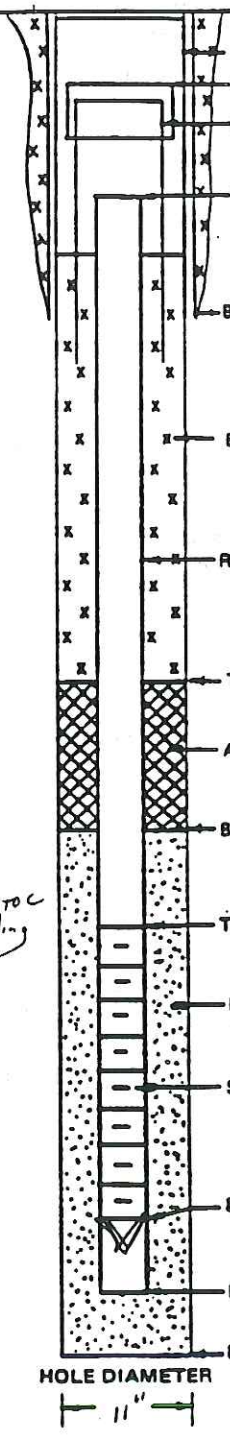
COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouse 1, 2, 6	JOB NO. 019457	WELL NO. MW 26
DRILLING CONTRACTOR: PSI	COORDINATES:		
BEGUN: 5/8/97 FINISHED: 5/8/97	SUPERVISOR: D Humphris DRILLER: K. Durham	WELL SITE:	WATER LEVEL: DEPTH/ELEV. 7.30' TOC / 31.18'

REFERENCE POINT & ELEVATION:

GENERALIZED GEOLOGIC LOG



Flush Mount

	DEPTH IN . FT	ELEV. IN
GROUND SURFACE	0	38.6
SURFACE CASING: DIA.: TYPE: / TOP OF PROTECTIVE CASING	—	—
PROTECTIVE CASING: DIA.: TYPE: / TOP OF RISER CASING	0.1	38.48
BOTTOM OF SURFACE CASING	—	—
BACKFILL: Grout TYPE: Portland / RISER CASING: DIA.: 2" TYPE: PVC Sch 40	1.0	37.6
TOP OF SEAL / ANNULAR SEAL: Bentonite TYPE: W/O Bon pellets	2.9	35.7
BOTTOM OF SEAL	5.0	33.6
TOP OF SCREEN / FILTER MATERIAL: Silica Sand TYPE: 30/45 / SCREEN: DIA.: 2" TYPE: PVC Sch 40 OPENING WIDTH: 0.010 in TYPE: slotted	15.0	23.6
BOTTOM OF SCREEN	—	—
BOTTOM OF SUMP	15.5	23.1
BOTTOM OF HOLE		

METHOD DRILLED: 6 1/4" ID HSA

METHOD DEVELOPED: See Develop Log

TIME DEVELOPED:

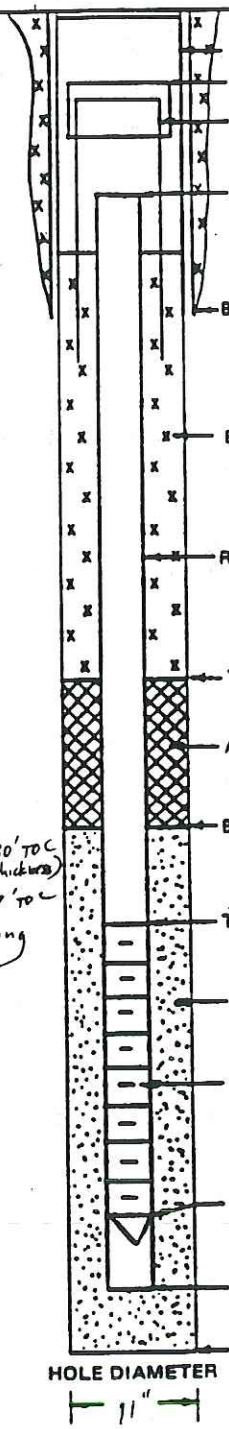
COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouse 1, 2, 6	JOB NO. 019457-4103	WELL NO. MW27
DRILLING CONTRACTOR: PSI	COORDINATES:		
BEGUN: 5/9/97 FINISHED: 5/9/97	SUPERVISOR: D. Humphris DRILLER: K. Durham	WELL SITE:	WATER LEVEL: 12.27' TOC / DEPTH/ELEV. 26.42'

REFERENCE POINT & ELEVATION:

GENERALIZED GEOLOGIC LOG



Flush Mount

Free Product = 11.30' TOC (0.97' thickness)
W.L. = 12.27' TOC at sampling

	DEPTH IN	ELEV. IN
GROUND SURFACE	0	38.9
SURFACE CASING / TOP OF PROTECTIVE CASING	—	—
PROTECTIVE CASING / TOP OF RISER CASING	0.2	38.69
BOTTOM OF SURFACE CASING	—	—
BACKFILL / RISER CASING		
TOP OF SEAL	3.5	35.4
ANNULAR SEAL		
BOTTOM OF SEAL	5.5	33.4
TOP OF SCREEN	7.5	31.4
FILTER MATERIAL / SCREEN		
BOTTOM OF SCREEN	17.5	21.4
BOTTOM OF SUMP	—	
BOTTOM OF HOLE	18.0	20.9

METHOD DRILLED: 6¼" ID HSA

METHOD DEVELOPED: See develop Log

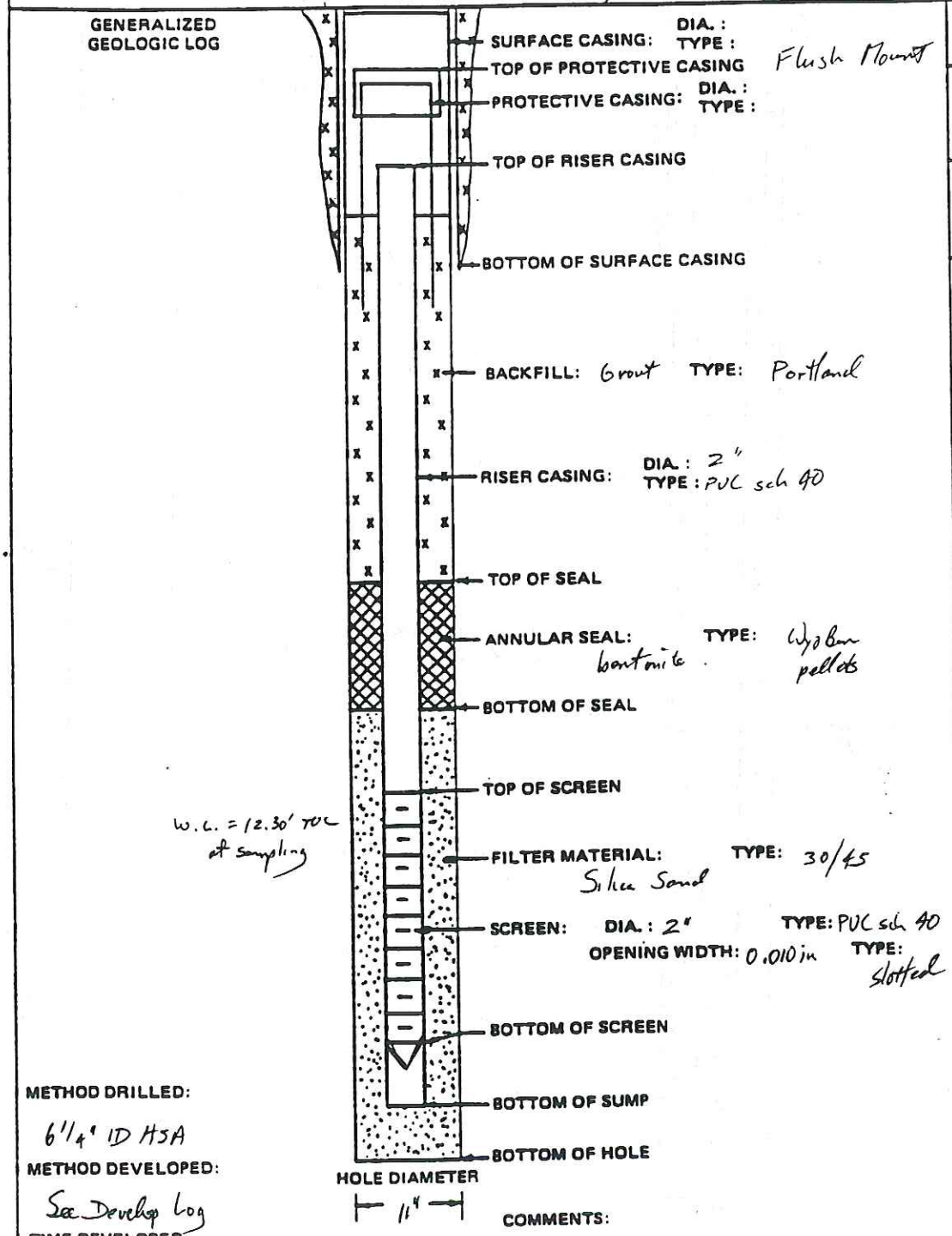
TIME DEVELOPED:

COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouse 1, 2, 6	JOB NO. 019457 4.03	WELL NO. MW28
DRILLING CONTRACTOR: PSI	COORDINATES:		
BEGUN: 5/8/97 FINISHED: 5/8/97	SUPERVISOR: D. Humphris DRILLER: K. Durham	WELL SITE:	WATER LEVEL: 12.30' TOC DEPTH/ELEV.: 26.98'

REFERENCE POINT & ELEVATION:



DEPTH IN	ELEV. IN
0	39.4
—	—
0.1	39.28
—	—
3.8	35.6
6.0	33.6
8.0	31.6
18.0	21.6
—	
18.5	21.1

METHOD DRILLED: 6 1/4" ID HSA

METHOD DEVELOPED: See Develop Log

TIME DEVELOPED:

COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION

PROJECT: Pumphouse 1, 2, 6 | JOB NO. 019457 4103 | WELL NO. MW29

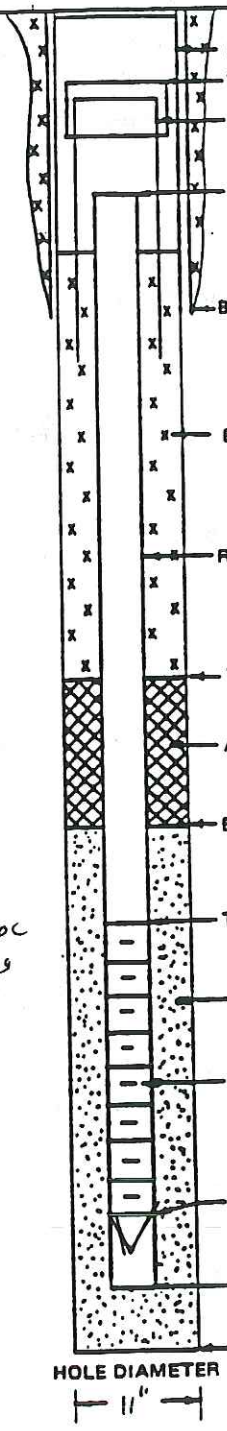
DRILLING CONTRACTOR: PSI | COORDINATES:

BEGUN: 5/8/97 | SUPERVISOR: D. Humphris | WELL SITE: | WATER LEVEL: DEPTH/ELEV. 13.68' TOC / 26.56'

FINISHED: 5/8/97 | DRILLER: K. Durham

REFERENCE POINT & ELEVATION:

GENERALIZED GEOLOGIC LOG



Flush Mount

W.L. = 13.68' TOC at sampling

DEPTH IN	ELEV. IN
0	40.5
—	—
0.3	40.24
—	—
5.0	35.5
7.0	33.5
9.0	31.5
19.0	21.5
—	
20.0	20.5

METHOD DRILLED: 6 1/4" ID HSA

METHOD DEVELOPED: See Develop Log

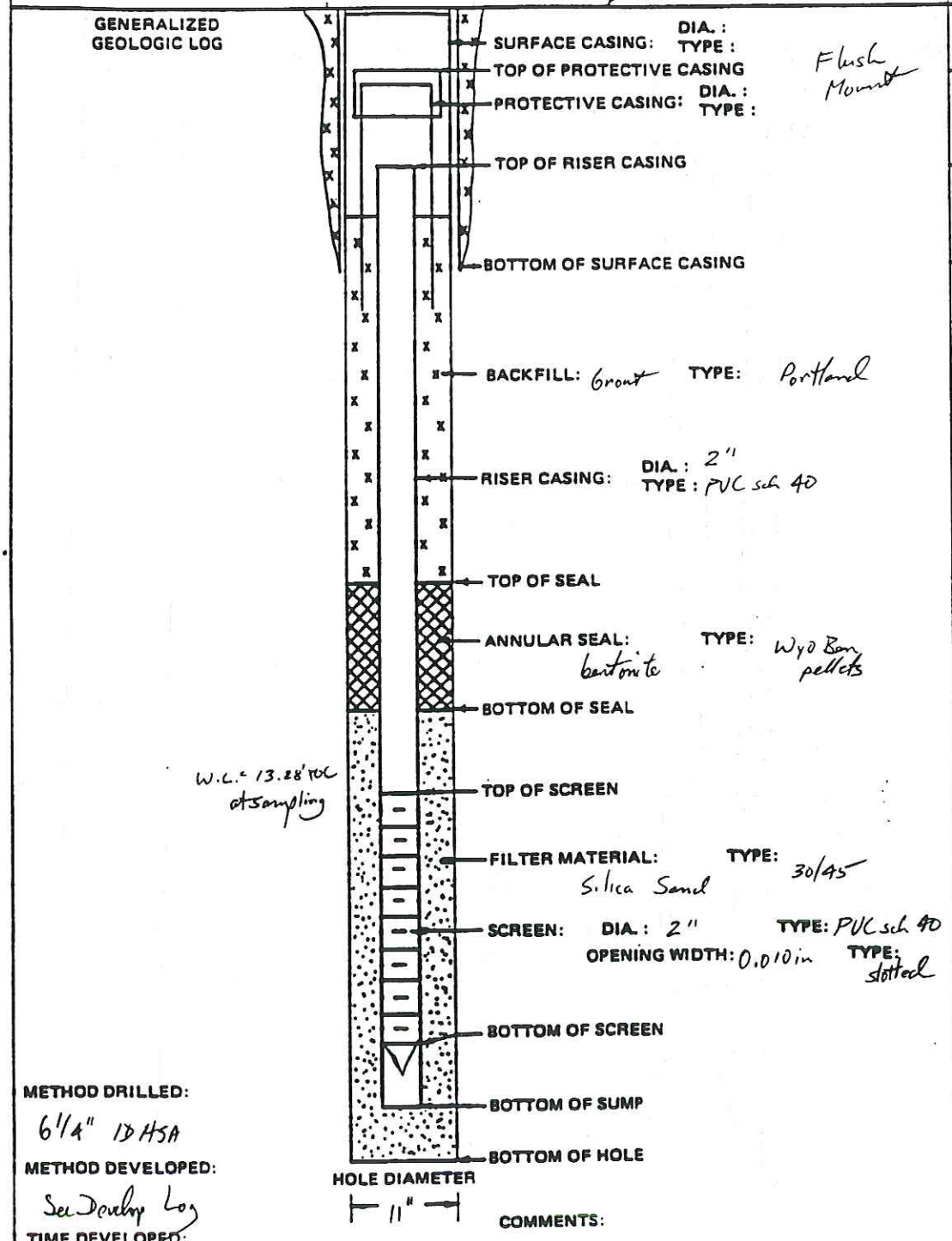
TIME DEVELOPED:

COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouse 1, 2, 6	JOB NO. 019457-1103	WELL NO. MW30
DRILLING CONTRACTOR: PSI	COORDINATES:		
BEGUN: 5/9/97 FINISHED: 5/9/97	SUPERVISOR: D. Humphris DRILLER: K. Durham	WELL SITE:	WATER LEVEL: 13.28' TOC DEPTH/ELEV.: 26.02'

REFERENCE POINT & ELEVATION:



	DEPTH IN	ELEV. IN
GROUND SURFACE	0	39.5
SURFACE CASING / TOP OF PROTECTIVE CASING	—	—
TOP OF RISER CASING	0.2	39.30
BOTTOM OF SURFACE CASING	—	—
TOP OF SEAL	4.5	35.0
BOTTOM OF SEAL	7.0	32.5
TOP OF SCREEN	9.0	30.5
BOTTOM OF SCREEN	19.0	20.5
BOTTOM OF SUMP	—	—
BOTTOM OF HOLE	20.0	19.5

METHOD DRILLED: 6 1/4" ID HSA

METHOD DEVELOPED: See Develop Log

TIME DEVELOPED:

COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION

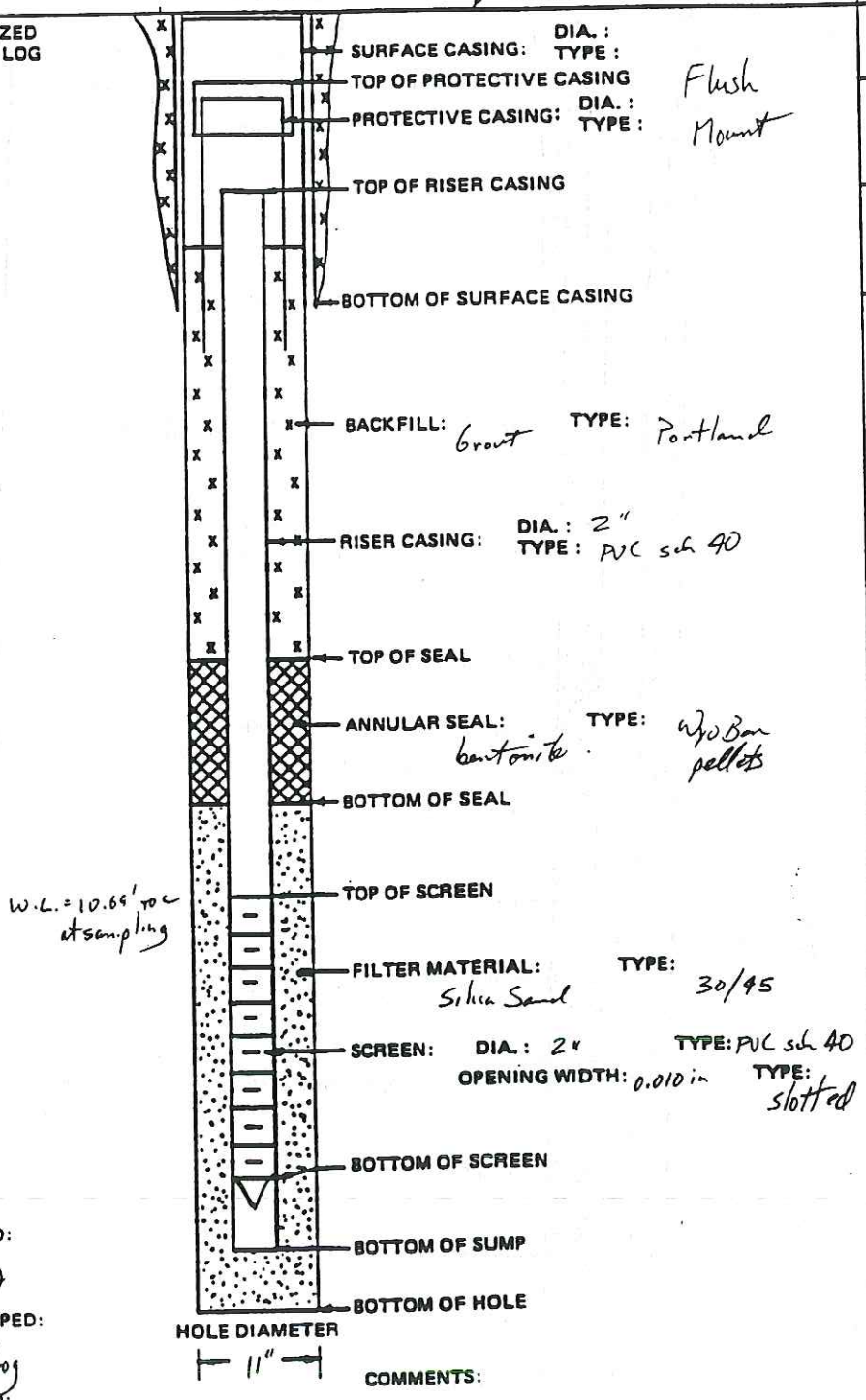
PROJECT: Pumphouse 1, 2, 6 | JOB NO. 019457-4103 | WELL NO. MW 31

DRILLING CONTRACTOR: PSI | COORDINATES:

BEGUN: 5/4/97 | SUPERVISOR: D. Humphris | WELL SITE: | WATER LEVEL: DEPTH/ELEV. 10.69' TOC / 26.47'

FINISHED: 5/9/97 | DRILLER: K. Durham

REFERENCE POINT & ELEVATION:



DEPTH IN	ELEV. IN
0	37.3
—	—
0.1	37.16
—	—
3.8	33.5
5.9	31.4
8.0	29.3
18.0	19.3
—	—
19.0	18.3

METHOD DRILLED: 6 1/4" ID HSA

METHOD DEVELOPED: See Develop Log

TIME DEVELOPED:

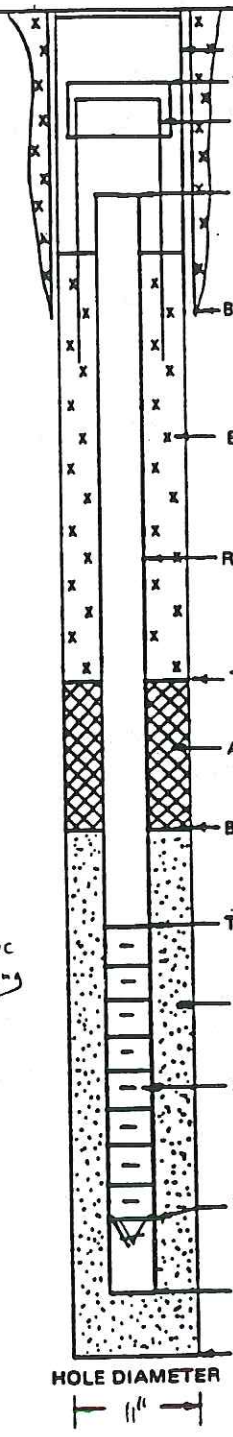
COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouse 1, 2, 6	JOB NO. 019457 4103	WELL NO. MW 32
DRILLING CONTRACTOR: PSI	COORDINATES:		
BEGUN: 5/13/97 FINISHED: 5/13/97	SUPERVISOR: D. Humphries DRILLER: K. Durham	WELL SITE:	WATER LEVEL: DEPTH/ELEV. 12.77' TOC / 27.36'

REFERENCE POINT & ELEVATION:

GENERALIZED GEOLOGIC LOG



	DEPTH IN	ELEV. IN
GROUND SURFACE	0	40.3
SURFACE CASING: DIA.: TYPE: Flush Mount	—	—
TOP OF PROTECTIVE CASING		
PROTECTIVE CASING: DIA.: TYPE:		
TOP OF RISER CASING	0.2	40.13
BOTTOM OF SURFACE CASING	—	—
BACKFILL: Grout TYPE: Portland		
RISER CASING: DIA.: 2" TYPE: PVC sch 40		
TOP OF SEAL	24.8	15.5
ANNULAR SEAL: TYPE: bentonite w/0 Ben pellets		
BOTTOM OF SEAL	27.0	13.3
TOP OF SCREEN	30.0	10.3
FILTER MATERIAL: TYPE: 30/45 Silica Sand		
SCREEN: DIA.: 2" TYPE: PVC sch 40 OPENING WIDTH: 0.010 in TYPE: Slotted		
BOTTOM OF SCREEN	35.0	5.3
BOTTOM OF SUMP	—	—
BOTTOM OF HOLE	35.0	5.3

W.L. = 12.77' TOC at sampling

METHOD DRILLED: 6 1/4" ID HSA

METHOD DEVELOPED: See Develop Log

TIME DEVELOPED:

HOLE DIAMETER 11"

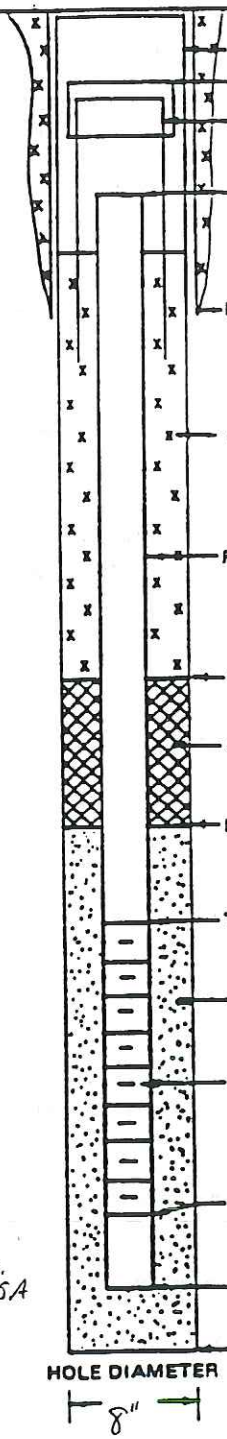
COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouses #1 & #2 JOB NO. 019457	WELL NO. MW 37
DRILLING CONTRACTOR: PSI	COORDINATES:	
BEGUN: 9/28/99 SUPERVISOR: G. Rowell FINISHED: 9/28/99 DRILLER: C. Smith	WELL SITE: PH #2	WATER LEVEL: DEPTH/ELEV.

REFERENCE POINT & ELEVATION:

GENERALIZED GEOLOGIC LOG



	DEPTH IN ft.	ELEV. IN
GROUND SURFACE	0.0'	42.5
TOP OF PROTECTIVE CASING	0.28	42.22
TOP OF SEAL	3.8'	38.7
BOTTOM OF SEAL	6.4'	36.1
TOP OF SCREEN	8.1'	34.4
BOTTOM OF SCREEN	18.1'	24.4
BOTTOM OF SUMP	18.6'	23.9
BOTTOM OF HOLE	19.0'	23.5

METHOD DRILLED: 6¼" I.D. HSA

METHOD DEVELOPED:

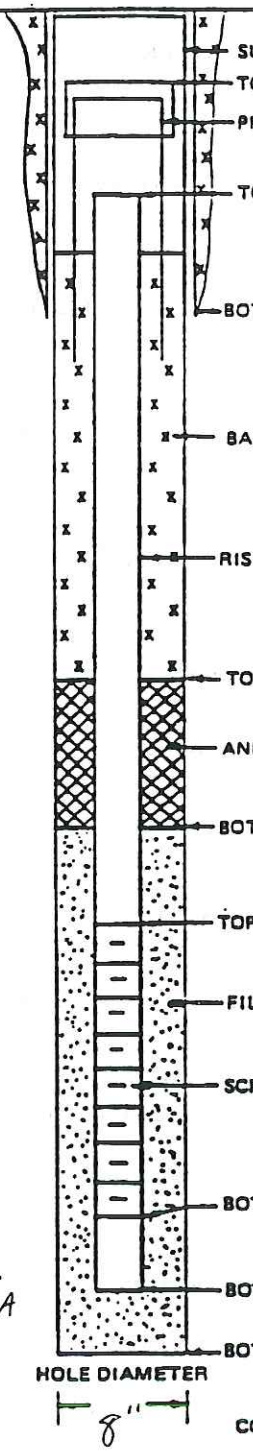
TIME DEVELOPED:

COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pump houses #1 & #2 JOB NO. 01945-7	WELL NO. MW 38
DRILLING CONTRACTOR: PSI	COORDINATES:	
BEGUN: 9/28/99 FINISHED: 9/28/99	SUPERVISOR: G. Rowell DRILLER: C. Smith	WELL SITE: PH #2
		WATER LEVEL: DEPTH/ELEV.

REFERENCE POINT & ELEVATION:



DEPTH IN Ft.	ELEV. IN
0.0'	43.0
0.19	42.81
6.7'	36.3
8.9'	34.1
10.9'	32.1
20.9'	22.1
21.4'	21.6
21.0'	22.0

METHOD DRILLED: 6 1/4" I.D. HSA

METHOD DEVELOPED:

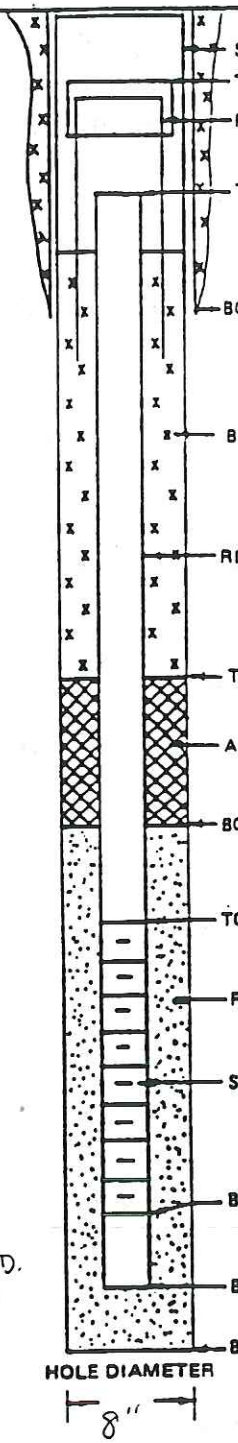
TIME DEVELOPED:

COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: pumphouses #1 & #2	JOB NO. 019457	WELL NO. MW 39
DRILLING CONTRACTOR: PSI	COORDINATES:		
BEGUN: / FINISHED:	SUPERVISOR: G. Rowell / DRILLER: C. Smith	WELL SITE:	WATER LEVEL: DEPTH/ELEV.

REFERENCE POINT & ELEVATION:



	DEPTH IN ft.	ELEV. IN
GROUND SURFACE	0.0	40.8
TOP OF PROTECTIVE CASING	0.17	40.63
TOP OF SEAL	5.3'	35.5
BOTTOM OF SEAL	7.2'	33.6
TOP OF SCREEN	9.1'	31.7
BOTTOM OF SCREEN	19.1'	21.7
BOTTOM OF SUMP	19.6'	21.2
BOTTOM OF HOLE	20.0'	20.8

METHOD DRILLED: 6 1/4" I.D. HSA

METHOD DEVELOPED:

TIME DEVELOPED:

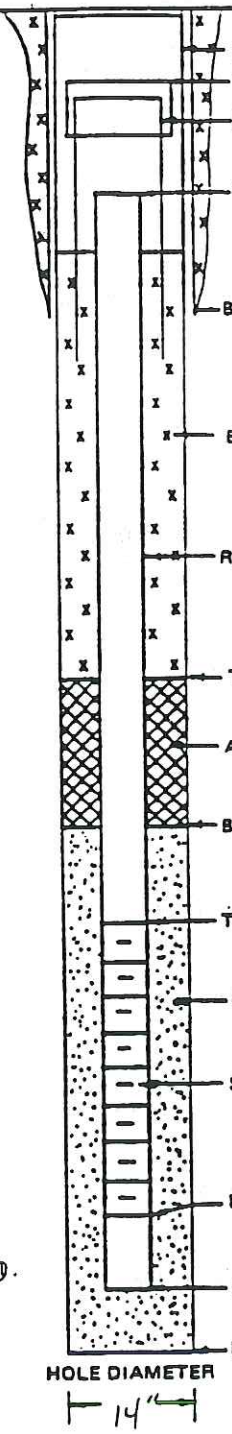
COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouses #1+#2 JOB NO. 019457	WELL NO. MW41
DRILLING CONTRACTOR: PSI	COORDINATES:	
BEGUN: 10/13/99 SUPERVISOR: G. Rowell FINISHED: 10/13/99 DRILLER: K. Durham	WELL SITE:	WATER LEVEL: DEPTH/ELEV.

REFERENCE POINT & ELEVATION:

GENERALIZED GEOLOGIC LOG



	DEPTH IN	ELEV. I
		38.6
	0.3'	38.17
	2.0'	36.6
	3.0'	35.6
	5.3'	33.3
	25.3'	13.3
	26.05'	12.55
	28.0'	10.6

METHOD DRILLED: 10.25" I.D. HSA

METHOD DEVELOPED:

TIME DEVELOPED:

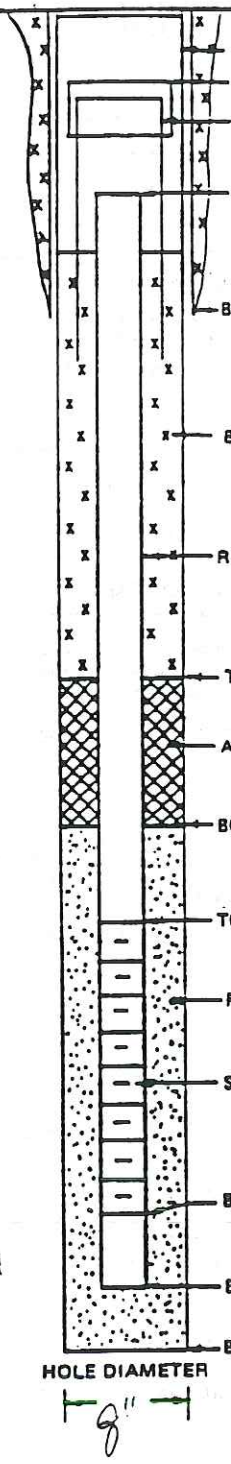
COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouses #1 & #2	JOB NO. 019457	WELL NO. MW 43
DRILLING CONTRACTOR: PSI	COORDINATES:		
BEGUN: 9/27/99 FINISHED: 9/27/99	SUPERVISOR: ~~C. Smith~~ G. Rowell DRILLER: C. Smith	WELL SITE: PH #2	WATER LEVEL: DEPTH/ELEV.

REFERENCE POINT & ELEVATION:

GENERALIZED GEOLOGIC LOG



	DEPTH IN	ELEV. IN
GROUND SURFACE	0.0'	38.6
BOTTOM OF SURFACE CASING	0.18	38.42
RISER CASING	2.0'	36.6
BOTTOM OF SEAL	3.9'	34.7
TOP OF SCREEN	5.6'	33
BOTTOM OF SCREEN	15.6'	23
BOTTOM OF SUMP	16.6'	22.6
BOTTOM OF HOLE	16.0'	22.6

METHOD DRILLED: 6¼" HSA I.D.

METHOD DEVELOPED:

TIME DEVELOPED:

COMMENTS:

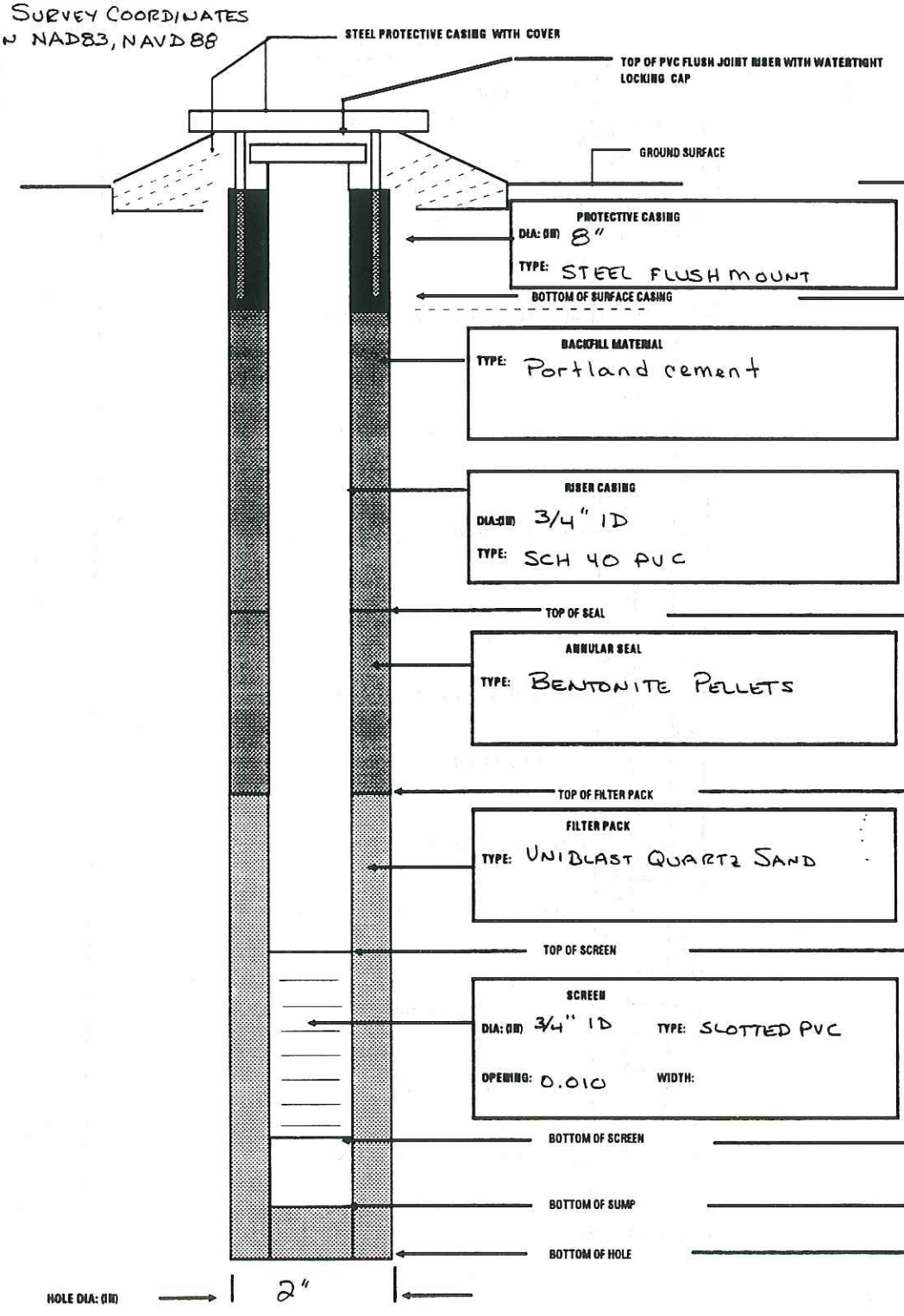
Metcalf & Eddy

MONITORING WELL

PROJECT: HAAF Former Pumphouse #2

WELL NUMBER: P2-MW29A	**BEGIN:** 2/18/00	**END:** 2/18/00
COORDINATES: N: 733806.1 E: 975103.8	**REFERENCE POINT:** TOC	**ELEVATION:** 39.1

NOTE: SURVEY COORDINATES ARE IN NAD83, NAVD88



	DEPTH	ELEV
GROUND SURFACE	0	39.5
TOP OF SEAL	0	39.5
TOP OF FILTER PACK	2.0	37.5
TOP OF SCREEN	7.9	29.6
BOTTOM OF SCREEN	17.9	19.6
BOTTOM OF SUMP	18.0	19.5
BOTTOM OF HOLE	18.0	19.5

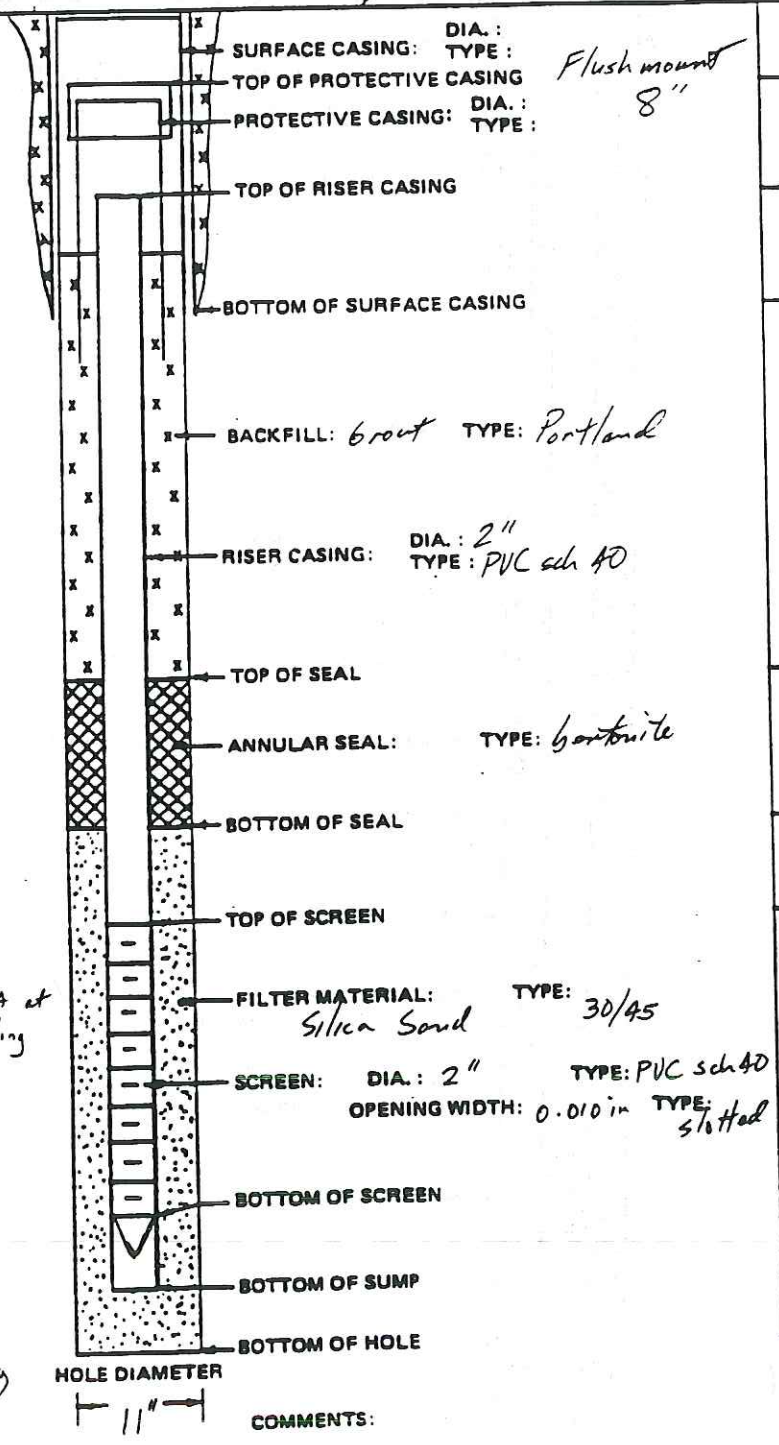
APPENDIX VII

MONITORING WELL DETAILS

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GROUND WATER INSTALLATION	PROJECT: Pumphouse 1,2,6	JOB NO.: 019457	WELL NO.: MW04
DRILLING CONTRACTOR: PSI	COORDINATES:		
BEGUN: 11/19/96 FINISHED: 11/19/96	SUPERVISOR: D. Humphrii DRILLER: M. Gribble	WELL SITE:	WATER LEVEL: 10.24 DEPTH/ELEV.: 27.85

REFERENCE POINT & ELEVATION:



	DEPTH IN	ELEV. IN
GROUND SURFACE	0	38.3
SURFACE CASING / TOP OF PROTECTIVE CASING / PROTECTIVE CASING	—	—
TOP OF RISER CASING	0.2	38.09
BOTTOM OF SURFACE CASING	—	—
TOP OF SEAL	1.6	36.7
ANNULAR SEAL / BOTTOM OF SEAL	3.6	33.1
TOP OF SCREEN	6.0	32.3
BOTTOM OF SCREEN	16.0	22.3
BOTTOM OF SUMP	NA	—
BOTTOM OF HOLE	17.0	21.3

METHOD DRILLED: 6 1/4" ID HSA

METHOD DEVELOPED: See Develop Log

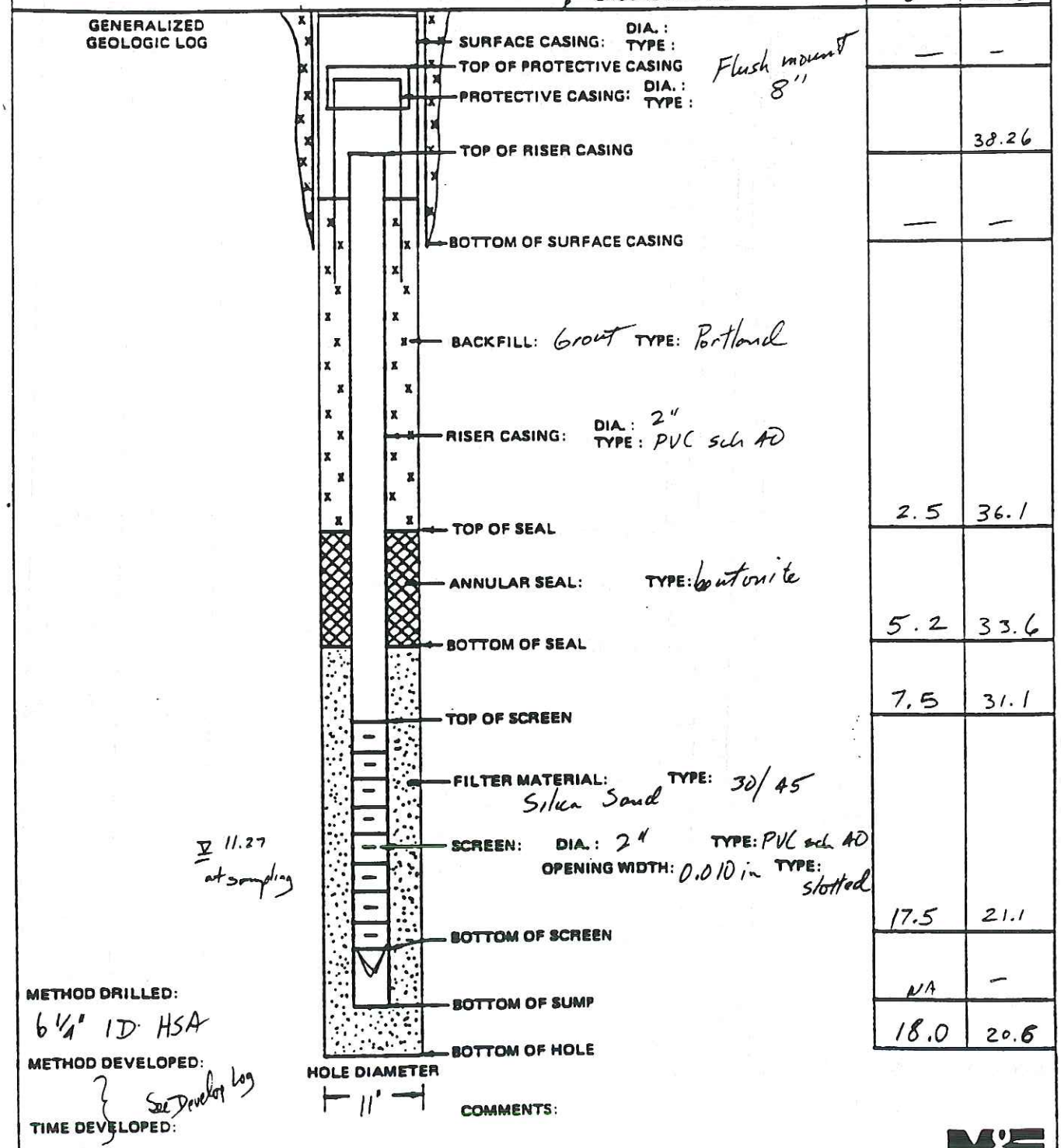
TIME DEVELOPED:

COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouse 1, 2, 6	JOB NO. 019457	WELL NO. MW05
DRILLING CONTRACTOR: PSI	COORDINATES:		
BEGUN: 11/19/96 FINISHED: 11/19/96	SUPERVISOR: D Humphris DRILLER: M. Gribble	WELL SITE:	WATER LEVEL: 11.27 / DEPTH/ELEV. 26.99

REFERENCE POINT & ELEVATION:



	DEPTH IN	ELEV. IN
GROUND SURFACE	0	38.6
SURFACE CASING / TOP OF PROTECTIVE CASING	—	—
PROTECTIVE CASING / TOP OF RISER CASING		38.26
BOTTOM OF SURFACE CASING	—	—
TOP OF SEAL	2.5	36.1
ANNULAR SEAL / BOTTOM OF SEAL	5.2	33.6
TOP OF SCREEN	7.5	31.1
SCREEN / BOTTOM OF SCREEN	17.5	21.1
BOTTOM OF SUMP	NA	—
BOTTOM OF HOLE	18.0	20.6

METHOD DRILLED: 6 1/4" ID HSA

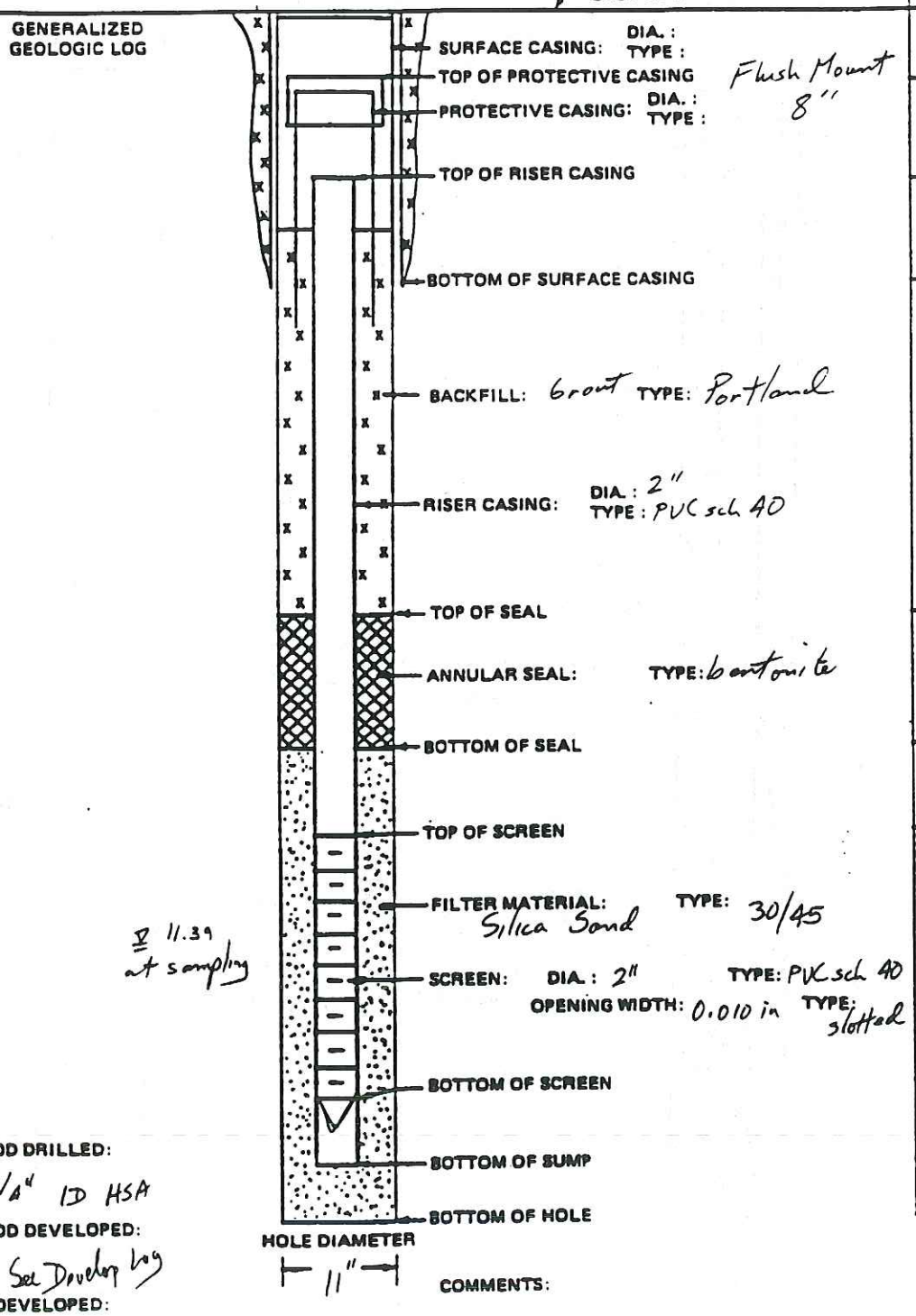
METHOD DEVELOPED: See Develop log

TIME DEVELOPED:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouse 1,2,6	JOB NO. 019457	WELL NO. MW06
DRILLING CONTRACTOR: PSI	COORDINATES:		
BEGUN: 11/19/96 FINISHED: 11/19/96	SUPERVISOR: D. Humphris DRILLER: M. Gribble	WELL SITE:	WATER LEVEL: 11.39 DEPTH/ELEV.: / 26.79

REFERENCE POINT & ELEVATION:



	DEPTH IN	ELEV. IN
GROUND SURFACE	0	38.4
SURFACE CASING / TOP OF PROTECTIVE CASING / PROTECTIVE CASING	—	—
TOP OF RISER CASING	0.2	38.18
BOTTOM OF SURFACE CASING	—	—
TOP OF SEAL	3.2	35.2
ANNULAR SEAL / BOTTOM OF SEAL	5.5	32.9
TOP OF SCREEN	7.5	30.9
BOTTOM OF SCREEN	17.5	20.9
BOTTOM OF SUMP	NA	
BOTTOM OF HOLE	18.0	20.4

METHOD DRILLED: 6 1/4" ID HSA

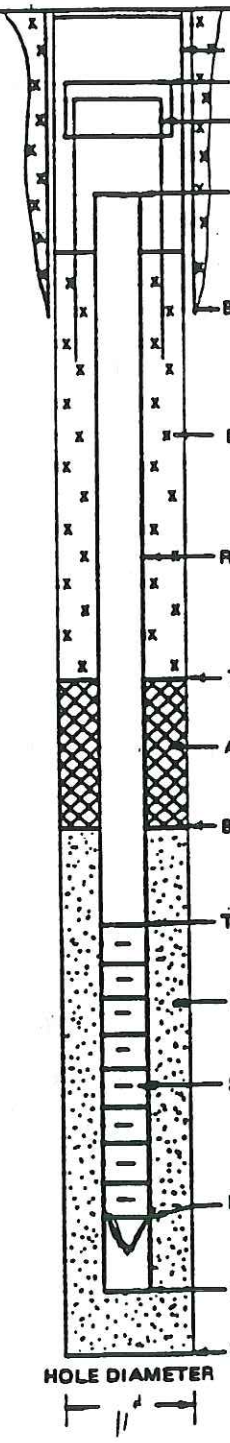
METHOD DEVELOPED: See Develop log

TIME DEVELOPED:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouse 1,2,6	JOB NO.: 019957	WELL NO.: MW10
DRILLING CONTRACTOR: PSI	COORDINATES:		
BEGUN: 11/20/96 FINISHED: 11/20/96	SUPERVISOR: D. Humphrey DRILLER: M. Grubb	WELL SITE:	WATER LEVEL: DEPTH/ELEV. 7.86 / 31.54

REFERENCE POINT & ELEVATION:



	DEPTH IN	ELEV. IN
GROUND SURFACE	0	39.5
SURFACE CASING: DIA.: TYPE: / TOP OF PROTECTIVE CASING	—	—
PROTECTIVE CASING: DIA.: TYPE: Flush mount 6" / TOP OF RISER CASING	0.1	39.40
BOTTOM OF SURFACE CASING	—	—
BACKFILL: Quickrete TYPE: 5000 / RISER CASING: DIA.: 2" TYPE: PVC sch 40	1.5	38.0
TOP OF SEAL / ANNULAR SEAL: TYPE: Bentonite 30/45 Silica Sand	2.9	36.4
BOTTOM OF SEAL	5.0	34.5
TOP OF SCREEN / FILTER MATERIAL: TYPE: 30/45 Silica Sand / SCREEN: DIA.: 2" TYPE: PVC sch 40 / OPENING WIDTH: 0.010 in TYPE: Slotted	15.0	24.5
BOTTOM OF SCREEN	—	—
BOTTOM OF SUMP	16.0	23.5
BOTTOM OF HOLE		

▽ 7.86' at sampling

METHOD DRILLED: 6 1/4" ID HSA

METHOD DEVELOPED: See Development log

TIME DEVELOPED:

COMMENTS:

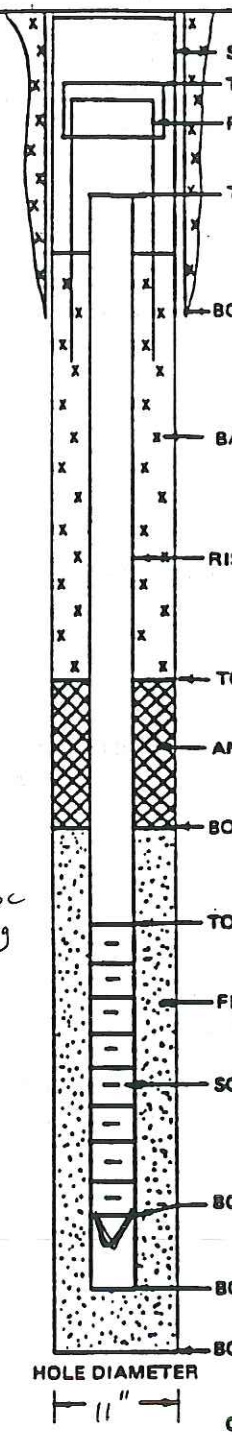
Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouse 1,2,6	JOB NO. 019457	WELL NO. MW 25
DRILLING CONTRACTOR: PSI	COORDINATES:		

BEGUN: 5/8/97	SUPERVISOR: D. Humphrey	WELL SITE:	WATER LEVEL: DEPTH/ELEV.
FINISHED: 5/8/97	DRILLER: K. Durham		8.09' TOC / 31.15'

REFERENCE POINT & ELEVATION:

GENERALIZED GEOLOGIC LOG



Flush Mount

Concrete — Sackrete 5000 psi

2" PVC sch 40

bentonite — Wyo Ben pellets

W.L. = 8.09' TOC at sampling

Silica Sand — 30/45

PVC sch 40

OPENING WIDTH: 0.010 in — slotted

	DEPTH IN FT	ELEV. IN MSL
GROUND SURFACE	0	39.4
SURFACE CASING / TOP OF PROTECTIVE CASING	—	—
PROTECTIVE CASING / TOP OF RISER CASING	0.2	39.19
BOTTOM OF SURFACE CASING	—	—
BACKFILL / RISER CASING / TOP OF SEAL	1.4	38.0
ANNULAR SEAL / BOTTOM OF SEAL	3.0	36.4
TOP OF SCREEN	5.0	34.4
FILTER MATERIAL / SCREEN	15.0	24.4
BOTTOM OF SCREEN	—	—
BOTTOM OF SUMP	15.5	23.9
BOTTOM OF HOLE		

METHOD DRILLED: 6 1/4" ID HSA

METHOD DEVELOPED: See Develop log

TIME DEVELOPED:

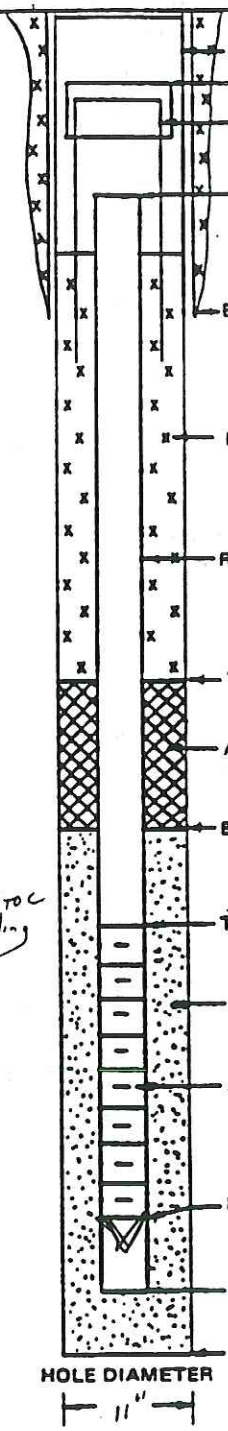
COMMENTS:

Metcalf & Eddy

GROUND WATER INSTALLATION	PROJECT: Pumphouse 1,2,6 JOB NO. 019457	WELL NO. MW26
DRILLING CONTRACTOR: DSI	COORDINATES:	
BEGUN: 5/8/97 FINISHED: 5/8/97 SUPERVISOR: D Humphris DRILLER: K. Durham	WELL SITE:	WATER LEVEL: DEPTH/ELEV. 7.30' TOC / 31.18'

REFERENCE POINT & ELEVATION:

GENERALIZED GEOLOGIC LOG



Flush Mount

W.L. = 7.30' TOC at sampling

	DEPTH IN . FT	ELEV. IN
GROUND SURFACE	0	38.6
SURFACE CASING / TOP OF PROTECTIVE CASING	—	—
PROTECTIVE CASING / TOP OF RISER CASING	0.1	38.48
BOTTOM OF SURFACE CASING	—	—
BACKFILL / RISER CASING / TOP OF SEAL	1.0	37.6
ANNULAR SEAL / BOTTOM OF SEAL	2.9	35.7
TOP OF SCREEN	5.0	33.6
FILTER MATERIAL / SCREEN	15.0	23.6
BOTTOM OF SCREEN	—	—
BOTTOM OF SUMP / BOTTOM OF HOLE	15.5	23.1

METHOD DRILLED: 6 1/4" ID HSA

METHOD DEVELOPED: See Develop Log

TIME DEVELOPED:

COMMENTS:

M&E Metcalf & Eddy

APPENDIX VIII

GROUNDWATER AND SURFACE WATER LABORATORY RESULTS

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CAP-PART A
GROUNDWATER ANALYTICAL RESULTS

DECEMBER 1996

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Table VIII-A. Summary of CAP-Part A Groundwater Analytical Results (1996)

Station: / Sample ID: / Screened Interval (ft BGS): / Collection Date: / Units:	Federal SDWA MCLs[1] (µg/L)	In-Stream Water Quality Standards[2] (µg/L)	P2-MW04 HT4-MW04 6.0 - 16.0 12/09/1996 (µg/L)	P2-MW05 HT4-MW05 7.5 - 17.5 12/09/1996 (µg/L)	P2-MW06 HT4-MW06 7.5 - 17.5 12/09/1996 (µg/L)	P2-MW10 HT4-MW10 5.0 - 15.0 12/10/1996 (µg/L)
VOLATILE ORGANIC COMPOUNDS						
Benzene	5	71	1 U	2400 =	740 =	260 J
Toluene	1000	200,000	1 U	280 =	2300 =	25 U
Ethylbenzene	700	28,718	1 U	840 =	770 =	580 J
Xylenes	10000	NRC	2 U	870 =	2900 =	720 J
MTBE			10 U	500 U	1000 U	250 U
POLYNUCLEAR AROMATIC HYDROCARBONS						
1-Methylnaphthalene	NRC	NRC	1 U	1 U	5 U	1 U
2-Methlynaphthalene	NRC	NRC	1 U	1 U	5 U	1 U
Acenaphthene	NRC	NRC	1 U	1 U	5 U	1 U
Acenaphthylene	NRC	NRC	1 U	1.2 =	5 U	2.3 =
Anthracene	NRC	110,000	0.2 U	1.5 =	1 U	0.2 U
Benoz(a)anthracene	NRC	0.0311	0.2 U	0.2 U	1 U	0.2 U
Benzo(a)pyrene	0.2	0.0311	0.2 U	0.2 U	1.0 U	0.2 U
Benzo(b)fluoranthene	NRC	NRC	0.2 U	0.2 U	1.0 U	0.2 U
Benzo(g,h,i)perylene	NRC	NRC	0.5 U	0.5 U	2.5 U	0.5 U
Benzo(k)fluoranthene	NRC	0.0311	0.5 U	0.5 U	2.5 U	0.5 U
Chrysene	NRC	0.0311	0.2 U	0.2 U	1.0 U	0.2 U
Dibenzo(a,h)anthracene	NRC	0.0311	1 U	1 U	5 U	1 U
Fluoranthene	NRC	370	0.5 U	2.1 J	2.5 U	0.5 U
Fluorene	NRC	14,000	0.5 U	3.2 J	2.5 U	0.5 U
Indeno(1,2,3-cd)pyrene	NRC	0.0311	0.5 U	0.5 U	2.5 U	0.5 U
Naphthalene	NRC	NRC	1 U	15 =	79.0 =	9.8 =
Phenanthrene	NRC	NRC	0.2 U	8 J	1.0 U	0.36 J
Pyrene	NRC	11,000	0.5 U	1.6 J	2.5 U	0.5 U

NOTES:

[1] U.S. Environmental Protection Agency maximum contaminant level

[2] GA EPD in-stream water quality standards (Chapter 391-03-6.03)

Laboratory Qualifiers

- U — Indicates the compound was not detected at the concentration reported.
- UJ — Indicates the compound was not detected above an approximated sample quantitation limit.
- J — Indicates the value for the compound is an estimated value.
- = — Indicates the compound was detected at the concentration reported.
- R — Indicates the result was rejected during the data validation process.

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& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S6-87284
Received: 10 DEC 96
Reported: 13 JAN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA48/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-28	HT4-EB01*CS*MW01	12-09-96/1445	HAA48
87284-29	HT4-MW01*CS*MW01	12-09-96/1445	HAA48
87284-30	HT4-MW02*CS*MW02	12-09-96/1510	HAA48
87284-31	HT4-MW03*CS*MW03	12-09-96/1525	HAA48
87284-32	HT4-MW04*CS*MW04 } Pumphouse #2	12-09-96/1600	HAA48

PARAMETER	87284-28	87284-29	87284-30	87284-31	87284-32
Purgeable Aromatics (8020)					
Benzene, ug/l	<1.0	<500	1100	740	<1.0
Toluene, ug/l	<1.0	16000	25000	19000	<1.0
Ethylbenzene, ug/l	<1.0	1900	1400	2000	<1.0
Xylenes, ug/l	<2.0	9500	5900	7400	<2.0
Methyl tert-butyl ether (MTBE), ug/l	<10	<5000	<5000	<5000	<10
Surrogate - F3-Toluene	117%	93%	80%	107%	147%
PF Code	T	T	T	T	T
Dilution factor	1.0	500.0	500.0	500.0	1.0
Batch ID	1216A	1216A	1216A	1216A	1216A
Preparation Date	12.17.96	12.20.96	12.20.96	12.20.96	12.17.96
Preparation Time	1640	0322	0133	0227	1735
Analysis Time	1640	0322	0133	0227	1735
Date Analyzed	12.17.96	12.20.96	12.20.96	12.20.96	12.17.96
RES Code	BR01	PP01	PP01	PP01	PP01
Initial Volume/Weight	25	25	25	25	25
Final Extraction Volume (FV1)	25	25	25	25	25
Clock ID	1E1217	1E1219	1E1219	1E1219	1E1217

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87284-29	HT4-MW01*CS*MW01	12-09-96/1445	HAA48
87284-30	HT4-MW02*CS*MW02	12-09-96/1510	HAA48
87284-31	HT4-MW03*CS*MW03	12-09-96/1525	HAA48
87284-32	HT4-MW04*CS*MW04 } Pump House #2	12-09-96/1600	HAA48

PARAMETER	87284-28	87284-29	87284-30	87284-31	87284-32
Polynuclear Aromatic HC (8310)					
Acenaphthene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene, ug/l	<0.20	<0.20	<0.20	0.21	<0.20
Benzo(g,h,i)perylene, ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
Benzo(b)fluoranthene, ug/l	<0.20	<0.20	<0.20	0.28	<0.20
Benzo(k)fluoranthene, ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
Chrysene, ug/l	<0.20	<0.20	<0.20	0.26	<0.20
Benzo(a)anthracene, ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Fluoranthene, ug/l	<0.50	0.60	<0.50	0.76X	<0.50
Fluorene, ug/l	<0.50	0.60	<0.50	<0.50	<0.50
Indeno(1,2,3-cd)pyrene, ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
Dibenzo(a,h)anthracene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene, ug/l	<1.0	16	7.0X	9.2X	<1.0
Phenanthrene, ug/l	<0.20	2.2	<0.20	0.42	<0.20
Anthracene, ug/l	<0.20	0.58X	<0.20	<0.20	<0.20
Pyrene, ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
1-Methylnaphthalene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylnaphthalene, ug/l	<1.0	2.8	1.3X	1.9X	<1.0
Surrogate - Terphenyl-d14	96 %	100 %	104 %	104 %	85 %

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Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-28	HT4-EB01*CS*MW01	12-09-96/1445	HAA48
87284-29	HT4-MW01*CS*MW01	12-09-96/1445	HAA48
87284-30	HT4-MW02*CS*MW02	12-09-96/1510	HAA48
87284-31	HT4-MW03*CS*MW03	12-09-96/1525	HAA48
87284-32	HT4-MW04*CS*MW04} Pumphouse #2	12-09-96/1600	HAA48

PARAMETER	87284-28	87284-29	87284-30	87284-31	87284-32
PF Code	T	T	T	T	T
Initial Volume/Weight	950	970	950	960	950
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	1213J	1213J	1213J	1213J	1213J
Preparation Date	12.13.96	12.13.96	12.13.96	12.13.96	12.13.96
Preparation Time	1550	1550	1550	1550	1550
Analysis Time	1723	1824	1925	2026	2127
Date Analyzed	12.18.96	12.18.96	12.18.96	12.18.96	12.18.96
RES Code	BR01	PP01	PP01	PP01	PP01
Instrument ID	SGALC	SGALC	SGALC	SGALC	SGALC

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Project: HAA48/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-33	HT4-MW50*CS*MW04	12-09-96/1600	HAA48
87284-34	HT4-MW05*CS*MW05	12-09-96/1615	HAA48
87284-35	HT4-MW06*CS*MW06	12-09-96/1630	HAA48
87284-35-DL	HT4-MW06*CS*MW06	12-09-96/1630	HAA48

Pumphouse #2

PARAMETER	87284-33	87284-34	87284-35	87284-35-DL
Purgeable Aromatics (8020)				
Benzene, ug/l	<1.0	2400	740	
Toluene, ug/l	<1.0	280	2300	
Ethylbenzene, ug/l	<1.0	840	770	
Xylenes, ug/l	<2.0	870	2900	
Methyl tert-butyl ether (MTBE), ug/l	<10	<500	<1000	
Surrogate - F3-Toluene	127%	87%	93%	
PF Code	T	T	T	
Dilution factor	1.0	50.0	100.0	
Batch ID	1216A	1216A	1216A	
Preparation Date	12.17.96	12.19.96	12.20.96	
Preparation Time	1830	2343	0038	
Analysis Time	1830	2343	0038	
Date Analyzed	12.17.96	12.19.96	12.20.96	
RES Code	PD01	PP01	PP01	
Initial Volume/Weight	25	25	25	
Final Extraction Volume (FV1)	25	25	25	
Clock ID	1E1217	1E1219	1E1219	

↑ DUPLICATE

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Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-33	HT4-MW50*CS*MW04 } Pumphouse #2	12-09-96/1600	HAA48
87284-34	HT4-MW05*CS*MW05	12-09-96/1615	HAA48
87284-35	HT4-MW06*CS*MW06	12-09-96/1630	HAA48
87284-35-DL	HT4-MW06*CS*MW06	12-09-96/1630	HAA48

PARAMETER	87284-33	87284-34	87284-35	87284-35-DL
Polynuclear Aromatic HC (8310)				
Acenaphthene, ug/l	<1.0	<1.0	<1.0*F42	<5.0
Acenaphthylene, ug/l	<1.0	1.2	<1.0	<5.0
Benzo(a)pyrene, ug/l	<0.20	<0.20	<0.20	<1.0
Benzo(g,h,i)perylene, ug/l	<0.50	<0.50	<0.50	<2.5
Benzo(b)fluoranthene, ug/l	<0.20	<0.20	<0.20	<1.0
Benzo(k)fluoranthene, ug/l	<0.50	<0.50	<0.50	<2.5
Chrysene, ug/l	<0.20	<0.20	<0.20	<1.0
Benzo(a)anthracene, ug/l	<0.20	<0.20	<0.20	<1.0
Fluoranthene, ug/l	<0.50	2.1	4.0	<2.5
Fluorene, ug/l	<0.50	3.2X	2.9	<2.5
Indeno(1,2,3-cd)pyrene, ug/l	<0.50	<0.50	<0.50	<2.5
Dibenzo(a,h)anthracene, ug/l	<1.0	<1.0	<1.0	<5.0
Naphthalene, ug/l	<1.0	15	62	79
Phenanthrene, ug/l	<0.20	8.0	8.4	<1.0
Anthracene, ug/l	<0.20	1.5X	1.6	<1.0
Pyrene, ug/l	<0.50	1.6X	1.8	<2.5
1-Methylnaphthalene, ug/l	<1.0	<1.0	<1.0	<5.0
2-Methylnaphthalene, ug/l	<1.0	<1.0	5.4	<5.0
Surrogate - Terphenyl-d14	92 %	85 %	100 %	28 %
PF Code	T	T	T	T

DUPLICATE

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1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA48/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-33	HT4-MW50*CS*MW04	12-09-96/1600	HAA48
87284-34	HT4-MW05*CS*MW05	12-09-96/1615	HAA48
87284-35	HT4-MW06*CS*MW06	12-09-96/1630	HAA48
87284-35-DL	HT4-MW06*CS*MW06	12-09-96/1630	HAA48

Pumphouse # 2

PARAMETER	87284-33	87284-34	87284-35	87284-35-DL
Initial Volume/Weight	940	960	930	930
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0
Dilution factor	1.0	1.0	1.0	5.0
Batch ID	1213J	1213J	1213J	1213J
Preparation Date	12.13.96	12.13.96	12.13.96	12.13.96
Preparation Time	1550	1550	1550	1550
Analysis Time	2229	2330	0334	2325
Date Analyzed	12.18.96	12.18.96	12.19.96	12.29.96
RES Code	PD01	PP01	PP01	PP02
Instrument ID	SGALC	SGALC	SGALC	SGALC

DUPLICATE

SL ***SAVANNAH LABORATORIES***
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S6-87284
Received: 10 DEC 96
Reported: 13 JAN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA48/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-36	HT4-MW07*CS*MW07	12-09-96/1710	HAA48
87284-37	HT4-MW08*CS*MW08	12-09-96/1730	HAA48
87284-38	HT4-MW51*CS*MW08	12-09-96/1730	HAA48
87284-39	HT4-MW09*CS*MW09	12-10-96/0805	HAA48
87284-40	HT4-MW10*CS*MW10} Pump House #2	12-10-96/0830	HAA48

PARAMETER	87284-36	87284-37	87284-38	87284-39	87284-40
Purgeable Aromatics (8020)					
Benzene, ug/l	1.3	<5.0	<5.0	<5.0	260
Toluene, ug/l	5.2	<5.0	<5.0	<5.0	<25
Ethylbenzene, ug/l	7.7	46	64	47	580
Xylenes, ug/l	8.4	530	710	330	720
Methyl tert-butyl ether (MTBE), ug/l	<10	<50	<50	<50	<250
Surrogate - F3-Toluene	87%	80%	80%	87%	187%*F53
PF Code	T	T	T	T	T
Dilution factor	1.0	5.0	5.0	5.0	25.0
Batch ID	1216A	1216A	1216A	1216A	1216A
Preparation Date	12.17.96	12.18.96	12.18.96	12.18.96	12.18.96
Preparation Time	1925	0000	0150	0055	2256
Analysis Time	1925	0000	0150	0055	2256
Date Analyzed	12.17.96	12.18.96	12.18.96	12.18.96	12.18.96
RES Code	PP01	PP01	PD01	PP01	PP01
Initial Volume/Weight	25	25	25	25	25
Final Extraction Volume (FV1)	25	25	25	25	25
Clock ID	1E1217	1E1217	1E1217	1E1217	1E1218

SL **SAVANNAH LABORATORIES**
& ENVIRONMENTAL SERVICES, INC.

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Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-36	HT4-MW07*CS*MW07	12-09-96/1710	HAA48
87284-37	HT4-MW08*CS*MW08	12-09-96/1730	HAA48
87284-38	HT4-MW51*CS*MW08	12-09-96/1730	HAA48
87284-39	HT4-MW09*CS*MW09	12-10-96/0805	HAA48
87284-40	HT4-MW10*CS*MW10} Pump House #2	12-10-96/0830	HAA48

PARAMETER	87284-36	87284-37	87284-38	87284-39	87284-40
Polynuclear Aromatic HC (8310)					
Acenaphthene, ug/l	<1.0	<2.0	<2.0	<5.0	<1.0
Acenaphthylene, ug/l	<1.0	<2.0	<2.0	<5.0	2.3
Benzo(a)pyrene, ug/l	<0.20	<0.40	<0.40	<1.0	<0.20
Benzo(g,h,i)perylene, ug/l	<0.50	<1.0	<1.0	<2.5	<0.50
Benzo(b)fluoranthene, ug/l	<0.20	<0.40	<0.40	<1.0	<0.20
Benzo(k)fluoranthene, ug/l	<0.50	<1.0	<1.0	<2.5	<0.50
Chrysene, ug/l	<0.20	<0.40	<0.40	<1.0	<0.20
Benzo(a)anthracene, ug/l	<0.20	<0.40	<0.40	<1.0	<0.20
Fluoranthene, ug/l	4.9	<1.0	<1.0	<2.5	<0.50
Fluorene, ug/l	2.2	<1.0	<1.0	0.76X	<0.50
Indeno(1,2,3-cd)pyrene, ug/l	<0.50	<1.0	<1.0	<2.5	<0.50
Dibenzo(a,h)anthracene, ug/l	<1.0	<2.0	<2.0	<5.0	<1.0
Naphthalene, ug/l	1.8	20	20	66	9.8X
Phenanthrene, ug/l	11	<0.40	<0.40	1.5X	0.36
Anthracene, ug/l	2.1X	<0.40	<0.40	<1.0	<0.20
Pyrene, ug/l	2.4	<1.0	<1.0	<2.5	<0.50
1-Methylnaphthalene, ug/l	1.9X	12X	12X	26X	<1.0
2-Methylnaphthalene, ug/l	<1.0	29	30	53	<1.0
Surrogate - Terphenyl-d14	85 %	69 %	81 %	62 %	42 %

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& ENVIRONMENTAL SERVICES, INC.

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Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA48/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-36	HT4-MW07*CS*MW07	12-09-96/1710	HAA48
87284-37	HT4-MW08*CS*MW08	12-09-96/1730	HAA48
87284-38	HT4-MW51*CS*MW08	12-09-96/1730	HAA48
87284-39	HT4-MW09*CS*MW09	12-10-96/0805	HAA48
87284-40	HT4-MW10*CS*MW10} PUMPHOUSE #2	12-10-96/0830	HAA48

PARAMETER	87284-36	87284-37	87284-38	87284-39	87284-40
PF Code	T	T	T	T	T
Initial Volume/Weight	940	980	980	980	980
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Dilution factor	1.0	2.0	2.0	5.0	1.0
Batch ID	1213J	1213J	1213J	1213J	1213J
Preparation Date	12.13.96	12.13.96	12.13.96	12.13.96	12.13.96
Preparation Time	1550	1550	1550	1550	1550
Analysis Time	0436	0026	0127	0228	2350
Date Analyzed	12.19.96	12.30.96	12.30.96	12.30.96	12.20.96
RES Code	PP01	PP01	PD01	PP01	PP01
Instrument ID	SGALC	SGALC	SGALC	SGALC	SGALC

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter 4
PROJECT NO: 019457 4102
LABORATORY ID: SLS
SAMPLER(S) NAME: G. Rowell

TASK ORDER NO.
SAMPLE EVENT: Well Sampling
PROGRAM TYPE:
SAMPLER(S) SIGNATURE: G. Rowell

DATE	TIME MILITARY	MATRIX (SAMPLE TYPE)	FIELD SAMPLE ID	SITE ID	RESULT CODE	DEPTH (FT)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)	FILTERED (L) LAB (F) FIELD
12-9	1445	W	HT4-TB01	MW01	BT01		3	Y	N
	1445	W	HT4-EB01	MW01	BR01		3	Y	N
	1445	W	HT4-MW01	MW01	PP01		3	Y	N
	1510	W	HT4-MW02	MW02	PP01		3	Y	N
	1525	W	HT4-MW03	MW03	PP01		3	Y	N
	1600	W	HT4-MW04	MW04	PP01		3	Y	N
	1600	W	HT4-MW50	MW04	PD01		3	Y	N
	1615	W	HT4-MW05	MW05	PP01		3	Y	N
	1630	W	HT4-MW06	MW06	PP01		3	Y	N
	1710	W	HT4-MW07	MW07	PP01		9 ~~3~~	Y	N
	1730	W	HT4-MW08	MW08	PP01		3	Y	N
	1730	W	HT4-MW51	MW08	PD01		3	Y	N

ANALYTICAL PARAMETERS/METHODS

VOCS	SVOC	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO	GRO
Method No. 8020							
X							
X							
X							
X							
X							
X							
X							
X							
X							
X							
X							

Relinquished by: (Signature) G. Rowell
Date/Time: 12-10-96/1810
Received by: SG-87284
Date/Time: 12/10/96 1810

Remarks: X MS/MSD

Cooler Temperature:

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER
STORED/SHIPPED IN ICE (Y)/N

Send Results to:
Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

AIRBILL CO.
TRACKING NO:

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter 1
PROJECT NO: 019457.4102
LABORATORY ID: SLS
SAMPLER(S) NAME: G. Rowell

TASK ORDER NO.
SAMPLE EVENT: Well Sampling
PROGRAM TYPE:
SAMPLER(S) SIGNATURE: G. Rowell

QA	TIME (MILITARY)	MATRIX (SAM)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT)	NO. OF CONTS	STANDARD PRESERV. (Y/N)	FILTERED (L) LAB (F) FIELD
		W	Temp Blank				1	/	
12-10	0805	W	HT4-MW09	MW09	PP01		3	Y	N
	0830	W	HT4-MW10	MW10	PP01		3	Y	N
	0850	W	HT4-MW11	MW11	PP01		3	Y	N
	0910	W	HT4-MW12	MW12	PP01		3	Y	N
	1030	W	HT4-SW01	SW01	PP01		3	Y	N
	1100	W	HT4-SW10	SW10	PP01		3	Y	N
	1115	W	HT4-SW09	SW09	PP01		3	Y	N
*	1315	W	HT4-SW02	SW02	PP01		9	Y	N
	1350	W	HT4-SW08	SW08	PP01		3	Y	N
	1415	W	HT4-SW07	SW07	PP01		3	Y	N
	1430	W	HT4-SW52	SW06	PD01		3	Y	N

ANALYTICAL PARAMETERS/METHODS

Method No.	VOCs	SVOC	METALS ICP / CVAA / GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO	GRO	
	8020			1					
	X								
	X								
	X								
	X								
	X								
	X								
	X								
	X								
	X								

Cooler Temperature: 2.0°C

Relinquished by: (Signature) G. Rowell Date/Time: 12-10-96/1810
Received by: Date/Time: 12/10/96 6:00

Remarks: * MS/MSD

AIRBILL CO.
TRACKING NO:

Send Results to:
Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-0010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(I) HCl/VOC
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER
STORED/SHIPPED IN ICE Y/N

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter 4

PROJECT NO: 019457 4102

LABORATORY ID: SLS

SAMPLER(S) NAME: G. Rowell

TASK ORDER NO.

SAMPLE EVENT: Well Sampling

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: G. Rowell

DATE	TIME (MILITARY)	MATRIX (SAS)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT)	NO. OF CONTS	STANADARD PRESERV (Y/N)	FILTERED (L) LAB (P) FIELD
12-9	1445	W	HT4-EB01	mw01	BR01		2	N	N
	1445	W	HT4-mw01	mw01	PP01		2	N	N
	1510	W	HT4-mw02	mw02	PP01		12	N	N
	1525	W	HT4-mw03	mw03	PP01		2	N	N
	1600	W	HT4-mw04	mw04	PP01		2	N	N
	1600	W	HT4-mw50	mw04	PD01		2	N	N
			Temp Blank						

ANALYTICAL PARAMETERS/METHODS

VOCs	SVOC	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO	GRO	
Method No.	8310							
	X							
	X							
	X							
	X							
	X							

Relinquished by: (Signature) G. Rowell

Date/Time: 12-10-96/1810

Received by: SO-86284 G. Campbell

Date/Time: 0:10 12/10/96

Cooler Temperature: 4°C

Remarks:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

AIRBILL CO.

TRACKING NO:

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER

STORED/SHIPPED IN ICE Y/N

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter 4

PROJECT NO: 01945.7.4102

LABORATORY ID: SLS.

SAMPLER(S) NAME: G. Rowell

TASK ORDER NO.

SAMPLE EVENT: Well Sampling

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: G. Rowell

	DATE	TIME (MILITARY)	MATRIX (S,W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS	STANDARD PRESERV (Y/N)	FILTERED (Y) LAB (F) FIELD
	12-9	1615	W	HT4-MW05	MW05	PP01		2	N	N
		1630	W	HT4-MW06	MW06	PP01		2	N	N
*		1710	W	HT4-MW07	MW07	PP01		16	N	N
	↓	1730	W	HT4-MW08	MW08	PP01		2	N	N
				Temp Blank						

ANALYTICAL PARAMETERS/METHODS

Method No.

VOCS	SVOC	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO	GRO
	8310						
X							
X							
X							
X							

Relinquished by: (Signature) G. Rowell Date/Time: 12-10-96/1810

Received by: SE-87284 (A) Date/Time: 12/10/96 16:10

Cooler Temperatures:

Remarks: X - MS/MSD

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

AIRBILL CO.

TRACKING NO:

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER

STORED/SHIPPED IN ICE (Y)/N

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter 4

PROJECT NO: 019457 410.2

LABORATORY ID: SLS

SAMPLER(S) NAME: G. Rowell

TASK ORDER NO.

SAMPLE EVENT: Well Sampling

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: G. Rowell

ANALYTICAL PARAMETERS/METHODS

DATE	TIME (MILITARY)	MATRIX (S,W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT)	NO. OF CONTS	STANDARD PRESERV. (Y/N)	FILTERED (L) LAB (F) FIELD	VOCs	SVOC 8310	METALS ICP / Hg CVAA / GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO	GRO	
12-10		W	Temp Blank															
	0805	W	HT4-MW09	MW09	PP01		2	N	N		X							
	0830	W	HT4-MW10	MW10 ~~DUP~~ OR	PP01		2	N	N		X							
	0850	W	HT4-MW11	MW11 ~~DUP~~ OR	PP01		2	N	N		X							
	0910	W	HT4-MW12	MW12	PP01		2	N	N		X							
12-9	1730	W	HT4-MW51	MW08	PD01		2	N	N		X							
12-10	1030	W	HT4-SW01	SW01	PP01		2	N	N									

Method No.

Cooler Temperature:

Relinquished by: (Signature) G. Rowell

Date/Time: 12-10-96/1810

Received by: 56-87284 (D)

Date/Time: 12/10/96 1810

Remarks:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

AIRBILL CO.

TRACKING NO:

STANDARD PRESERVATION (Y):

(H) HCl/VOC
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER

STORED/SHIPPED IN ICE (Y)/N

CAP-PART A
SURFACE WATER ANALYTICAL RESULTS
DECEMBER 1996

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Table VIII-B. Summary of CAP-Part A Surface Water Analytical Results (1996)

Station: Sample ID: Collection Date: Units:	In-Stream Water Quality Standards[1] (µg/L)	P2-SWE03 HT4-SW03 12/10/1996 (µg/L)	P2-SWE04 HT4-SW04 12/10/1996 (µg/L)	P2-SWE05 HT4-SW05 12/10/1996 (µg/L)	P2-SWE06 HT4-SW06 12/10/1996 (µg/L)
VOLATILE ORGANIC COMPOUNDS					
Benzene	71	3.5 J	1 U	1 U	2 J
Toluene	200,000	7.4 J	1 U	1 U	1.4 J
Ethylbenzene	28,718	2.9 J	1 U	1 U	1 U
Xylenes	NRC	14 =	2 U	2 U	7.5 J
MTBE		10 U	10 U	10 U	10 U
POLYNUCLEAR AROMATIC HYDROCARBONS					
1-Methylnaphthalene	NRC	1 U	1 U	1 U	1 U
2-Methlynaphthalene	NRC	1 U	1 U	1 U	1 U
Acenaphthene	NRC	1 U	1 U	1 U	1 U
Acenaphthylene	NRC	1 U	1 U	1 U	1 U
Anthracene	110,000	0.2 U	0.2 U	0.2 U	0.2 U
Benzo(a)anthracene	0.0311	0.2 U	0.2 U	0.2 U	0.2 U
Benzo(a)pyrene	0.0311	0.2 U	0.2 U	0.2 U	0.2 U
Benzo(b)fluoranthene	NRC	0.2 U	0.2 U	0.2 U	0.2 U
Benzo(g,h,i)perylene	NRC	0.5 U	0.5 U	0.5 U	0.5 U
Benzo(k)fluoranthene	0.0311	0.5 U	0.5 U	0.5 U	0.5 U
Chrysene	0.0311	0.2 U	0.2 U	0.2 U	0.2 U
Dibenzo(a,h)anthracene	0.0311	1 U	1 U	1 U	1 U
Fluoranthene	370	0.5 U	0.5 U	0.2 U	0.5 U
Fluorene	14,000	0.5 U	0.5 U	0.2 U	0.5 U
Indeno(1,2,3-cd)pyrene	0.0311	0.5 U	0.5 U	0.2 U	0.5 U
Naphthalene	NRC	1 U	1 U	1 U	1 U
Phenanthrene	NRC	0.2 U	0.2 U	0.2 U	0.2 U
Pyrene	11,000	0.5 U	0.5 U	0.2 U	0.5 U

NOTES:

[1] GA EPD IWQS (Chapter 391-03-6.03)

Laboratory Qualifiers

- U — Indicates the compound was not detected at the concentration reported.
- UJ — Indicates the compound was not detected above an approximated sample quantitation limit.
- J — Indicates the value for the compound is an estimated value.
- = — Indicates the compound was detected at the concentration reported.
- R — Indicates the result was rejected during the data validation process.

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SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S6-87284
Received: 10 DEC 96
Reported: 13 JAN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA48/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-46	HT4-SW02*CS*SW02	12-10-96/1315	HAA48
87284-47	HT4-SW08*CS*SW08 } PUMPHOUSE # 1	12-10-96/1350	HAA48
87284-48	HT4-SW07*CS*SW07 }	12-10-96/1415	HAA48
87284-49	HT4-SW52*CS*SW06 } PUMPHOUSE #2	12-10-96/1430	HAA48
87284-50	HT4-SW06*CS*SW06 }	12-10-96/1430	HAA48

PARAMETER	87284-46	87284-47	87284-48	87284-49	87284-50
Purgeable Aromatics (8020)					
Benzene, ug/l	<1.0	5.2	19	1.9	2.0
Toluene, ug/l	<1.0	50	230	1.5	1.4
Ethylbenzene, ug/l	<1.0	3.8	30	<1.0	<1.0
Xylenes, ug/l	1.1	55	270	6.0	7.5
Methyl tert-butyl ether (MTBE), ug/l	<10	<20	<100	<10	<10
Surrogate - F3-Toluene	127%	97%	133%	115%	107%
PF Code	T	T	T	T	T
Dilution factor	1.0	2.0	10.0	1.0	1.0
Batch ID	1210C	1210C	1210C	1210C	1210C
Preparation Date	12.16.96	12.17.96	12.17.96	12.16.96	12.16.96
Preparation Time	1752	1625	1723	2245	2343
Analysis Time	1752	1625	1723	2245	2343
Date Analyzed	12.16.96	12.17.96	12.17.96	12.16.96	12.16.96
RES Code	PP01	PP01	PP01	PD01	PP01
Initial Volume/Weight	25	25	25	25	25
Final Extraction Volume (FV1)	25	25	25	25	25
Clock ID	1A1216	1A1217	1A1217	1A1216	1A1216

↑ DUPLICATE

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S6-87284
Received: 10 DEC 96
Reported: 13 JAN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA48/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-46	HT4-SW02*CS*SW02	12-10-96/1315	HAA48
87284-47	HT4-SW08*CS*SW08 } Pump House #1	12-10-96/1350	HAA48
87284-48	HT4-SW07*CS*SW07 }	12-10-96/1415	HAA48
87284-49	HT4-SW52*CS*SW06 } Pump House #2	12-10-96/1430	HAA48
87284-50	HT4-SW06*CS*SW06 }	12-10-96/1430	HAA48

PARAMETER	87284-46	87284-47	87284-48	87284-49	87284-50
Polynuclear Aromatic HC (8310)					
Acenaphthene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene, ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Benzo(g,h,i)perylene, ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
Benzo(b)fluoranthene, ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Benzo(k)fluoranthene, ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
Chrysene, ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Benzo(a)anthracene, ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Fluoranthene, ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
Fluorene, ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
Indeno(1,2,3-cd)pyrene, ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
Dibenzo(a,h)anthracene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene, ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Anthracene, ug/l	<0.20	<0.20	<0.20	<0.20	<0.20
Pyrene, ug/l	<0.50	<0.50	<0.50	<0.50	<0.50
1-Methylnaphthalene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
2-Methylnaphthalene, ug/l	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate - Terphenyl-d14	96 %	96 %	100 %	92 %	92 %

↑ DUPLICATE

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& ENVIRONMENTAL SERVICES, INC.

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Reported: 13 JAN 97

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Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA48/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-46	HT4-SW02*CS*SW02	12-10-96/1315	HAA48
87284-47	HT4-SW08*CS*SW08 } PUMPHOUSE #1	12-10-96/1350	HAA48
87284-48	HT4-SW07*CS*SW07 }	12-10-96/1415	HAA48
87284-49	HT4-SW52*CS*SW06 } PUMPHOUSE #2	12-10-96/1430	HAA48
87284-50	HT4-SW06*CS*SW06 }	12-10-96/1430	HAA48

PARAMETER	87284-46	87284-47	87284-48	87284-49	87284-50
PF Code	T	T	T	T	T
Initial Volume/Weight	920	1000	960	980	999
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	1213K	1213K	1213K	1213K	1213K
Preparation Date	12.13.96	12.13.96	12.13.96	12.13.96	12.13.96
Preparation Time	1550	1550	1550	1550	1550
Analysis Time	1017	0557	0410	0511	0612
Date Analyzed	12.28.96	12.21.96	12.28.96	12.28.96	12.28.96
RES Code	PP01	PP01	PP01	PD01	PP01
Instrument ID	SGALC	SGALC	SGALC	SGALC	SGALC

↑ DUPLICATE

SL **SAVANNAH LABORATORIES**
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S6-87284
Received: 10 DEC 96
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Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA48/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-51	HT4-SW04*CS*SW04 } Pump House #2	12-10-96/1500	HAA48
87284-52	HT4-SW03*CS*SW03 } Pump House #2	12-10-96/1515	HAA48
87284-53	HT4-SW05*CS*SW05 } Pump House #2	12-10-96/1530	HAA48

PARAMETER	87284-51	87284-52	87284-53
Purgeable Aromatics (8020)			
Benzene, ug/l	<1.0	3.5	<1.0
Toluene, ug/l	<1.0	7.4	<1.0
Ethylbenzene, ug/l	<1.0	2.9	<1.0
Xylenes, ug/l	<2.0	14	<2.0
Methyl tert-butyl ether (MTBE), ug/l	<10	<10	<10
Surrogate - F3-Toluene	113%	120%	103%
PF Code	T	T	T
Dilution factor	1.0	1.0	1.0
Batch ID	1210C	1210C	1210C
Preparation Date	12.16.96	12.16.96	12.16.96
Preparation Time	2048	2146	1851
Analysis Time	2048	2146	1851
Date Analyzed	12.16.96	12.16.96	12.16.96
RES Code	PP01	PP01	PP01
Initial Volume/Weight	25	25	25
Final Extraction Volume (FV1)	25	25	25
Clock ID	1A1216	1A1216	1A1216

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Received: 10 DEC 96
Reported: 13 JAN 97

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Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA48/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-51	HT4-SW04*CS*SW04 } Pump House #2	12-10-96/1500	HAA48
87284-52	HT4-SW03*CS*SW03	12-10-96/1515	HAA48
87284-53	HT4-SW05*CS*SW05	12-10-96/1530	HAA48

PARAMETER	87284-51	87284-52	87284-53
Polynuclear Aromatic HC (8310)			
Acenaphthene, ug/l	<1.0	<1.0	<1.0
Acenaphthylene, ug/l	<1.0	<1.0	<1.0
Benzo(a)pyrene, ug/l	<0.20	<0.20	<0.20
Benzo(g,h,i)perylene, ug/l	<0.50	<0.50	<0.50
Benzo(b)fluoranthene, ug/l	<0.20	<0.20	<0.20
Benzo(k)fluoranthene, ug/l	<0.50	<0.50	<0.50
Chrysene, ug/l	<0.20	<0.20	<0.20
Benzo(a)anthracene, ug/l	<0.20	<0.20	<0.20
Fluoranthene, ug/l	<0.50	<0.50	<0.50
Fluorene, ug/l	<0.50	<0.50	<0.50
Indeno(1,2,3-cd)pyrene, ug/l	<0.50	<0.50	<0.50
Dibenzo(a,h)anthracene, ug/l	<1.0	<1.0	<1.0
Naphthalene, ug/l	<1.0	<1.0	<1.0
Phenanthrene, ug/l	<0.20	<0.20	<0.20
Anthracene, ug/l	<0.20	<0.20	<0.20
Pyrene, ug/l	<0.50	<0.50	<0.50
1-Methylnaphthalene, ug/l	<1.0	<1.0	<1.0
2-Methylnaphthalene, ug/l	<1.0	<1.0	<1.0
Surrogate - Terphenyl-d14	92 %	100 %	88 %
PF Code	T	T	T
Initial Volume/Weight	960	940	940

SL SAVANNAH LABORATORIES
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LOG NO: S6-87284
Received: 10 DEC 96
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Atlanta, GA 30361

Client PO. No.: 90534

Project: HAA48/019457-4102/HUNTER IV/TO#18//
Sampled By: Client
Code: 165170113

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
87284-51	HT4-SW04*CS*SW04 } Pump House #2	12-10-96/1500	HAA48
87284-52	HT4-SW03*CS*SW03 }	12-10-96/1515	HAA48
87284-53	HT4-SW05*CS*SW05 }	12-10-96/1530	HAA48

PARAMETER	87284-51	87284-52	87284-53
Final Extraction Volume (FV1)	1.0	1.0	1.0
Dilution factor	1.0	1.0	1.0
Batch ID	1213K	1213K	1213K
Preparation Date	12.13.96	12.13.96	12.13.96
Preparation Time	1550	1550	1550
Analysis Time	0713	0815	0916
Date Analyzed	12.28.96	12.28.96	12.28.96
RES Code	PP01	PP01	PP01
Instrument ID	SGALC	SGALC	SGALC

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter Y
PROJECT NO: 01845741.02
LABORATORY ID: SLS
SAMPLER(S) NAME: G. Rowell

TASK ORDER NO.
SAMPLE EVENT: Week Sampling
PROGRAM TYPE:
SAMPLER(S) SIGNATURE: G. Rowell

ANALYTICAL PARAMETERS/METHODS

DATE	TIME (MILITARY)	MATRIX (S,W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS	STANDARD PRESERV. (Y/N)	FILTERED (L) LAB (F) FIELD	VOCs 8020	SVOC 8100	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO 8100m	GRO 8015m	PAH 8310
12/10		W	Temp Blank					!										
	1350	W	HT4-SW08	SW08	PP01		2	N	N									X
	1350	S	HT4-SE08	SE08	PP01		12	N	N	X	X					X	X	
	1415	W	HT4-SW07	SW07	PP01		2	N	N									X
	1415	S	HT4-SE07	SE07	PP01		2	N	N	X	X					X	X	
	1430	S	HT4-SE06	SE06	PP01		2	N	N	X	X					X	X	
	1430	S	HT4-SE53	SE06	PD01		2	N	N	X	X					X	X	
	1430	W	HT4-SE06	SW06	PP01		2	N	N									X
↓	1430	W	HT4-SE52	SW06	PD01		2	N	N									X

Relinquished by: (Signature) G. Rowell
Date/Time: 12-10-96/1810
Received by: [illegible]
Date/Time: 12/10/96 18:10
Cooler Temperature:

Remarks:

Send Results to:
Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

AIRBILL CO.
TRACKING NO:

STANDARD PRESERVATION (Y):
(H) HCl/VOC
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER
STORED/SHIPPED IN ICE (Y/N)

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter 4

PROJECT NO: 01945-7-4102

LABORATORY ID: SCS

SAMPLER(S) NAME: G. Rowell

TASK ORDER NO.

SAMPLE EVENT: Well Sampling

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: G. Rowell

DATE	TIME (MILITARY)	MATRIX (S,W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT)	NO. OF CONTS	STANDARD PRESERV (Y/N)	FILTERED (L) LAB (F) FIELD
12-10			TempBlank				2	N	N
	1500	W	HT4-SW04	SW04	PP01		12	N	N
	1500	S	HT4-SE04	SE04	PP01		2	N	N
	1515	W	HT4-SW03	SW03	PP01		2	N	N
	1515	S	HT4-SE03	SE03	PP01		2	N	N
	1530	W	HT4-SW05	SW05	PP01		2	N	N
	1530	S	HT4-SE05	SE05					

ANALYTICAL PARAMETERS/METHODS

Method No.

VOCs	SVOC	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO	GRO	PAH
8020	8100					8100m	8015m	8310
X	X					X	X	X
X	X					X	X	X
X	X					X	X	X

Relinquished by: (Signature) G. Rowell

Date/Time: 12-10-96/1810

Received by: Sl-87284 (G)

Date/Time: 12/10/96 6:10

Cooler Temperature:

Remarks:

AIRBILL CO.

TRACKING NO:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):

(H) HCl/VOC
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER

STORED/SHIPPED IN ICE Y/N

CAP-PART B
GROUNDWATER ANALYTICAL RESULTS
MAY 1997

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Table VIII-C. Summary of CAP-Part B Groundwater Analytical Results (1997)

Station:		In-Stream	P2-MW25	P2-MW26	P2-MW28	P2-MW29
Sample ID:	Federal	Water	MW2501	MW2601	MW2801	MW2901
Screened Interval (ft BGS):	SDWA	Quality	5.0 - 15.0	5.0 - 15.0	8.0 - 18.0	9.0 - 19.0
Collection Date:	MCLs[1]	Standards[2]	05/29/1997	05/29/1997	05/29/1997	05/29/1997
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
VOLATILE ORGANIC COMPOUNDS						
Benzene	5	71	60 =	1 U	40 J	1100 =
Toluene	1000	200,000	11 UJ	1 U	43 J	1500 =
Ethylbenzene	700	28,718	330 =	1 U	440 =	770 =
Xylene (total)	10000	NRC	1100 =	2 U	2600 =	3100 =
MTBE	NRC	NRC	110 UJ	10 U	110 UJ	220 UJ
POLYNUCLEAR AROMATIC HYDROCARBONS						
1-Methylnaphthalene	NRC	NRC	0.56 J	1 U	2 U	1 U
2-Methylnaphthalene	NRC	NRC	2.6 =	1 U	3.6 =	2.6 =
Acenaphthene	NRC	NRC	1 R	1 R	2 R	1 R
Acenaphthylene	NRC	NRC	1 U	1 U	2 U	1 U
Anthracene	NRC	110,000	0.2 U	0.2 U	0.64 J	0.57 J
Benzo(a)anthracene	NRC	0.0311	0.0311 U	0.0311 U	0.014 J	0.0311 U
Benzo(a)pyrene	0.2	0.0311	0.0311 U	0.0311 U	0.062 U	0.022 J
Benzo(b)fluoranthene	NRC	NRC	0.2 U	0.038 J	0.05 J	0.054 J
Benzo(g,h,i)perylene	NRC	NRC	0.5 U	0.5 U	1 U	0.5 U
Benzo(k)fluoranthene	NRC	0.0311	0.0311 U	0.0311 U	0.062 U	0.0311 U
Chrysene	NRC	0.0311	0.011 J	0.0072 J	0.023 J	0.05 =
Dibenzo(a,h)anthracene	NRC	0.0311	0.036 U	0.036 U	0.072 U	0.036 U
Fluoranthene	NRC	370	0.093 J	0.5 U	1.4 J	1.7 J
Fluorene	NRC	14,000	0.25 J	0.5 R	0.93 J	1.6 J
Indeno(1,2,3-cd)pyrene	NRC	0.0311	0.0311 U	0.0311 U	0.062 U	0.0311 U
Naphthalene	NRC	NRC	8 =	1 U	6 =	24 =
Phenanthrene	NRC	NRC	0.16 J	0.2 U	3.4 J	4 J
Pyrene	NRC	11,000	0.5 U	0.5 U	1 U	0.5 U
NATURAL ATTENUATION PARAMETERS						
Alkalinity (to pH 4.5) as CaCO3						
Ethane						
Ethene						
Iron, Ferrous +2			3100 =	1800 =		10000 =
Iron, Ferric +3			50 U	50 U		50 U
Iron, Total			2900 =	1800 =		7600 =
Methane						
Nitrate/Nitrite						
Oxidation Reduction Potential						
Oxygen, Dissolved			600 =	6200 =		4200 =
Sulfate as SO4			5000 U	13000 =		31000 =
Total Organic Carbon						

NOTES:

[1] U.S. Environmental Protection Agency maximum contaminant level

[2] GA EPD IWQS (Chapter 391-03-6.03)

Laboratory Qualifiers

- U — Indicates the compound was not detected at the concentration reported.
- UJ — Indicates the compound was not detected above an approximated sample quantitation limit.
- J — Indicates the value for the compound is an estimated value.
- = — Indicates the compound was detected at the concentration reported.
- R — Indicates the result was rejected during the data validation process.

Table VIII-C. Summary of CAP-Part B Groundwater Analytical Results (continued)

Station:		In-Stream	P2-MW30	P2-MW31	P2-MW32
Sample ID:	Federal	Water	MW3001	MW3101	MW3201
Screened Interval (ft BGS):	SDWA	Quality	9.0 - 19.0	8.0 - 18.0	30.0 - 35.0
Collection Date:	MCLs[1]	Standards[2]	05/29/1997	05/29/1997	05/29/1997
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
VOLATILE ORGANIC COMPOUNDS					
Benzene	5	71	24 J	61 =	2.6 =
Toluene	1000	200,000	500 =	1100 =	1 U
Ethylbenzene	700	28,718	240 =	970 =	2.2 =
Xylene (total)	10000	NRC	1400 =	4100 =	2.8 =
MTBE	NRC	NRC	55 UJ	110 UJ	10 U
POLYNUCLEAR AROMATIC HYDROCARBONS					
1-Methylnaphthalene	NRC		5 U	10 =	1 U
2-Methylnaphthalene	NRC		5 U	5 U	1 U
Acenaphthene	NRC	NRC	5 R	1.9 J	1 R
Acenaphthylene	NRC	NRC	5 U	5 U	1 U
Anthracene	NRC	110,000	0.91 J	1.2 J	0.015 J
Benzo(a)anthracene	NRC	0.0311	0.16 =	0.1 J	0.0311 U
Benzo(a)pyrene	0.2	0.0311	0.156 U	0.156 U	0.0311 U
Benzo(b)fluoranthene	NRC	NRC	1 U	1 U	0.2 U
Benzo(g,h,i)perylene	NRC	NRC	2.5 U	2.5 U	0.5 U
Benzo(k)fluoranthene	NRC	0.0311	0.156 U	0.156 U	0.0311 U
Chrysene	NRC	0.0311	0.18 =	0.12 J	0.0311 U
Dibenzo(a,h)anthracene	NRC	0.0311	0.18 U	0.18 U	0.036 U
Fluoranthene	NRC	370	5.9 J	3.7 J	0.5 U
Fluorene	NRC	14,000	1.7 J	2.4 J	0.5 R
Indeno(1,2,3-cd)pyrene	NRC	0.0311	0.156 U	0.156 U	0.0311 U
Naphthalene	NRC	NRC	8.2 =	9.2 =	1 U
Phenanthrene	NRC	NRC	7.6 J	7.5 J	0.16 J
Pyrene	NRC	11,000	2.9 =	1.9 J	0.12 J
NATURAL ATTENUATION PARAMETERS					
Alkalinity (to pH 4.5) as $CaCO_3$					
Ethane					
Ethene					
Iron, Ferrous +2				3400 =	
Iron, Ferric +3				500 =	
Iron, Total				3900 =	
Methane					
Nitrate/Nitrite					
Oxidation Reduction Potential					
Oxygen, Dissolved				4900 =	
Sulfate as SO_4				7800 =	
TOC					

NOTES:

[1] U.S. Environmental Protection Agency maximum contaminant level

[2] GA EPD IWQS (Chapter 391-03-6.03)

Laboratory Qualifiers

- U — Indicates the compound was not detected at the concentration reported.
- UJ — Indicates the compound was not detected above an approximated sample quantitation limit.
- J — Indicates the value for the compound is an estimated value.
- = — Indicates the compound was detected at the concentration reported.
- R — Indicates the result was rejected during the data validation process.

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S7-73006
Received: 29 MAY 97
Reported: 20 JUN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA67/019457-4102/HUNTER PUMPHOUSE/TO#18 & 18-01-»MOD//
Sampled By: Client
Code: 130570620

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
73006-1	MW3301*CS*MW33	05-29-97/1620	HAA67
73006-2	MW3501*CS*MW35	05-29-97/1640	HAA67
73006-3	MW3401*CS*MW34	05-29-97/1650	HAA67
73006-4	MW2501*CS*MW25 } Pump House #2	05-29-97/1700	HAA67
73006-5	MW2601*CS*MW26 }	05-29-97/1715	HAA67

PARAMETER	73006-1	73006-2	73006-3	73006-4	73006-5
Purgeable Aromatics (8020)					
Benzene, ug/l	9.1J	<1.0	11	60	<1.0
Toluene, ug/l	2.9J	<1.0	4.7J	<11J	<1.0
Ethylbenzene, ug/l	17	<1.0	110	330	<1.0
Xylenes, ug/l	370	<2.0	60	1100	<2.0
Methyl tert-butyl ether (MTBE), ug/l	<22J	<10	<22J	<110J	<10
Surrogate - F3-Toluene	110 %	103 %	113 %	100 %	100 %
PF Code	T	T	T	T	T
Dilution factor	10.0	1.0	10.0	50.0	1.0
Batch ID	0602A	0602A	0602A	0602A	0602A
Preparation Date	06.03.97	06.02.97	06.03.97	06.05.97	06.02.97
Preparation Time	1505	2113	1159	1530	2206
Analysis Time	1505	2113	1159	1530	2206
Date Analyzed	06.03.97	06.02.97	06.03.97	06.05.97	06.02.97
RES Code	PP01	PP01	PP01	PP01	PP01
Initial Volume/Weight	25	25	25	25	25
Final Extraction Volume (FV1)	25	25	25	25	25
Clock ID	1B0603	1B0602	1B0603	1B0605	1B0602

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LOG NO: S7-73006
Received: 29 MAY 97
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Ms. Christine Hettinger
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Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA67/019457-4102/HUNTER PUMPHOUSE/TO#18 & 18-01-»MOD//
Sampled By: Client
Code: 130570620

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
73006-1	MW3301*CS*MW33	05-29-97/1620	HAA67
73006-2	MW3501*CS*MW35	05-29-97/1640	HAA67
73006-3	MW3401*CS*MW34	05-29-97/1650	HAA67
73006-4	MW2501*CS*MW25 } PUMPHOUSE #2	05-29-97/1700	HAA67
73006-5	MW2601*CS*MW26 }	05-29-97/1715	HAA67

PARAMETER	73006-1	73006-2	73006-3	73006-4	73006-5
Polynuclear Aromatic HC (8310)					
Acenaphthene, ug/l	0.048X	<1.0	0.19X	<1.0	<1.0
Acenaphthylene, ug/l	<1.0	<1.0	1.2J	<1.0	<1.0
Benzo(a)pyrene, ug/l	<0.0311	<0.0311	<0.156	<0.0311	<0.0311
Benzo(g,h,i)perylene, ug/l	<0.50	<0.50	<2.5	<0.50	<0.50
Benzo(b)fluoranthene, ug/l	<0.20	<0.20	<1.0	<0.20	0.038JX
Benzo(k)fluoranthene, ug/l	<0.0311	<0.0311	<0.156	<0.0311	<0.0311
Chrysene, ug/l	<0.0311	<0.0311	<0.156	0.011JX	0.0072J
Benzo(a)anthracene, ug/l	<0.0311	<0.0311	<0.156	<0.0311	<0.0311
Fluoranthene, ug/l	<0.50	<0.50	<2.5	0.093JX	<0.50
Fluorene, ug/l	<0.50	<0.50	0.95JX	0.25J	<0.50
Indeno(1,2,3-cd)pyrene, ug/l	<0.0311	<0.0311	<0.156	<0.0311	<0.0311
Dibenzo(a,h)anthracene, ug/l	<0.036	<0.036	<0.18	<0.036	<0.036
Naphthalene, ug/l	5.0	<1.0	71	8.0X	<1.0
Phenanthrene, ug/l	0.029J	<0.20	0.37JX	0.16J	<0.20
Anthracene, ug/l	<0.20	<0.20	<1.0	<0.20	<0.20
Pyrene, ug/l	<0.50	<0.50	<2.5	<0.50	<0.50
1-Methylnaphthalene, ug/l	0.31JX	<1.0	24	0.56JX	<1.0
2-Methylnaphthalene, ug/l	1.2X	<1.0	33	2.6X	<1.0

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Project: HAA67/019457-4102/HUNTER PUMPHOUSE/TO#18 & 18-01-»MOD//
Sampled By: Client
Code: 130570620

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
73006-1	MW3301*CS*MW33	05-29-97/1620	HAA67
73006-2	MW3501*CS*MW35	05-29-97/1640	HAA67
73006-3	MW3401*CS*MW34	05-29-97/1650	HAA67
73006-4	MW2501*CS*MW25 } Pump House #2	05-29-97/1700	HAA67
73006-5	MW2601*CS*MW26 }	05-29-97/1715	HAA67

PARAMETER	73006-1	73006-2	73006-3	73006-4	73006-5
Surrogate - Terphenyl-d14	88 %	100 %	100 %	85 %	88 %
PF Code	T	T	T	T	T
Initial Volume/Weight	970	970	980	980	970
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Dilution factor	1.0	1.0	5.0	1.0	1.0
Batch ID	0603J	0603J	0603J	0603J	0603J
Preparation Date	06.03.97	06.03.97	06.03.97	06.03.97	06.03.97
Preparation Time	2145	2145	2145	2145	2145
Analysis Time	1651	1752	2356	1954	2154
Date Analyzed	06.12.97	06.12.97	06.16.97	06.12.97	06.16.97
RES Code	PP01	PP01	PP01	PP01	PP01
Instrument ID	LCAUV	LCAUV	LCAUV	LCAUV	LCAUV

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
73006-1	MW3301*CS*MW33	05-29-97/1620	HAA67
73006-2	MW3501*CS*MW35	05-29-97/1640	HAA67
73006-3	MW3401*CS*MW34	05-29-97/1650	HAA67
73006-4	MW2501*CS*MW25 } Pumphouse #2	05-29-97/1700	HAA67
73006-5	MW2601*CS*MW26 }	05-29-97/1715	HAA67

PARAMETER	73006-1	73006-2	73006-3	73006-4	73006-5
Sulfate as SO4 (9038)					
Sulfate as SO4 (9038), mg/l	5.5	68	14	<5.0	13
PF Code	T	T	T	T	T
Initial Volume/Weight	25	25	25	25	25
Final Extraction Volume (FV1)	25	25	25	25	25
Dilution factor	1.0	2.0	1.0	1.0	1.0
Batch ID	0609A	0609A	0609A	0609A	0609A
Preparation Time	1555	1555	1555	1555	1555
Preparation Date	06.09.97	06.09.97	06.09.97	06.09.97	06.09.97
Date Analyzed	06.09.97	06.09.97	06.09.97	06.09.97	06.09.97
Analysis Time	1555	1555	1555	1555	1555
RES Code	PP01	PP01	PP01	PP01	PP01

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
73006-1	MW3301*CS*MW33	05-29-97/1620	HAA67
73006-2	MW3501*CS*MW35	05-29-97/1640	HAA67
73006-3	MW3401*CS*MW34	05-29-97/1650	HAA67
73006-4	MW2501*CS*MW25 } Pump House #2	05-29-97/1700	HAA67
73006-5	MW2601*CS*MW26 }	05-29-97/1715	HAA67

PARAMETER	73006-1	73006-2	73006-3	73006-4	73006-5
Iron (6010)					
Iron (6010), mg/l	0.86	9.7	2.4	2.9	1.8
PF Code	T	T	T	T	T
Initial Volume/Weight	100	100	100	100	100
Final Extraction Volume (FV1)	100	100	100	100	100
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	0604I	0604I	0604I	0604I	0604I
Preparation Date	06.04.97	06.04.97	06.04.97	06.04.97	06.04.97
Preparation Time	1040	1040	1040	1040	1040
Analysis Time	1301	1307	1312	1316	1321
Date Analyzed	06.05.97	06.05.97	06.05.97	06.05.97	06.05.97
RES Code	PP01	PP01	PP01	PP01	PP01

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REPORT OF RESULTS

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73006-1	MW3301*CS*MW33	05-29-97/1620	HAA67
73006-2	MW3501*CS*MW35	05-29-97/1640	HAA67
73006-3	MW3401*CS*MW34	05-29-97/1650	HAA67
73006-4	MW2501*CS*MW25 } PumpHouse #2	05-29-97/1700	HAA67
73006-5	MW2601*CS*MW26 }	05-29-97/1715	HAA67

PARAMETER	73006-1	73006-2	73006-3	73006-4	73006-5
Iron, Ferrous (2+) (SM3500)					
Iron, Ferrous (2+), mg/l	0.55	2.7	<0.10*F65	3.1	<0.050
PF Code	T	T	T	T	T
Initial Volume/Weight	25	25	25	25	25
Final Extraction Volume (FV1)	25	25	25	25	25
Dilution factor	2.0	10	2.0	10	1.0
Batch ID	0611X	0530X	0611X	0530X	0530X
Preparation Date	06.11.97	05.30.97	06.11.97	05.30.97	05.30.97
Preparation Time	0940	1620	0940	1620	1620
Analysis Time	1250	1655	1250	1655	1655
Date Analyzed	06.11.97	05.30.97	06.11.97	05.30.97	05.30.97
RES Code	PP01	PP01	PP01	PP01	PP01
Iron, Ferric (3+)					
Ferric (3+) iron, mg/l	0.31	7.0	2.4	<0.050	1.8

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
73006-1	MW3301*CS*MW33	05-29-97/1620	HAA67
73006-2	MW3501*CS*MW35	05-29-97/1640	HAA67
73006-3	MW3401*CS*MW34	05-29-97/1650	HAA67
73006-4	MW2501*CS*MW25 } Pumphouse #2	05-29-97/1700	HAA67
73006-5	MW2601*CS*MW26 }	05-29-97/1715	HAA67

PARAMETER	73006-1	73006-2	73006-3	73006-4	73006-5
Dissolved Oxygen (360.1)					
Dissolved Oxygen, mg/l	14	0.60	4.9	0.60	6.2
PF Code	T	T	T	T	T
Initial Volume/Weight	200	200	200	200	200
Final Extraction Volume (FV1)	200	200	200	200	200
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	0529A	0529A	0529A	0529A	0529A
Preparation Time	2030	2030	2030	2030	2030
Preparation Date	05.29.97	05.29.97	05.29.97	05.29.97	05.29.97
Date Analyzed	05.29.97	05.29.97	05.29.97	05.29.97	05.29.97
Analysis Time	2030	2030	2030	2030	2030
RES Code	PP01	PP01	PP01	PP01	PP01

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
73006-1	MW3301*CS*MW33	05-29-97/1620	HAA67
73006-2	MW3501*CS*MW35	05-29-97/1640	HAA67
73006-3	MW3401*CS*MW34	05-29-97/1650	HAA67
73006-4	MW2501*CS*MW25 } PumpHouse #2	05-29-97/1700	HAA67
73006-5	MW2601*CS*MW26 }	05-29-97/1715	HAA67

PARAMETER	73006-1	73006-2	73006-3	73006-4	73006-5
Lead (6010)					
Lead (6010), mg/l	0.0030B	0.018	0.0022B	0.11	0.0027B
PF Code	T	T	T	T	T
Initial Volume/Weight	100	100	100	100	100
Final Extraction Volume (FV1)	100	100	100	100	100
Dilution factor	1.0	1.0	1.0	1.0	1.0
Batch ID	0604I	0604I	0604I	0604I	0604I
Preparation Date	06.04.97	06.04.97	06.04.97	06.04.97	06.04.97
Preparation Time	1040	1040	1040	1040	1040
Analysis Time	1301	1307	1312	1316	1321
Date Analyzed	06.05.97	06.05.97	06.05.97	06.05.97	06.05.97
RES Code	PP01	PP01	PP01	PP01	PP01

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
73006-6	MW2901*CS*MW29 } Pump House #2	05-29-97/1740	HAA67
73006-7	MW3101*CS*MW31 }	05-29-97/1820	HAA67
73006-8	MW2201*CS*MW22 } Pump House #1	05-29-97/1835	HAA67
73006-9	MW1901*CS*MW19 }	05-29-97/1855	HAA67

PARAMETER	73006-6	73006-7	73006-8	73006-9
Purgeable Aromatics (8020)				
Benzene, ug/l	1100	61	160	630
Toluene, ug/l	1500	1100	80J	1900
Ethylbenzene, ug/l	770	970	200	530
Xylenes, ug/l	3100	4100	6200	2400
Methyl tert-butyl ether (MTBE), ug/l	<220J	<110J	<220J	<220J
Surrogate - F3-Toluene	103 %	107 %	100 %	103 %
PF Code	T	T	T	T
Dilution factor	100.0	50.0	100.0	100.0
Batch ID	0602A	0602A	0602A	0602A
Preparation Date	06.05.97	06.03.97	06.05.97	06.04.97
Preparation Time	1437	1559	1624	1729
Analysis Time	1437	1559	1624	1729
Date Analyzed	06.05.97	06.03.97	06.05.97	06.04.97
RES Code	PP01	PP01	PP01	PP01
Initial Volume/Weight	25	25	25	25
Final Extraction Volume (FV1)	25	25	25	25
Clock ID	1B0605	1B0603	1B0605	1B0604

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
73006-6	MW2901*CS*MW29 } PumpHouse #2	05-29-97/1740	HAA67
73006-7	MW3101*CS*MW31 }	05-29-97/1820	HAA67
73006-8	MW2201*CS*MW22 } PumpHouse #1	05-29-97/1835	HAA67
73006-9	MW1901*CS*MW19 }	05-29-97/1855	HAA67

PARAMETER	73006-6	73006-7	73006-8	73006-9
Polynuclear Aromatic HC (8310)				
Acenaphthene, ug/l	<1.0	1.9JX	0.92JX	<1.0
Acenaphthylene, ug/l	<1.0	<5.0	<1.0	<1.0
Benzo(a)pyrene, ug/l	0.022JX	<0.156	<0.0311	<0.0311
Benzo(g,h,i)perylene, ug/l	<0.50	<2.5	<0.50	<0.50
Benzo(b)fluoranthene, ug/l	0.054J	<1.0	0.0092J	0.011J
Benzo(k)fluoranthene, ug/l	<0.0311	<0.156	<0.0311	<0.0311
Chrysene, ug/l	0.050	0.12J	0.015JX	<0.0311
Benzo(a)anthracene, ug/l	<0.0311	0.10J	<0.0311	<0.0311
Fluoranthene, ug/l	1.7X	3.7X	0.056J	0.049J
Fluorene, ug/l	1.6	2.4J	0.15J	<0.50
Indeno(1,2,3-cd)pyrene, ug/l	<0.0311	<0.156	<0.0311	<0.0311
Dibenzo(a,h)anthracene, ug/l	<0.036	<0.18	<0.036	<0.036
Naphthalene, ug/l	24	9.2X	11	1.5
Phenanthrene, ug/l	4.0	7.5	0.12J	0.078J
Anthracene, ug/l	0.57	1.2	0.0092J	<0.20
Pyrene, ug/l	<0.50	1.9J	<0.50	<0.50
1-Methylnaphthalene, ug/l	<1.0	10X	0.36JX	<1.0
2-Methylnaphthalene, ug/l	2.6	<5.0	0.79JX	0.59JX
Surrogate - Terphenyl-d14	77 %	89 %	65 %	69 %

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
73006-6	MW2901*CS*MW29 } Pump House #2	05-29-97/1740	HAA67
73006-7	MW3101*CS*MW31 }	05-29-97/1820	HAA67
73006-8	MW2201*CS*MW22 } Pump House #1	05-29-97/1835	HAA67
73006-9	MW1901*CS*MW19 }	05-29-97/1855	HAA67

PARAMETER	73006-6	73006-7	73006-8	73006-9
PF Code	T	T	T	T
Initial Volume/Weight	970	930	970	970
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0
Dilution factor	1.0	5.0	1.0	1.0
Batch ID	0603J	0603J	0603J	0603J
Preparation Date	06.03.97	06.03.97	06.03.97	06.03.97
Preparation Time	2145	2145	2145	2145
Analysis Time	2255	0057	2359	0100
Date Analyzed	06.16.97	06.17.97	06.12.97	06.13.97
RES Code	PP01	PP01	PP01	PP01
Instrument ID	LCAUV	LCAUV	LCAUV	LCAUV

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REPORT OF RESULTS

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73006-6	MW2901*CS*MW29 } PumpHouse #2	05-29-97/1740	HAA67
73006-7	MW3101*CS*MW31 }	05-29-97/1820	HAA67
73006-8	MW2201*CS*MW22 } PumpHouse #1	05-29-97/1835	HAA67
73006-9	MW1901*CS*MW19 }	05-29-97/1855	HAA67

PARAMETER	73006-6	73006-7	73006-8	73006-9
Sulfate as SO4 (9038)				
Sulfate as SO4 (9038), mg/l	31	7.8	12	<5.0
PF Code	T	T	T	T
Initial Volume/Weight	25	25	25	25
Final Extraction Volume (FV1)	25	25	25	25
Dilution factor	1.0	1.0	1.0	1.0
Batch ID	0609A	0609A	0609A	0609A
Preparation Time	1555	1555	1555	1555
Preparation Date	06.09.97	06.09.97	06.09.97	06.09.97
Date Analyzed	06.09.97	06.09.97	06.09.97	06.09.97
Analysis Time	1555	1555	1555	1555
RES Code	PP01	PP01	PP01	PP01

SL ***SAVANNAH LABORATORIES***
& ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S7-73006
Received: 29 MAY 97
Reported: 20 JUN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA67/019457-4102/HUNTER PUMPHOUSE/TO#18 & 18-01-»MOD//
Sampled By: Client
Code: 130570620

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES		DATE/ TIME SAMPLED	SDG#
73006-6	MW2901*CS*MW29	Pump House #2	05-29-97/1740	HAA67
73006-7	MW3101*CS*MW31	Pump House #2	05-29-97/1820	HAA67
73006-8	MW2201*CS*MW22	Pump House #1	05-29-97/1835	HAA67
73006-9	MW1901*CS*MW19	Pump House #1	05-29-97/1855	HAA67

PARAMETER	73006-6	73006-7	73006-8	73006-9
Iron (6010)				
Iron (6010), mg/l	7.6	3.9	11	3.5
PF Code	T	T	T	T
Initial Volume/Weight	100	100	100	100
Final Extraction Volume (FV1)	100	100	100	100
Dilution factor	1.0	1.0	1.0	1.0
Batch ID	0604I	0604I	0604I	0604I
Preparation Date	06.04.97	06.04.97	06.04.97	06.04.97
Preparation Time	1040	1040	1040	1040
Analysis Time	1348	1353	1357	1401
Date Analyzed	06.05.97	06.05.97	06.05.97	06.05.97
RES Code	PP01	PP01	PP01	PP01

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& ENVIRONMENTAL SERVICES, INC.

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LOG NO: S7-73006
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Ms. Christine Hettinger
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Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA67/019457-4102/HUNTER PUMPHOUSE/TO#18 & 18-01-»MOD//
Sampled By: Client
Code: 130570620

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES		DATE/ TIME SAMPLED	SDG#
73006-6	MW2901*CS*MW29	Pump House #2	05-29-97/1740	HAA67
73006-7	MW3101*CS*MW31		05-29-97/1820	HAA67
73006-8	MW2201*CS*MW22	Pump House #1	05-29-97/1835	HAA67
73006-9	MW1901*CS*MW19		05-29-97/1855	HAA67

PARAMETER	73006-6	73006-7	73006-8	73006-9
Iron, Ferrous (2+) (SM3500)				
Iron, Ferrous (2+), mg/l	10	3.4	2.4	0.36
PF Code	T	T	T	T
Initial Volume/Weight	25	25	25	25
Final Extraction Volume (FV1)	25	25	25	25
Dilution factor	20	10	5.0	1.0
Batch ID	0530X	0530X	0611X	0530X
Preparation Date	05.30.97	05.30.97	06.11.97	05.30.97
Preparation Time	1620	1620	0940	1620
Analysis Time	1655	1655	1250	1655
Date Analyzed	05.30.97	05.30.97	06.11.97	05.30.97
RES Code	PP01	PP01	PP01	PP01
Iron, Ferric (3+)				
Ferric (3+) iron, mg/l	<0.050	0.50	8.6	3.1

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Received: 29 MAY 97
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Ms. Christine Hettinger
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1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA67/019457-4102/HUNTER PUMPHOUSE/TO#18 & 18-01-»MOD//
Sampled By: Client
Code: 130570620

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES		DATE/ TIME SAMPLED	SDG#
73006-6	MW2901*CS*MW29	Pumphouse # 2	05-29-97/1740	HAA67
73006-7	MW3101*CS*MW31		05-29-97/1820	HAA67
73006-8	MW2201*CS*MW22	Pumphouse # 1	05-29-97/1835	HAA67
73006-9	MW1901*CS*MW19		05-29-97/1855	HAA67

PARAMETER	73006-6	73006-7	73006-8	73006-9
Dissolved Oxygen (360.1)				
Dissolved Oxygen, mg/l	4.2	4.9	5.2	2.6
PF Code	T	T	T	T
Initial Volume/Weight	200	200	200	200
Final Extraction Volume (FV1)	200	200	200	200
Dilution factor	1.0	1.0	1.0	1.0
Batch ID	0529A	0529A	0529A	0529A
Preparation Time	2030	2030	2030	2030
Preparation Date	05.29.97	05.29.97	05.29.97	05.29.97
Date Analyzed	05.29.97	05.29.97	05.29.97	05.29.97
Analysis Time	2030	2030	2030	2030
RES Code	PP01	PP01	PP01	PP01

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Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA67/019457-4102/HUNTER PUMPHOUSE/TO#18 & 18-01-»MOD//
Sampled By: Client
Code: 130570620

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES		DATE/ TIME SAMPLED	SDG#
73006-6	MW2901*CS*MW29	Pump House #2	05-29-97/1740	HAA67
73006-7	MW3101*CS*MW31		05-29-97/1820	HAA67
73006-8	MW2201*CS*MW22	Pump House #1	05-29-97/1835	HAA67
73006-9	MW1901*CS*MW19		05-29-97/1855	HAA67

PARAMETER	73006-6	73006-7	73006-8	73006-9
Lead (6010)				
Lead (6010), mg/l	0.25	0.33	0.024	0.020
PF Code	T	T	T	T
Initial Volume/Weight	100	100	100	100
Final Extraction Volume (FV1)	100	100	100	100
Dilution factor	1.0	1.0	1.0	1.0
Batch ID	0604I	0604I	0604I	0604I
Preparation Date	06.04.97	06.04.97	06.04.97	06.04.97
Preparation Time	1040	1040	1040	1040
Analysis Time	1348	1353	1357	1401
Date Analyzed	06.05.97	06.05.97	06.05.97	06.05.97
RES Code	PP01	PP01	PP01	PP01

SL ***SAVANNAH LABORATORIES***
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Ms. Christine Hettinger
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Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA67/019457-4102/HUNTER PUMPHOUSE/TO#18 & 18-01-»MOD//
Sampled By: Client
Code: 130570620

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
73006-10	ER01*CS*MW33	05-29-97/1610	HAA67
73006-11	MW2801*CS*MW28	05-29-97/1730	HAA67
73006-12	MW5601*CS*MW29	05-29-97/1740	HAA67
73006-13	MW3201*CS*MW32	05-29-97/1755	HAA67
73006-14	MW3001*CS*MW30	05-29-97/1805	HAA67

PUMPHOUSE #2

PARAMETER	73006-10	73006-11	73006-12	73006-13	73006-14
Purgeable Aromatics (8020)					
Benzene, ug/l	<1.0	40J	1400	2.6	24J
Toluene, ug/l	<1.0	43J	1400	<1.0	500
Ethylbenzene, ug/l	<1.0	440	740	2.2	240
Xylenes, ug/l	<2.0	2600	2700	2.8	1400
Methyl tert-butyl ether (MTBE), ug/l	<10	<110J	<220J	<10	<55J
Surrogate - F3-Toluene	100 %	100 %	103 %	100 %	105 %
PF Code	T	T	T	T	T
Dilution factor	1.0	50.0	100.0	1.0	25.0
Batch ID	0602A	0602A	0602A	0602A	0602A
Preparation Date	06.02.97	06.04.97	06.04.97	06.02.97	06.04.97
Preparation Time	2019	1635	1916	2300	1542
Analysis Time	2019	1635	1916	2300	1542
Date Analyzed	06.02.97	06.04.97	06.04.97	06.02.97	06.04.97
RES Code	BR11	PP01	PD11	PP01	PP01
Initial Volume/Weight	25	25	25	25	25
Final Extraction Volume (FV1)	25	25	25	25	25
Clock ID	1B0602	1B0604	1B0604	1B0602	1B0604

DUPLICATE

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LOG NO: S7-73006
Received: 29 MAY 97
Reported: 20 JUN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA67/019457-4102/HUNTER PUMPHOUSE/TO#18 & 18-01-»MOD//
Sampled By: Client
Code: 130570620

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
73006-10	ER01*CS*MW33	05-29-97/1610	HAA67
73006-11	MW2801*CS*MW28	05-29-97/1730	HAA67
73006-12	MW5601*CS*MW29	05-29-97/1740	HAA67
73006-13	MW3201*CS*MW32	05-29-97/1755	HAA67
73006-14	MW3001*CS*MW30	05-29-97/1805	HAA67

Pumphouse #2

PARAMETER	73006-10	73006-11	73006-12	73006-13	73006-14
Polynuclear Aromatic HC (8310)					
Acenaphthene, ug/l	<1.0	<2.0	<5.0	<1.0	<5.0
Acenaphthylene, ug/l	<1.0	<2.0	<5.0	<1.0	<5.0
Benzo(a)pyrene, ug/l	<0.0311	<0.0622	<0.156	<0.0311	<0.156
Benzo(g,h,i)perylene, ug/l	<0.50	<1.0	<2.5	<0.50	<2.5
Benzo(b)fluoranthene, ug/l	<0.20	0.050J	0.10JX	<0.20	<1.0
Benzo(k)fluoranthene, ug/l	<0.0311	<0.0622	<0.156	<0.0311	<0.156
Chrysene, ug/l	<0.0311	0.023J	0.13J	<0.0311	0.18
Benzo(a)anthracene, ug/l	<0.0311	0.014J	<0.156	<0.0311	0.16
Fluoranthene, ug/l	<0.50	1.4	2.3J	<0.50	5.9X
Fluorene, ug/l	<0.50	0.93J	2.2J	<0.50	1.7J
Indeno(1,2,3-cd)pyrene, ug/l	<0.0311	<0.0622	<0.156	<0.0311	<0.156
Dibenzo(a,h)anthracene, ug/l	<0.036	<0.072	<0.18	<0.036	<0.18
Naphthalene, ug/l	<1.0	6.0	32	<1.0	8.2
Phenanthrene, ug/l	<0.20	3.4	5.8	0.16J	7.6
Anthracene, ug/l	<0.20	0.64	0.88J	0.015JX	0.91J
Pyrene, ug/l	<0.50	<1.0	<2.5	0.12JX	2.9
1-Methylnaphthalene, ug/l	<1.0	<2.0	<5.0	<1.0	<5.0
2-Methylnaphthalene, ug/l	<1.0	3.6	3.4J	<1.0	<5.0

↑ DUPLICATE

SL SAVANNAH LABORATORIES
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LOG NO: S7-73006
Received: 29 MAY 97
Reported: 20 JUN 97

Ms. Christine Hettinger
Metcalf & Eddy
1201 Peachtree St., NE, 400 Colony Square, Suite 1101
Atlanta, GA 30361

Client PO. No.: 91032

Project: HAA67/019457-4102/HUNTER PUMPHOUSE/TO#18 & 18-01-»MOD//
Sampled By: Client
Code: 130570620

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
73006-10	ER01*CS*MW33	05-29-97/1610	HAA67
73006-11	MW2801*CS*MW28	05-29-97/1730	HAA67
73006-12	MW5601*CS*MW29	05-29-97/1740	HAA67
73006-13	MW3201*CS*MW32	05-29-97/1755	HAA67
73006-14	MW3001*CS*MW30	05-29-97/1805	HAA67

PumpHouse #2

PARAMETER	73006-10	73006-11	73006-12	73006-13	73006-14
Surrogate - Terphenyl-d14	104 %	96 %	112 %	65 %	100 %
PF Code	T	T	T	T	T
Initial Volume/Weight	980	980	1000	980	940
Final Extraction Volume (FV1)	1.0	1.0	1.0	1.0	1.0
Dilution factor	1.0	2.0	5.0	1.0	5.0
Batch ID	0603J	0603J	0603J	0603J	0603J
Preparation Date	06.03.97	06.03.97	06.03.97	06.03.97	06.03.97
Preparation Time	2145	2145	2145	2145	2145
Analysis Time	0505	0158	0259	0808	0401
Date Analyzed	06.13.97	06.17.97	06.17.97	06.13.97	06.17.97
RES Code	BR11	PP01	PD11	PP01	PP01
Instrument ID	LCAUV	LCAUV	LCAUV	LCAUV	LCAUV

DUPLICATE

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

P. 02

PROJECT NAME: Hunter Pump Houses 1, 2 + 6 — TASK ORDER NO. 18+18-01 Mod

PROJECT NO: 01945 7-4102 — SAMPLE EVENT:

LABORATORY ID: SLS — PROGRAM TYPE:

SAMPLER(S) NAME: Daniel Howard — SAMPLER(S) SIGNATURE: Daniel Howard

ANALYTICAL PARAMETERS/METHODS

Date	Time	Matrix	Sample No.	Location	Type	QC	# Containers	Preserved	Filtered	VOCs 8020	SVOC PAH 8310	Metals ICP Hg CVAA GFAA Fe 6010/Pb 239.2	Fe+2 3500	Pesticides	PCB	TPH/DRO	DO 360.1	Sulfate 9038
~~5/29~~	1605	W	TB01	MW33	BTi		3	Y	NA	3								
5/29/97	1610	W	ER01	MW33	BR1		5	Y		3	2							
	~~1620~~	~~W~~	~~MW3301~~	~~MW33~~	~~PP01~~		~~9~~	~~Y~~		3	2	1	1				1	1
	1640	W	MW3501	MW35	PP01		9	Y		3	2	1	1				1	1
	1650	W	MW3401	MW34	PP01		9	Y		3	2	1	1				1	1
	1700	W	MW2501	MW25	PP01		9	Y		3	2	1	1				1	1
	1715	W	MW2601	MW26	PP01		3	Y		3								
	1730	W	MW2801	MW28	PP01		3	Y		3								
	1740	W	MW2901	MW29	PP01		3	Y		3								
	1740	W	MW5601	MW29	PD1		3	Y		3								
	1755	W	MW3201	MW32	PP01		3	Y		3								
	1805	W	MW3001	MW30	PP01		3	Y		3								

Relinquished by: (Signature) Daniel Howard — Date/Time: 5/29/97 2013 — Received by: Bob Daly — Date/Time: 5/29/97 2013

Remarks: 57.730016-A — N. Spencer — 5.30.97 8:00

Cooler Temperature: 9.6

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-6010, FAX (404) 872-3161

AIRBILL CO. Hand Delivered by M+E

TRACKING NO:

STANDARD PRESERVATION (Y):
(H) HCl/VOC, + Fe+2
(N) HNO3/METALS
(S) H2SO4/
(O) OTHER
STORED/SHIPPED IN ICE (Y) N

SAVANNAH LABS JUN-02-1997 13:54

CHAIN - OF - CUSTODY - RECORD

PROJECT NAME: Hunter Pump House 1, 2 + 6 | TASK ORDER NO. 18 + 1801 Mod

PROJECT NO: 019457-4102 | SAMPLE EVENT:

LABORATORY ID: SLS | PROGRAM TYPE:

SAMPLER(S) NAME: Daniel Howard | SAMPLER(S) SIGNATURE: Daniel Howard

ANALYTICAL PARAMETERS/METHODS

										VOCs	SVOC PAH	METALS BCP Hg CVAA GFAA	METALS Fe	PESTICIDES	PCB	TPH/DRO	O&G DO	Sulfate
									Method No.		8310	Fe 6010/ Pb 239.2	3500					
5/28/97	1715	W	MW2601	MW26	PP01		6	Y	NA		2	1	1				1	1
5/29/97	1730	W	MW2801	MW28	PP01		2	N			2							
	1740	W	MW2901	MW29	PP01		6	Y			2	1	1				1	1
	1740	W	MW5601	MW29	PD1		2	N			2							
	1755	W	MW3201	MW32	PP01		2	N			2							
	1805	W	MW3001	MW30	PP01		2	N			2							
	1910	W	MW1701	MW17	PP01		2	N			2							
	—	W	TEMP	Blank			1											

Relinquished by: (Signature) Daniel L Howard | Date/Time: 5/29/97 2015 | Received by: Bob Daly | Date/Time: 5/29/97 2015 | Cooler Temperature: 11.5

Remarks: SF-730010-B M. Jancomb 5.30.97 8:00

Send Results to:

Christine Hattinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

AIRBILL NO. Hand Delivered by M+E

TRACKING NO:

STANDARD PRESERVATION (Y):
(H) HCl/NaOH Fe^{+2}
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER
STORED/SHIPPED IN ICE (Y) N

P. 04

SAVANNAH LABS

JUN-02-1997 13:55

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

P. 05

PROJECT NAME: Hunter Pump House 1, 2 & 6 — TASK ORDER NO. 1818-01 Mod

PROJECT NO: 019457-4102 — SAMPLE EVENT:

LABORATORY ID: SLS — PROGRAM TYPE:

SAMPLER(S) NAME: Daniel Howard — SAMPLER(S) SIGNATURE: Daniel Howard

ANALYTICAL PARAMETERS/METHODS

Method No.

										VOCs	SVOC PAH 8310	METALS ICP Hg CVAA GFAA Fe 6010/Pb 239.2	HARDNESS 3500	PESTICIDES Fe+2	PCB	TPH/DRO	DO 360.1	SULFATE 9036
5/29/97	1805	W	MW3001MS/MSD	MW30	SL1		4	N	NA		4							
	1820	W	MW3101	MW31	PP01		6	Y			2	1	1				1	1
~~—~~	~~1825~~	~~W~~	~~MW2201~~	~~MW22~~	~~PP01~~		~~6~~	~~Y~~	~~—~~		~~2~~	~~1~~	~~1~~	~~—~~	~~—~~	~~—~~	~~1~~	~~1~~
	1845	W	MW2101	MW21	PP01		2	N			2							
	1855	W	MW1901	MW19	PP01		6	Y	↓		2	1	1				1	1
↓	—	W	TEMP	Blank			1											

Relinquished by: (Signature) Daniel Howard — Date/Time: 5/29/97/2015 — Received by: Bob Daly — Date/Time: 5/29/97 2015 — Cooler Temperature: 7.2

Remarks: S7-73006-C M Sancomb 5/30/97 8:00

AIRBILL CO. Hand Delivered by M+E

TRACKING NO:

Send Results to:

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):

(H) HCl/VOC, Fe^{+2}
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____

STORED/SHIPPED IN ICE (Y/N)

SAVANNAH LABS

JUN-02-1997 13:56

CAP-PART B
SURFACE WATER ANALYTICAL RESULTS
FEBRUARY 1999

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Table VIII-D. Summary of CAP-Part B Surface Water Analytical Results (1999)

Station: / Sample ID: / Collection Date: / Units:	In-Stream Water Quality Standards (µg/L)	P2-SW01 PH2-SW1 02/17/1999 (µg/L)	P2-SW02 PH2-SW2 02/17/1999 (µg/L)	P2-SW03 PH2-SW3 02/17/1999 (µg/L)	P2-SW04 PH2-SWE04 02/17/1999 (µg/L)
VOLATILE ORGANIC COMPOUNDS					
Benzene	71	1 U	2.2 =	1 U	1 U
Toluene	200,000	1 U	1 U	2 =	1 U
Ethylbenzene	28,718	1 U	1.6 =	1 U	1 U
Xylenes	NRC	2 U	1.4 =	4.1 =	3.1 =
POLYNUCLEAR AROMATIC HYDROCARBONS					
1-Methylnaphthalene	NRC	2.1 U	2.1 U	2.1 U	2.0 U
2-Methlynaphthalene	NRC	2.1 U	2.1 U	2.1 U	2.0 U
Acenaphthene	NRC	1.0 U	1.0 U	1.0 U	1.0 U
Acenaphthylene	NRC	2.1 U	2.1 U	2.1 U	2.0 U
Anthracene	110,000	0.68 U	0.69 U	0.68 U	0.67 U
Benzo(a)anthracene	0.0311	0.13 U	0.14 U	0.13 U	0.13 U
Benzo(a)pyrene	0.0311	0.10 U	0.10 U	0.10 U	0.10 U
Benzo(b)fluoranthene	NRC	0.19 U	0.19 U	0.19 U	0.18 U
Benzo(g,h,i)perylene	NRC	0.78 U	0.79 U	0.78 U	0.77 U
Benzo(k)fluoranthene	0.0311	0.18 U	0.18 U	0.18 U	0.17 U
Chrysene	0.0311	0.15 U	0.16 U	0.15 U	0.15 U
Dibenzo(a,h)anthracene	0.0311	0.31 U	0.31 U	0.31 U	0.30 U
Fluoranthene	370	0.22 U	0.22 U	0.22 U	0.21 U
Fluorene	14,000	0.22 U	0.22 U	0.22 U	0.21 U
Indeno(1,2,3-cd)pyrene	0.0311	0.44 U	0.45 U	0.44 U	0.43 U
Naphthalene	NRC	1.0 U	1.0 U	1.0 U	1.0 U
Phenanthrene	NRC	0.66 U	0.67 U	0.66 U	0.7 U
Pyrene	11,000	0.28 U	0.28 U	0.28 U	0.27 U

NOTES:

[1] GA EPD IWQS (Chapter 391-03-6.03)

Laboratory Qualifiers

- U — Indicates the compound was not detected at the concentration reported.
- UJ — Indicates the compound was not detected above an approximated sample quantitation limit.
- J — Indicates the value for the compound is an estimated value.
- = — Indicates the compound was detected at the concentration reported.
- R — Indicates the result was rejected during the data validation process.

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2960 Foster Creighton Dr.
P.O. Box 40566
Nashville, TN 37204-0566
Phone 1-615-726-0177

ANALYTICAL REPORT

DIRECTOR U.S. ARMY CORPS ENG. 5394
CESAD LABORATORY-BLDG 400
200 N COBB PKWY, STE 404
MARIETTA, GA 30062

Lab Number: 99-A23629
Sample ID: 38006 PH2-SW1
Sample Type: Water
Site ID:

Date Collected: 2/17/99
Time Collected: 16:45
Date Received: 2/19/99
Time Received: 9:00

Project:
Project Name:
Sampler:

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
ORGANIC PARAMETERS										
Naphthalene	ND	ng/l	0.00103	0.00100	1	2/23/99	21:43	Noorbakhsh	8310	1038
Acenapthene	ND	ng/l	0.00103	0.00100	1	2/23/99	21:43	Noorbakhsh	8310	1038
Anthracene	ND	ng/l	0.00068	0.00066	1	2/23/99	21:43	Noorbakhsh	8310	1038
Fluoranthene	ND	ng/l	0.00022	0.00021	1	2/23/99	21:43	Noorbakhsh	8310	1038
Fluorene	ND	ng/l	0.00022	0.00021	1	2/23/99	21:43	Noorbakhsh	8310	1038
Pyrene	ND	ng/l	0.00028	0.00027	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(a)anthracene	ND	ng/l	0.00013	0.00013	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(a)pyrene	ND	ng/l	0.00010	0.00010	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(b)fluoranthene	ND	ng/l	0.00019	0.00018	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(k)fluoranthene	ND	ng/l	0.00018	0.00017	1	2/23/99	21:43	Noorbakhsh	8310	1038
Chrysene	ND	ng/l	0.00015	0.00015	1	2/23/99	21:43	Noorbakhsh	8310	1038
Dibenzo(a,h)anthracene	ND	ng/l	0.00031	0.00030	1	2/23/99	21:43	Noorbakhsh	8310	1038
Indeno(1,2,3-cd)pyrene	ND	ng/l	0.00044	0.00043	1	2/23/99	21:43	Noorbakhsh	8310	1038
Acenaphthylene	ND	ng/l	0.00206	0.00200	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(g,h,i)perylene	ND	ng/l	0.00078	0.00076	1	2/23/99	21:43	Noorbakhsh	8310	1038
Phenanthrene	ND	ng/l	0.00066	0.00064	1	2/23/99	21:43	Noorbakhsh	8310	1038
1-Methylnapthalene	ND	ng/l	0.00206	0.00200	1	2/23/99	21:43	Noorbakhsh	8310	1038
2-Methylnapthalene	ND	ng/l	0.00206	0.00200	1	2/23/99	21:43	Noorbakhsh	8310	1038
VOLATILE ORGANICS by GC										
Benzene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Bromobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
n-Butylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
sec-Butylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
tert-Butylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Chlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
2-Chlorotoluene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
4-Chlorotoluene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,2-Dichlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,3-Dichlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,4-Dichlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Ethylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Isopropylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
4-Isopropyltoluene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Naphthalene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
n-Propylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Styrene	ND	ng/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495

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ANALYTICAL REPORT

Laboratory Number: 99-A23629
Sample ID: 38006 PH2-SW1

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
Toluene	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,2,3-Trichlorobenzene	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,2,4-Trichlorobenzene	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,2,4-Trimethylbenzene	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,3,5-Trimethylbenzene	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
m,p-Xylenes	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
o-Xylene	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Hexachlorobutadiene	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Bromochloromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Bromodichloromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Bromoform	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Bromomethane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Carbon tetrachloride	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Chloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Chloroform	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Chloromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Dibromochloromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Ethylene Dibromide	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Dibromomethane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,2,3-Trichloropropane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Vinyl chloride	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Dichlorodifluoromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,1-Dichloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,2-Dichloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,1-Dichloroethene	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
cis-1,2-Dichloroethene	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
trans-1,2-Dichloroethene	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,2-Dichloropropane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,3-Dichloropropane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
2,2-Dichloropropane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,1-Dichloropropene	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
cis-1,3-Dichloropropene	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
trans-1,3-Dichloropropene	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Methylene chloride	ND	mg/l	0.0050	0.0050	1	2/20/99	16:18	T McCollum	8021B	9495
1,1,1,2-Tetrachloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,1,2,2-Tetrachloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Tetrachloroethene	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,1,1-Trichloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,1,2-Trichloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Trichloroethene	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
Trichlorofluoromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495
1,2-Dibromo-3-chloropropane	ND	mg/l	0.0010	0.0010	1	2/20/99	16:18	T McCollum	8021B	9495

ND = Not detected at the report limit.

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ANALYTICAL REPORT

Laboratory Number: 99-A23629
Sample ID: 38006 PH2-SW1

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Analyst	Method
PAH's	970. ml	1.00 ml	2/22/99	Fitzwater	3510

Surrogate	% Recovery	Target Range
PID Surr., a,a,a-trifluorotoluene	99.	50. - 150.
Hall Surr., chloroprene	91.	63. - 122.
Hall Surr., 1-chloro-3-fluorobenzene	76.	59. - 117.
PAH Surr., p-terphenyl d14	80.	20. - 140.

Report Approved By: Eric S. Smith Report Date: 2/27/99

Theodore J. Duello, Ph.D., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Services
Eric Smith, Assistant Technical Director

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ANALYTICAL REPORT

DIRECTOR U.S. ARMY CORPS ENG. 5394
CESAD LABORATORY-BLDG 400
200 N COBB PKWY, STE 404
MARIETTA, GA 30062

Lab Number: 99-A23630
Sample ID: 38007 PH2-SW2
Sample Type: Water
Site ID:

Date Collected: 2/17/99
Time Collected: 16:50
Date Received: 2/19/99
Time Received: 9:00

Project:
Project Name:
Sampler:

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
ORGANIC PARAMETERS										
Naphthalene	ND	ng/l	0.00104	0.00100	1	2/23/99	21:43	Noorbakhsh	8310	1038
Acenapthene	ND	ng/l	0.00104	0.00100	1	2/23/99	21:43	Noorbakhsh	8310	1038
Anthracene	ND	ng/l	0.00069	0.00066	1	2/23/99	21:43	Noorbakhsh	8310	1038
Fluoranthene	ND	ng/l	0.00022	0.00021	1	2/23/99	21:43	Noorbakhsh	8310	1038
Fluorene	ND	ng/l	0.00022	0.00021	1	2/23/99	21:43	Noorbakhsh	8310	1038
Pyrene	ND	ng/l	0.00028	0.00027	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(a)anthracene	ND	ng/l	0.00014	0.00013	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(a)pyrene	ND	ng/l	0.00010	0.00010	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(b)fluoranthene	ND	ng/l	0.00019	0.00018	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(k)fluoranthene	ND	ng/l	0.00018	0.00017	1	2/23/99	21:43	Noorbakhsh	8310	1038
Chrysene	ND	ng/l	0.00016	0.00015	1	2/23/99	21:43	Noorbakhsh	8310	1038
Dibenzo(a,h)anthracene	ND	ng/l	0.00031	0.00030	1	2/23/99	21:43	Noorbakhsh	8310	1038
Indeno(1,2,3-cd)pyrene	ND	ng/l	0.00045	0.00043	1	2/23/99	21:43	Noorbakhsh	8310	1038
Acenaphthylene	ND	ng/l	0.00208	0.00200	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(g,h,i)perylene	ND	ng/l	0.00079	0.00076	1	2/23/99	21:43	Noorbakhsh	8310	1038
Phenanthrene	ND	ng/l	0.00067	0.00064	1	2/23/99	21:43	Noorbakhsh	8310	1038
1-Methylnapthalene	ND	ng/l	0.00208	0.00200	1	2/23/99	21:43	Noorbakhsh	8310	1038
2-Methylnapthalene	ND	ng/l	0.00208	0.00200	1	2/23/99	21:43	Noorbakhsh	8310	1038
VOLATILE ORGANICS by GC										
Benzene	0.0022	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Bromobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
n-Butylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
sec-Butylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
tert-Butylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Chlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
2-Chlorotoluene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
4-Chlorotoluene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,2-Dichlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,3-Dichlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,4-Dichlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Ethylbenzene	0.0016	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Isopropylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
4-Isopropyltoluene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Naphthalene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
n-Propylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Styrene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495

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ANALYTICAL REPORT

Laboratory Number: 99-A23630
Sample ID: 38007 PH2-SW2

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
Toluene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,2,3-Trichlorobenzene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,2,4-Trichlorobenzene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,2,4-Trimethylbenzene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,3,5-Trimethylbenzene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
m,p-Xylenes	0.0014	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
o-Xylene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Hexachlorobutadiene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Bromochloromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Bromodichloromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Bromoform	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Bromomethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Carbon tetrachloride	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Chloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Chloroform	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Chloromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Dibromochloromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Ethylene Dibromide	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Dibromomethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,2,3-Trichloropropane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Vinyl chloride	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Dichlorodifluoromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,1-Dichloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,2-Dichloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,1-Dichloroethene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
cis-1,2-Dichloroethene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
trans-1,2-Dichloroethene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,2-Dichloropropane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,3-Dichloropropane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
2,2-Dichloropropane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,1-Dichloropropene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
cis-1,3-Dichloropropene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
trans-1,3-Dichloropropene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Methylene chloride	ND	mg/l	0.0050	0.0050	1	2/20/99	17:01	T McCollum	8021B	9495
1,1,1,2-Tetrachloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,1,2,2-Tetrachloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Tetrachloroethene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,1,1-Trichloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,1,2-Trichloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Trichloroethene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
Trichlorofluoromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495
1,2-Dibromo-3-chloropropane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:01	T McCollum	8021B	9495

ND = Not detected at the report limit.

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ANALYTICAL REPORT

Laboratory Number: 99-A23630
Sample ID: 38007 PH2-SW2

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Analyst	Method
PAH's	960. ml	1.00 ml	2/22/99	Fitzwater	3510

Surrogate	% Recovery	Target Range
PID Surr., a,a,a-trifluorotoluene	100.	50. - 150.
Hall Surr., chloroprene	91.	63. - 122.
Hall Surr., 1-chloro-3-fluorobenzene	76.	59. - 117.
PAH Surr., p-terphenyl d14	88.	20. - 140.

Report Approved By: Eric S. Smith Report Date: 2/27/99

Theodore J. Duello, Ph.D., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Services
Eric Smith, Assistant Technical Director

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ANALYTICAL REPORT

DIRECTOR U.S. ARMY CORPS ENG. 5394
CESAD LABORATORY-BLDG 400
200 N COBB PKWY, STE 404
MARIETTA, GA 30062

Lab Number: 99-A23631
Sample ID: 38008 PH2-SW3
Sample Type: Water
Site ID:

Date Collected: 2/17/99
Time Collected: 17:00
Date Received: 2/19/99
Time Received: 9:00

Project:
Project Name:
Sampler:

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
ORGANIC PARAMETERS										
Naphthalene	ND	ng/l	0.00103	0.00100	1	2/23/99	21:43	Noorbakhsh	8310	1038
Acenapthene	ND	ng/l	0.00103	0.00100	1	2/23/99	21:43	Noorbakhsh	8310	1038
Anthracene	ND	ng/l	0.00068	0.00066	1	2/23/99	21:43	Noorbakhsh	8310	1038
Fluoranthene	ND	ng/l	0.00022	0.00021	1	2/23/99	21:43	Noorbakhsh	8310	1038
Fluorene	ND	ng/l	0.00022	0.00021	1	2/23/99	21:43	Noorbakhsh	8310	1038
Pyrene	ND	ng/l	0.00028	0.00027	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(a)anthracene	ND	ng/l	0.00013	0.00013	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(a)pyrene	ND	ng/l	0.00010	0.00010	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(b)fluoranthene	ND	ng/l	0.00019	0.00018	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(k)fluoranthene	ND	ng/l	0.00018	0.00017	1	2/23/99	21:43	Noorbakhsh	8310	1038
Chrysene	ND	ng/l	0.00015	0.00015	1	2/23/99	21:43	Noorbakhsh	8310	1038
Dibenzo(a,h)anthracene	ND	ng/l	0.00031	0.00030	1	2/23/99	21:43	Noorbakhsh	8310	1038
Indeno(1,2,3-cd)pyrene	ND	ng/l	0.00044	0.00043	1	2/23/99	21:43	Noorbakhsh	8310	1038
Acenaphthylene	ND	ng/l	0.00206	0.00200	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(g,h,i)perylene	ND	ng/l	0.00078	0.00076	1	2/23/99	21:43	Noorbakhsh	8310	1038
Phenanthrene	ND	ng/l	0.00066	0.00064	1	2/23/99	21:43	Noorbakhsh	8310	1038
1-Methylnapthalene	ND	ng/l	0.00206	0.00200	1	2/23/99	21:43	Noorbakhsh	8310	1038
2-Methylnapthalene	ND	ng/l	0.00206	0.00200	1	2/23/99	21:43	Noorbakhsh	8310	1038
VOLATILE ORGANICS by GC										
Benzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Bromobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
n-Butylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
sec-Butylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
tert-Butylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Chlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
2-Chlorotoluene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
4-Chlorotoluene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,2-Dichlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,3-Dichlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,4-Dichlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Ethylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Isopropylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
4-Isopropyltoluene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Naphthalene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
n-Propylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Styrene	ND	ng/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495

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ANALYTICAL REPORT

Laboratory Number: 99-A23631
Sample ID: 38008 PH2-SW3

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
Toluene	0.0020	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,2,3-Trichlorobenzene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,2,4-Trichlorobenzene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,2,4-Trimethylbenzene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,3,5-Trimethylbenzene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
m,p-Xylenes	0.0041	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
o-Xylene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Hexachlorobutadiene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Bromochloromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Bromodichloromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Bromoform	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Bromomethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Carbon tetrachloride	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Chloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Chloroform	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Chloromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Dibromochloromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Ethylene Dibromide	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Dibromomethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,2,3-Trichloropropane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Vinyl chloride	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Dichlorodifluoromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,1-Dichloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,2-Dichloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,1-Dichloroethene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
cis-1,2-Dichloroethene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
trans-1,2-Dichloroethene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,2-Dichloropropane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,3-Dichloropropane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
2,2-Dichloropropane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,1-Dichloropropene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
cis-1,3-Dichloropropene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
trans-1,3-Dichloropropene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Methylene chloride	ND	mg/l	0.0050	0.0050	1	2/20/99	17:45	T McCollum	8021B	9495
1,1,1,2-Tetrachloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,1,2,2-Tetrachloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Tetrachloroethene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,1,1-Trichloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,1,2-Trichloroethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Trichloroethene	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
Trichlorofluoromethane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495
1,2-Dibromo-3-chloropropane	ND	mg/l	0.0010	0.0010	1	2/20/99	17:45	T McCollum	8021B	9495

ND = Not detected at the report limit.

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ANALYTICAL REPORT

Laboratory Number: 99-A23631
Sample ID: 38008 PH2-SW3

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Analyst	Method
PAH's	970. ml	1.00 ml	2/22/99	Fitzwater	3510

Surrogate	% Recovery	Target Range
PID Surr., a,a,a-trifluorotoluene	101.	50. - 150.
Hall Surr., chloroprene	83.	63. - 122.
Hall Surr., 1-chloro-3-fluorobenzene	75.	59. - 117.
PAH Surr., p-terphenyl d14	78.	20. - 140.

Report Approved By: Eric S. Smith Report Date: 2/27/99

Theodore J. Duello, Ph.D., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Services
Eric Smith, Assistant Technical Director

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ANALYTICAL REPORT

DIRECTOR U.S. ARMY CORPS ENG. 5394
CESAD LABORATORY-BLDG 400
200 N COBB PKWY, STE 404
MARIETTA, GA 30062

Project:
Project Name:
Sampler:

Lab Number: 99-A23632
Sample ID: 38009 PH2-SWE04
Sample Type: Water
Site ID:

Date Collected: 2/17/99
Time Collected: 17:05
Date Received: 2/19/99
Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
ORGANIC PARAMETERS										
Naphthalene	ND	ng/l	0.00101	0.00100	1	2/23/99	21:43	Noorbakhsh	8310	1038
Acenapthene	ND	ng/l	0.00101	0.00100	1	2/23/99	21:43	Noorbakhsh	8310	1038
Anthracene	ND	ng/l	0.00067	0.00066	1	2/23/99	21:43	Noorbakhsh	8310	1038
Fluoranthene	ND	ng/l	0.00021	0.00021	1	2/23/99	21:43	Noorbakhsh	8310	1038
Fluorene	ND	ng/l	0.00021	0.00021	1	2/23/99	21:43	Noorbakhsh	8310	1038
Pyrene	ND	ng/l	0.00027	0.00027	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(a)anthracene	ND	ng/l	0.00013	0.00013	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(a)pyrene	ND	ng/l	0.00010	0.00010	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(b)fluoranthene	ND	ng/l	0.00018	0.00018	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(k)fluoranthene	ND	ng/l	0.00017	0.00017	1	2/23/99	21:43	Noorbakhsh	8310	1038
Chrysene	ND	ng/l	0.00015	0.00015	1	2/23/99	21:43	Noorbakhsh	8310	1038
Dibenzo(a,h)anthracene	ND	ng/l	0.00030	0.00030	1	2/23/99	21:43	Noorbakhsh	8310	1038
Indeno(1,2,3-cd)pyrene	ND	ng/l	0.00043	0.00043	1	2/23/99	21:43	Noorbakhsh	8310	1038
Acenaphthylene	ND	ng/l	0.00202	0.00200	1	2/23/99	21:43	Noorbakhsh	8310	1038
Benzo(g,h,i)perylene	ND	ng/l	0.00077	0.00076	1	2/23/99	21:43	Noorbakhsh	8310	1038
Phenanthrene	ND	ng/l	0.00065	0.00064	1	2/23/99	21:43	Noorbakhsh	8310	1038
1-Methylnapthalene	ND	ng/l	0.00202	0.00200	1	2/23/99	21:43	Noorbakhsh	8310	1038
2-Methylnapthalene	ND	ng/l	0.00202	0.00200	1	2/23/99	21:43	Noorbakhsh	8310	1038
VOLATILE ORGANICS by GC										
Benzene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Bromobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
n-Butylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
sec-Butylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
tert-Butylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Chlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
2-Chlorotoluene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
4-Chlorotoluene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,2-Dichlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,3-Dichlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,4-Dichlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Ethylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Isopropylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
4-Isopropyltoluene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Naphthalene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
n-Propylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Styrene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495

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ANALYTICAL REPORT

Laboratory Number: 99-A23632
Sample ID: 38009 PH2-SWE04

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
Toluene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,2,3-Trichlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,2,4-Trichlorobenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,2,4-Trimethylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,3,5-Trimethylbenzene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
m,p-Xylenes	0.0031	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
o-Xylene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Hexachlorobutadiene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Bromochloromethane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Bromodichloromethane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Bromoform	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Bromomethane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Carbon tetrachloride	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Chloroethane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Chloroform	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Chloromethane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Dibromochloromethane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Ethylene Dibromide	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Dibromomethane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,2,3-Trichloropropane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Vinyl chloride	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Dichlorodifluoromethane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,1-Dichloroethane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,2-Dichloroethane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,1-Dichloroethene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
cis-1,2-Dichloroethene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
trans-1,2-Dichloroethene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,2-Dichloropropane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,3-Dichloropropane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
2,2-Dichloropropane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,1-Dichloropropene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
cis-1,3-Dichloropropene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
trans-1,3-Dichloropropene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Methylene chloride	ND	ng/l	0.0050	0.0050	1	2/20/99	18:29	T McCollum	8021B	9495
1,1,1,2-Tetrachloroethane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,1,2,2-Tetrachloroethane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Tetrachloroethene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,1,1-Trichloroethane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,1,2-Trichloroethane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Trichloroethene	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
Trichlorofluoromethane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495
1,2-Dibromo-3-chloropropane	ND	ng/l	0.0010	0.0010	1	2/20/99	18:29	T McCollum	8021B	9495

ND = Not detected at the report limit.

COPY 1

SPECIALIZED
ASSAYS, INC.
2960 Foster Creighton Dr.
P.O. Box 40566
Nashville, TN 37204-0566
Phone 1-615-726-0177

ANALYTICAL REPORT

Laboratory Number: 99-A23632
Sample ID: 38009 PH2-SWE04

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Analyst	Method
PAH's	990. ml	1.00 ml	2/22/99	Fitzwater	3510

Surrogate	% Recovery	Target Range
PID Surr., a,a,a-trifluorotoluene	101.	50. - 150.
Hall Surr., chloroprene	85.	63. - 122.
Hall Surr., 1-chloro-3-fluorobenzene	73.	59. - 117.
PAH Surr., p-terphenyl d14	82.	20. - 140.

Report Approved By: Eric S Smith Report Date: 2/27/99

Theodore J. Duello, Ph.D., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Services
Eric Smith, Assistant Technical Director

COPY 1

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

PROJECT NAME: Hunter AAF Pump House 1 & 2

TASK ORDER NO.

PROJECT NO:

SAMPLE EVENT:

LABORATORY ID:

PROGRAM TYPE:

SAMPLER(S) NAME: DHoward / GRowell

SAMPLER(S) SIGNATURE: Daniel Howard / Gene Rowell

ANALYTICAL PARAMETERS/METHODS

DATE	TIME MILITARY	MATRIX (S,W,T)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F) FIELD	VOCs BTEX Method No. 8021	SVOC	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO	GRO	
2/17/99	1645	W	PH2-SW1				3	Y	—									
	1650	W	PH2-SW2				3	Y	—									
	1700	W	PH2-SW3				3	Y	—									
	1705	W	PH2-SWE04				3	Y	—									
	1708	W	PH1-SW1				3	Y	—									
	1710	W	PH1-SW2				3	Y	—									
	1712	W	PH1-SW3				3	Y	—									
	1712	W	PH1-SW3D				3	Y	—									
	1715	W	PH1-SW4				3	Y	—									
	1720	W	PH1-SWE07				3	Y	—									
	1630	W	TB01				3	Y	—									
↓	—	W	TEMP	Blank			1											

Relinquished by: (Signature) Daniel Howard Date/Time: 2/17/99/1900

Received by: Date/Time: 2-18-99 1020

Cooler Temperature:

Remarks:

AIRBILL CO. FedEx

TRACKING NO: 305129196l

Send Results to:

~~Christine Hottinger c/o METCALF & EDDY, INC.~~
~~1201 Peachtree St., N.E., 400 Colony Square, Suite 1101~~
~~Atlanta, Georgia 30361~~
~~(404) 881-8010, FAX (404) 872-3161~~

STANDARD PRESERVATION (Y):

(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER

STORED/SHIPPED IN ICE (Y)N

CHAIN - OF - CUSTODY - RECORD

Metcalf & Eddy

Hunter AAF

PROJECT NAME: Pump House 1+2

PROJECT NO:

LABORATORY ID:

SAMPLER(S) NAME: D Howard / G Rowell

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: Daniel Howard / G Rowell

DATE	TIME	MATRIX	SAMPLE IDENTIFICATION	SITE ID	QC CODE	DEPTH (FT)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)	FILTERED (L) LAB (F) FIELD
2/17/99	1645	W	PH2-SW1				1	N	—
	1650	W	PH2-SW2				1	N	—
	1700	W	PH2-SW3				1	N	—
	1705	W	PH2-SWE04				1	N	—
	1708	W	PH1-SW1				1	N	—
	1710	W	PH1-SW2				1	N	—
	1712	W	PH1-SW3				1	N	—
	1712	W	PH1-SW3D				1	N	—
	1715	W	PH1-SW4				1	N	—
↓	1720	W	PH1-SWE07				1	N	—

ANALYTICAL PARAMETERS/METHODS

Method No.	VOCs	SVOC PAH	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO	GRO	
		8310							
		1							
		1							
		1							
		1							
		1							
		1							
		1							
		1							
		1							
		1							
		1							

Relinquished by: (Signature) Daniel Howard — Date/Time: 2/17/99/1900

Received by: — Date/Time: 2-18-99 1020

Cooler Temperature:

Remarks:

AIRBILL CO. FedEx

TRACKING NO: 305291950

Send Results to:

~~Christine Hettinger c/o METCALF & EDDY, INC.~~
~~1201 Peachtree St. N.E., 400 Colony Square, Suite 1101~~
~~Atla[illegible] Georgia 30361~~
(40[illegible]11-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):

(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER

STORED/SHIPPED — (Y)/N

CAP-PART B
GROUNDWATER ANALYTICAL RESULTS

NOVEMBER 1999 & FEBRUARY 2000

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Table VIII-E. Summary of CAP-Part B Groundwater Analytical Results (1999/2000)

Station:		In-Stream	P2-MW04	P2-MW05	P2-MW06	P2-MW28	P2-MW30
Sample ID:	Federal	Water	PH2MW0402	PH2MW0502	PH2MW0602	PH2MW2802	PH2MW3002
Screened Interval (ft BGS):	SDWA	Quality	6.0 - 16.0	7.5 - 17.5	5.0 - 15.0	8.0 - 18.0	9.0 - 19.0
Collection Date:	MCLs[1]	Standards[2]	11/02/1999	11/02/1999	11/02/1999	11/02/1999	11/02/1999
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
VOLATILE ORGANIC COMPOUNDS							
Benzene	5	71	14 =	2700 =	700 =	25 U	10 U
Toluene	1000	200,000	1 U	1100 =	2100 =	32 =	94 =
Ethylbenzene	700	28,718	0.95 =	1200 =	1200 =	450 =	210 =
Xylene (total)	10000	NRC	2 U	1670 =	5930 =	1450 =	640 =
MTBE	NRC	NRC					
POLYNUCLEAR AROMATIC HYDROCARBONS							
1-Methylnaphthalene	NRC	NRC	*	*	*	*	*
2-Methylnaphthalene	NRC	NRC	*	*	*	*	*
Acenaphthene	NRC	NRC	*	*	*	*	*
Acenaphthylene	NRC	NRC	*	*	*	*	*
Anthracene	NRC	110,000	*	*	*	*	*
Benzo(a)anthracene	NRC	0.0311	*	*	*	*	*
Benzo(a)pyrene	0.2	0.0311	*	*	*	*	*
Benzo(b)fluoranthene	NRC	NRC	*	*	*	*	*
Benzo(g,h,i)perylene	NRC	NRC	*	*	*	*	*
Benzo(k)fluoranthene	NRC	0.0311	*	*	*	*	*
Chrysene	NRC	0.0311	*	*	*	*	*
Dibenzo(a,h)anthracene	NRC	0.0311	*	*	*	*	*
Fluoranthene	NRC	370	*	*	*	*	*
Fluorene	NRC	14,000	*	*	*	*	*
Indeno(1,2,3-cd)pyrene	NRC	0.0311	*	*	*	*	*
Naphthalene	NRC	NRC	*	*	*	*	*
Phenanthrene	NRC	NRC	*	*	*	*	*
Pyrene	NRC	11,000	*	*	*	*	*
NATURAL ATTENUATION PARAMETERS							
Alkalinity as $CaCO_3$			12000 =	220000 =	65000 =	46000 =	23000 =
Ethane			0.35 U	1.3 =	0.35 =	0.68 =	0.66 =
Ethene			0.32 U	0.33 U	0.33 U	0.33 U	0.33 U
Iron, Ferrous +2							
Iron, Ferric +3							
Iron, Total							
Methane			1 =	2000 =	580 =	3.4 =	38 =
Nitrate/Nitrite			130 =	160 =	69 =	87 =	100 =
Oxidation Reduction Potential			+110 mV =	-6.3 mV =	-160 mV =	+120 mV =	+120 mV =
Oxygen, Dissolved							
Sulfate as SO_4			38000 =	68000 =	54000 =	130000 =	33000 =
TOC			3700 =	41000 =	16000 =	28000 =	20000 =

NOTES:

1 U.S. Environmental Protection Agency maximum contaminant level

2 GA EPD IWQS (Chapter 391-03-6.03)

Laboratory Qualifiers

U Indicates the compound was not detected at the concentration reported.

UJ Indicates the compound was not detected above an approximated sample quantitation limit.

J Indicates the value for the compound is an estimated value.

= Indicates the compound was detected at the concentration reported.

R Indicates the result was rejected during the data validation process.

Table VIII-E. Summary of CAP-Part B Groundwater Analytical Results (1999/2000) (continued)

Station:		In-Stream	P2-MW31	P2-MW32	P2-MW37	P2-MW38
Sample ID:	Federal	Water	PH2MW3102	PH2MW3202	PH2MW3701	PH2MW3801
Screened Interval (ft BGS):	SDWA	Quality	8.0 - 18.0	30.0 - 35.0	8.1 - 18.1	10.9 - 20.9
Collection Date:	MCLs[1]	Standards[2]	11/02/1999	11/02/1999	11/02/1999	11/02/1999
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
VOLATILE ORGANIC COMPOUNDS						
Benzene	5	71	34 =	1 U	1 U	1 U
Toluene	1000	200,000	77 =	1 U	1 U	1 U
Ethylbenzene	700	28,718	360 =	1 U	1 U	1 U
Xylene (total)	10000	NRC	1660 =	2 U	2 U	2 U
MTBE	NRC	NRC				
POLYNUCLEAR AROMATIC HYDROCARBONS						
1-Methylnaphthalene	NRC	NRC	*	*	1 U	1 U
2-Methylnaphthalene	NRC	NRC	*	*	1 U	1 U
Acenaphthene	NRC	NRC	*	*	1 U	1 U
Acenaphthylene	NRC	NRC	*	*	1 U	1 U
Anthracene	NRC	110,000	*	*	0.2 U	0.2 U
Benzo(a)anthracene	NRC	0.0311	*	*	0.2 U	0.2 U
Benzo(a)pyrene	0.2	0.0311	*	*	0.2 U	0.2 U
Benzo(b)fluoranthene	NRC	NRC	*	*	0.2 U	0.2 U
Benzo(g,h,i)perylene	NRC	NRC	*	*	0.5 U	0.5 U
Benzo(k)fluoranthene	NRC	0.0311	*	*	0.2 U	0.2 U
Chrysene	NRC	0.0311	*	*	0.2 U	0.2 U
Dibenzo(a,h)anthracene	NRC	0.0311	*	*	0.2 U	0.2 U
Fluoranthene	NRC	370	*	*	0.5 U	0.5 U
Fluorene	NRC	14,000	*	*	0.5 U	0.5 U
Indeno(1,2,3-cd)pyrene	NRC	0.0311	*	*	0.2 U	0.2 U
Naphthalene	NRC	NRC	*	*	1 U	1 U
Phenanthrene	NRC	NRC	*	*	0.2 U	0.2 U
Pyrene	NRC	11,000	*	*	0.5 U	0.5 U
NATURAL ATTENUATION PARAMETERS						
Alkalinity as $CaCO_3$			22000 =	14000 =		
Ethane			0.94 =	0.35 U		
Ethene			0.33 U	0.33 U		
Iron, Ferrous +2						
Iron, Ferric +3						
Iron, Total						
Methane			6.5 =	1.4 =		
Nitrate/Nitrite			50 U	50 =		
Oxidation Reduction Potential			-130 mV =	+200 mV =		
Oxygen, Dissolved						
Sulfate as SO_4			12000 =	31000 =		
TOC			23000 =	14000 =		

NOTES:

[1] U.S. Environmental Protection Agency maximum contaminant level

[2] GA EPD IWQS (Chapter 391-03-6.03)

Laboratory Qualifiers

- U — Indicates the compound was not detected at the concentration reported.
- UJ — Indicates the compound was not detected above an approximated sample quantitation limit.
- J — Indicates the value for the compound is an estimated value.
- = — Indicates the compound was detected at the concentration reported.
- R — Indicates the result was rejected during the data validation process.

Table VIII-E. Summary of CAP-Part B Groundwater Analytical Results (1999/2000) (continued)

Station:		In-Stream	P2-MW39	P2-MW41	P2-MW43	P2-MW29A
Sample ID:	Federal	Water	PH1MW3901	PH2MW4101	PH2MW4301	AM2912
Screened Interval (ft BGS):	SDWA	Quality	9.1 - 19.1	5.3 - 25.3	5.6 - 15.6	
Collection Date:	MCLs[1]	Standards[2]	11/02/1999	11/02/1999	11/02/1999	02/18/2000
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
VOLATILE ORGANIC COMPOUNDS						
Benzene	5	71	1 U	660 =	1 U	572 =
Toluene	1000	200,000	1 U	750 =	1 U	296 =
Ethylbenzene	700	28,718	1 U	190 =	1 U	391 =
Xylene (total)	10000	NRC	2 U	840 =	2 U	1280 =
MTBE	NRC	NRC				
POLYNUCLEAR AROMATIC HYDROCARBONS						
1-Methylnaphthalene	NRC	NRC	1 U	1.4 =	1 U	*
2-Methylnaphthalene	NRC	NRC	1 U	3.8 =	1 U	*
Acenaphthene	NRC	NRC	1 U	1 U	1 U	*
Acenaphthylene	NRC	NRC	1 U	6.1 =	1 U	*
Anthracene	NRC	110,000	0.2 U	0.2 U	0.2 U	*
Benzo(a)anthracene	NRC	0.0311	0.2 U	0.2 U	0.2 U	*
Benzo(a)pyrene	0.2	0.0311	0.2 U	0.2 U	0.2 U	*
Benzo(b)fluoranthene	NRC	NRC	0.2 U	0.2 U	0.2 U	*
Benzo(g,h,i)perylene	NRC	NRC	0.5 U	0.5 U	0.5 U	*
Benzo(k)fluoranthene	NRC	0.0311	0.2 U	0.2 U	0.2 U	*
Chrysene	NRC	0.0311	0.2 U	0.2 U	0.2 U	*
Dibenzo(a,h)anthracene	NRC	0.0311	0.2 U	0.2 U	0.2 U	*
Fluoranthene	NRC	370	0.5 U	0.5 U	0.5 U	*
Fluorene	NRC	14,000	0.5 U	0.5 =	0.5 U	*
Indeno(1,2,3-cd)pyrene	NRC	0.0311	0.2 U	0.2 U	0.2 U	*
Naphthalene	NRC	NRC	1 U	22 =	1 U	*
Phenanthrene	NRC	NRC	0.2 U	1.5 =	0.2 U	*
Pyrene	NRC	11,000	0.5 U	0.5 U	0.5 U	*
NATURAL ATTENUATION PARAMETERS						
Alkalinity as $CaCO_3$						
Ethane						
Ethene						
Iron, Ferrous +2						
Iron, Ferric +3						
Iron, Total						
Methane						
Nitrate/Nitrite						
Oxidation Reduction Potential						
Oxygen, Dissolved						
Sulfate as SO_4						
TOC						

NOTES:

1 U.S. Environmental Protection Agency maximum contaminant level

2 GA EPD IWQS (Chapter 391-03-6.03)

Laboratory Qualifiers

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Savannah Laboratories
5102 LaRoche Avenue · Savannah, GA 31404 · (912) 354-7858 · Fax (912) 352-0165 · www.stlsavlab.com

LOG NO: S9-17363
Received: 03 NOV 99
Reported: 13 DEC 99

Ms. Christine Hettinger
Metcalf & Eddy
Two Sun Court, Suite 200
Norcross, GA 30092

Client PO. No.: 250276

Contract No.: 94-016159-001
Project: HAA72/019457-4113/Hunter Cap Pt. B Pumpphase #1/031
Sampled By: Client
Code: 163591213

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363-1	PH2MW0402	11-02-99/12:00	HAA73
17363-2	PH2MW3002	11-02-99/12:10	HAA73
17363-3	PH2MW3102	11-02-99/12:40	HAA73
17363-3-DL	PH2MW3102	11-02-99/12:40	HAA73
17363-4	PH2MW0502	11-02-99/13:00	HAA73

Pump House # 2

PARAMETER	17363-1	17363-2	17363-3	17363-3-DL	17363-4
Halogenated and Aromatic Volatiles (8021)					
Benzene, ug/l	14	10U	20U	34DJ	2700E
Ethylbenzene, ug/l	0.95J	210	390	360D	1300
Toluene, ug/l	1.0U	94	26	77D	1000
o-Xylene, ug/l	1.0U	160	260	250D	270
m&p-Xylene, ug/l	1.0U	480	1440E	1410D	1560
Surrogate - a,a,a-Trifluorotoluene	97 %	97 %	97 %	93 %	93 %
Dilution Factor	1.0	10.0	20.0	50.0	50.0
Analysis Date	11.09.99	11.09.99	11.09.99	11.09.99	11.09.99
Analysis Time	2119	0457	0533	1525	0610
Batch ID	1D1109	2D1108	2D1108	1D1109	2D1108
Dissolved Gases					
Methane, ug/l	1.0	38	6.5	---	240E
Ethane, ug/l	0.35U	0.66	0.94	---	1.3
Ethene, ug/l	0.33U	0.33U	0.33U	---	0.33U
Dilution Factor	1.0	1.0	1.0	---	1.0
Analysis Date	11.16.99	11.16.99	11.16.99	---	11.16.99
Analysis Time	1249	1300	1311	---	1319
Batch ID	1C1116	1C1116	1C1116	---	1C1116

Savannah Laboratories
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LOG NO: S9-17363
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Two Sun Court, Suite 200
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Contract No.: 94-016159-001
Project: HAA72/019457-4113/Hunter Cap Pt. B Pumpphase #1/031
Sampled By: Client
Code: 163591213

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363-1	PH2MW0402	11-02-99/12:00	HAA73
17363-2	PH2MW3002	11-02-99/12:10	HAA73
17363-3	PH2MW3102	11-02-99/12:40	HAA73
17363-3-DL	PH2MW3102	11-02-99/12:40	HAA73
17363-4	PH2MW0502	11-02-99/13:00	HAA73

PumpHouse #2

PARAMETER	17363-1	17363-2	17363-3	17363-3-DL	17363-4
Total Organic Carbon (9060), mg/l	3.7	20	23		41
Dilution Factor	1.0	1.0	1.0	---	1.0
Prep Date	11.05.99	11.05.99	11.05.99	---	11.05.99
Analysis Date	11.05.99	11.05.99	11.05.99	---	11.05.99
Batch ID	1105B	1105B	1105B	---	1105B
Nitrate + Nitrite-N (353.2), mg/l	0.13	0.10	0.050U		0.16
Dilution Factor	1	1	1	---	1
Prep Date	11.04.99	11.04.99	11.04.99	---	11.04.99
Analysis Date	11.04.99	11.04.99	11.04.99	---	11.04.99
Analysis Time	1354	1356	1358	---	1359
Batch ID	1104A	1104A	1104A	---	1104A
Oxidation Reduction Potential (D1498-76), mV	+110	+120	-130		-6.3
Dilution Factor	1.0	1.0	1.0	---	1.0
Prep Date	11.03.99	11.03.99	11.03.99	---	11.03.99
Analysis Date	11.03.99	11.03.99	11.03.99	---	11.03.99
Batch ID	1103A	1103A	1103A	---	1103A

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LOG NO: S9-17363
Received: 03 NOV 99
Reported: 13 DEC 99

Ms. Christine Hettinger
Metcalf & Eddy
Two Sun Court, Suite 200
Norcross, GA 30092

Client PO. No.: 250276

Contract No.: 94-016159-001
Project: HAA72/019457-4113/Hunter Cap Pt. B Pumpphase #1/031
Sampled By: Client
Code: 163591213

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363-1	PH2MW0402	11-02-99/12:00	HAA73
17363-2	PH2MW3002	11-02-99/12:10	HAA73
17363-3	PH2MW3102	11-02-99/12:40	HAA73
17363-3-DL	PH2MW3102	11-02-99/12:40	HAA73
17363-4	PH2MW0502	11-02-99/13:00	HAA73

Pump House #2

PARAMETER	17363-1	17363-2	17363-3	17363-3-DL	17363-4
Alkalinity (to pH 4.5) as CaCO3 (310.1), mg/l	12	23	22		220
Dilution Factor	1.0	1.0	1.0	---	1.0
Prep Date	11.04.99	11.04.99	11.04.99	---	11.04.99
Analysis Date	11.04.99	11.04.99	11.04.99	---	11.04.99
Batch ID	1104B	1104B	1104B	---	1104B
Sulfate as SO4 (375.4), mg/l	38	33	12		68
Dilution Factor	1.0	1.0	1.0	---	2.0
Prep Date	11.18.99	11.18.99	11.18.99	---	11.18.99
Analysis Date	11.18.99	11.18.99	11.18.99	---	11.18.99
Batch ID	1118A	1118A	1118A	---	1118A

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Sampled By: Client
Code: 163591213

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363-4-DL	PH2MW0502	11-02-99/13:00	HAA73
17363-5	PH2MW8102	11-02-99/13:00	HAA73
17363-5-DL	PH2MW8102	11-02-99/13:00	HAA73
17363-6	PH2MW3202	11-02-99/13:40	HAA73
17363-7	PH2MW0602	11-02-99/14:10	HAA73

Pump House #2

PARAMETER	17363-4-DL	17363-5	17363-5-DL	17363-6	17363-7
Halogenated and Aromatic Volatiles (8021)					
Benzene, ug/l	2700D	2400E	2400D	1.0U	500E
Ethylbenzene, ug/l	1200D	1200	1200D	1.0U	590E
Toluene, ug/l	1100D	980	870D	1.0U	520E
o-Xylene, ug/l	240D	240	230D	1.0U	490E
m&p-Xylene, ug/l	1430D	1280	1390D	1.0U	800E
Surrogate - a,a,a-Trifluorotoluene	90 %	97 %	97 %	97 %	90 %
Dilution Factor	100.0	50.0	100.0	1.0	1.0
Analysis Date	11.09.99	11.09.99	11.09.99	11.08.99	11.08.99
Analysis Time	1602	0646	1637	2217	2253
Batch ID	1D1109	2D1108	1D1109	2D1108	2D1108
Dissolved Gases					
Methane, ug/l	2000D	220E	1400D	1.4	80E
Ethane, ug/l	18U	0.98	18U	0.35U	0.35
Ethene, ug/l	16U	0.33U	16U	0.33U	0.33U
Dilution Factor	50.0	1.0	50.0	1.0	1.0
Analysis Date	11.16.99	11.16.99	11.16.99	11.16.99	11.16.99
Analysis Time	2000	1328	2018	1337	1346
Batch ID	1C1116	1C1116	1C1116	1C1116	1C1116

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Norcross, GA 30092

Client PO. No.: 250276

Contract No.: 94-016159-001
Project: HAA72/019457-4113/Hunter Cap Pt. B Pumpphase #1/031
Sampled By: Client
Code: 163591213

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363-4-DL	PH2MW0502	11-02-99/13:00	HAA73
17363-5	PH2MW8102	11-02-99/13:00	HAA73
17363-5-DL	PH2MW8102	11-02-99/13:00	HAA73
17363-6	PH2MW3202	11-02-99/13:40	HAA73
17363-7	PH2MW0602	11-02-99/14:10	HAA73

Pumphouse #2

PARAMETER	17363-4-DL	17363-5	17363-5-DL	17363-6	17363-7
Total Organic Carbon (9060), mg/l		40		1.4	16
Dilution Factor	---	1.0	---	1.0	1.0
Prep Date	---	11.05.99	---	11.07.99	11.05.99
Analysis Date	---	11.05.99	---	11.07.99	11.05.99
Batch ID	---	1105B	---	1107A	1105B
Nitrate + Nitrite-N (353.2), mg/l		0.077		0.050	0.069
Dilution Factor	---	1	---	1	1
Prep Date	---	11.04.99	---	11.04.99	11.04.99
Analysis Date	---	11.04.99	---	11.04.99	11.04.99
Analysis Time	---	1402	---	1403	1404
Batch ID	---	1104A	---	1104A	1104A
Oxidation Reduction Potential (D1498-76), mV		+230		+200	-160
Dilution Factor	---	1.0	---	1.0	1.0
Prep Date	---	11.03.99	---	11.03.99	11.03.99
Analysis Date	---	11.03.99	---	11.03.99	11.03.99
Batch ID	---	1103A	---	1103A	1103A

↑
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Client PO. No.: 250276

Contract No.: 94-016159-001
Project: HAA72/019457-4113/Hunter Cap Pt. B Pumpphase #1/031
Sampled By: Client
Code: 163591213

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363-4-DL	PH2MW0502	11-02-99/13:00	HAA73
17363-5	PH2MW8102	11-02-99/13:00	HAA73
17363-5-DL	PH2MW8102	11-02-99/13:00	HAA73
17363-6	PH2MW3202	11-02-99/13:40	HAA73
17363-7	PH2MW0602	11-02-99/14:10	HAA73

Pump House #2

PARAMETER	17363-4-DL	17363-5	17363-5-DL	17363-6	17363-7
Alkalinity (to pH 4.5) as CaCO3 (310.1), mg/l		230		14	65
Dilution Factor	---	1.0	---	1.0	1.0
Prep Date	---	11.04.99	---	11.04.99	11.04.99
Analysis Date	---	11.04.99	---	11.04.99	11.04.99
Batch ID	---	1104B	---	1104B	1104B
Sulfate as SO4 (375.4), mg/l		55		31	54
Dilution Factor	---	2.0	---	1.0	2.0
Prep Date	---	11.18.99	---	11.18.99	11.18.99
Analysis Date	---	11.18.99	---	11.18.99	11.18.99
Batch ID	---	1118A	---	1118A	1118A

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LOG NO: S9-17363
Received: 03 NOV 99
Reported: 13 DEC 99

Ms. Christine Hettinger
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Two Sun Court, Suite 200
Norcross, GA 30092

Client PO. No.: 250276

Contract No.: 94-016159-001
Project: HAA72/019457-4113/Hunter Cap Pt. B Pumpphase #1/031
Sampled By: Client
Code: 163591213

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363-7-DL	PH2MW0602 } Pump House #2	11-02-99/14:10	HAA73
17363-8	PH2MW2802 } Pump House #2	11-02-99/14:00	HAA73

PARAMETER	17363-7-DL	17363-8
Halogenated and Aromatic Volatiles (8021)		
Benzene, ug/l	700D	25U
Ethylbenzene, ug/l	1200D	450
Toluene, ug/l	2100D	32
o-Xylene, ug/l	730D	220
m&p-Xylene, ug/l	5200D	1230
Surrogate - a,a,a-Trifluorotoluene	97 %	90 %
Dilution Factor	100.0	25.0
Analysis Date	11.09.99	11.09.99
Analysis Time	2156	1407
Batch ID	1D1109	1D1109
Dissolved Gases		
Methane, ug/l	580D	3.4
Ethane, ug/l	7.0U	0.68
Ethene, ug/l	6.6U	0.33U
Dilution Factor	20.0	1.0
Analysis Date	11.16.99	11.16.99
Analysis Time	2105	1426
Batch ID	1C1116	1C1116

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Sampled By: Client
Code: 163591213

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363-7-DL	PH2MW0602 } Pump House #2	11-02-99/14:10	HAA73
17363-8	PH2MW2802 }	11-02-99/14:00	HAA73

PARAMETER		17363-7-DL	17363-8
Total Organic Carbon (9060), mg/l			28
Dilution Factor		---	1.0
Prep Date		---	11.05.99
Analysis Date		---	11.06.99
Batch ID		---	1105B
Nitrate + Nitrite-N (353.2), mg/l			0.087
Dilution Factor		---	1
Prep Date		---	11.04.99
Analysis Date		---	11.04.99
Analysis Time		---	1408
Batch ID		---	1104A
Oxidation Reduction Potential (D1498-76), mV			+120
Dilution Factor		---	1.0
Prep Date		---	11.03.99
Analysis Date		---	11.03.99
Batch ID		---	1103A
Alkalinity (to pH 4.5) as CaCO3 (310.1), mg/l			46
Dilution Factor		---	1.0
Prep Date		---	11.04.99
Analysis Date		---	11.04.99
Batch ID		---	1104B

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Sampled By: Client
Code: 163591213

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363-7-DL	PH2MW0602 } Pump House #2	11-02-99/14:10	HAA73
17363-8	PH2MW2802 }	11-02-99/14:00	HAA73

PARAMETER		17363-7-DL	17363-8
Sulfate as SO4 (375.4), mg/l			130
Dilution Factor		---	5.0
Prep Date		---	11.23.99
Analysis Date		---	11.23.99
Batch ID		---	1123A

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Norcross, GA 30092

Client PO. No.: 250276

Contract No.: 94-016159-001
Project: HAA72/019457-4113/Hunter Cap Pt. B Pumpphase #1/031
Sampled By: Client
Code: 163591213

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363-9	PH2MW4101	11-02-99/13:25	HAA73
17363-10	PH2MW4301	11-02-99/15:30	HAA73
17363-11	PH2MW3701	11-02-99/15:45	HAA73
17363-12	PH2MW8201	11-02-99/15:45	HAA73
17363-13	PH2MW3801	11-02-99/16:05	HAA73

Pumphouse #2

PARAMETER	17363-9	17363-10	17363-11	17363-12	17363-13
Halogenated and Aromatic Volatiles (8021)					
Benzene, ug/l	660	1.0U	1.0U	1.0U	1.0U
Ethylbenzene, ug/l	190	1.0U	1.0U	1.0U	1.0U
Toluene, ug/l	750	1.0U	1.0U	1.0U	1.0U
o-Xylene, ug/l	270	1.0U	1.0U	1.0U	1.0U
m&p-Xylene, ug/l	570	1.0U	1.0U	1.0U	1.0U
Surrogate - a,a,a-Trifluorotoluene	93 %	97 %	97 %	97 %	97 %
Dilution Factor	25.0	1.0	1.0	1.0	1.0
Analysis Date	11.09.99	11.09.99	11.09.99	11.09.99	11.09.99
Analysis Time	1331	1818	0006	0042	2006
Batch ID	1D1109	1D1109	2D1108	2D1108	1D1109

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363-9	PH2MW4101	11-02-99/13:25	HAA73
17363-10	PH2MW4301	11-02-99/15:30	HAA73
17363-11	PH2MW3701	11-02-99/15:45	HAA73
17363-12	PH2MW8201	11-02-99/15:45	HAA73
17363-13	PH2MW3801	11-02-99/16:05	HAA73

PumpHouse #2

PARAMETER	17363-9	17363-10	17363-11	17363-12	17363-13
Polynuclear Aromatics (8310)					
Acenaphthene, ug/l	1.0U	1.0U	1.0U	1.0U	1.0U
Acenaphthylene, ug/l	6.1	1.0U	1.0U	1.0U	1.0U
Anthracene, ug/l	0.20U	0.20U	0.20U	0.20U	0.20U
Benzo(a)anthracene, ug/l	0.20U	0.20U	0.20U	0.20U	0.20U
Benzo(a)pyrene, ug/l	0.20U	0.20U	0.20U	0.20U	0.20U
Benzo(b)fluoranthene, ug/l	0.20U	0.20U	0.20U	0.20U	0.20U
Benzo(g,h,i)perylene, ug/l	0.50U	0.50U	0.50U	0.50U	0.50U
Benzo(k)fluoranthene, ug/l	0.20U	0.20U	0.20U	0.20U	0.20U
Chrysene, ug/l	0.20U	0.20U	0.20U	0.20U	0.20U
Dibenzo(a,h)anthracene, ug/l	0.20U	0.20U	0.20U	0.20U	0.20U
Fluoranthene, ug/l	0.50U	0.50U	0.50U	0.50U	0.50U
Fluorene, ug/l	0.50	0.50U	0.50U	0.50U	0.50U
Indeno(1,2,3-cd)pyrene, ug/l	0.20U	0.20U	0.20U	0.20U	0.20U
Naphthalene, ug/l	22	1.0U	1.0U	1.0U	1.0U
Phenanthrene, ug/l	1.5	0.20U	0.20U	0.20U	0.20U
Pyrene, ug/l	0.50U	0.50U	0.50U	0.50U	0.50U
1-Methylnaphthalene, ug/l	1.4P	1.0U	1.0U	1.0U	1.0U
2-Methylnaphthalene, ug/l	3.8	1.0U	1.0U	1.0U	1.0U

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Sampled By: Client
Code: 163591213

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363-9	PH2MW4101	11-02-99/13:25	HAA73
17363-10	PH2MW4301	11-02-99/15:30	HAA73
17363-11	PH2MW3701	11-02-99/15:45	HAA73
17363-12	PH2MW8201	11-02-99/15:45	HAA73
17363-13	PH2MW3801	11-02-99/16:05	HAA73

PumpHouse #2

PARAMETER	17363-9	17363-10	17363-11	17363-12	17363-13
Surrogate - Terphenyl-d14	112 %	76 %	80 %	80 %	72 %
Dilution Factor	1.0	1.0	1.0	1.0	1.0
Prep Date	11.05.99	11.05.99	11.05.99	11.05.99	11.05.99
Analysis Date	11.17.99	11.17.99	11.17.99	11.17.99	11.17.99
Analysis Time	1720	1806	1852	1938	2024
Batch ID	1105J	1105J	1105J	1105J	1105J

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Sampled By: Client
Code: 163591213

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363-14	PHEB02 } Pump House #2	11-02-99/17:00	HAA73

PARAMETER	17363-14
Halogenated and Aromatic Volatiles (8021)	
Benzene, ug/l	1.0U
Ethylbenzene, ug/l	1.0U
Toluene, ug/l	1.0U
o-Xylene, ug/l	1.0U
m&p-Xylene, ug/l	1.0U
Surrogate - a,a,a-Trifluorotoluene	97 %
Dilution Factor	1.0
Analysis Date	11.09.99
Analysis Time	2043
Batch ID	1D1109

↑ RINSATE

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Sampled By: Client
Code: 163591213

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363-14	PHEB02 } Pump House #2	11-02-99/17:00	HAA73

PARAMETER	17363-14
Polynuclear Aromatics (8310)	
Acenaphthene, ug/l	1.0U
Acenaphthylene, ug/l	1.0U
Anthracene, ug/l	0.20U
Benzo(a)anthracene, ug/l	0.20U
Benzo(a)pyrene, ug/l	0.20U
Benzo(b)fluoranthene, ug/l	0.20U
Benzo(g,h,i)perylene, ug/l	0.50U
Benzo(k)fluoranthene, ug/l	0.20U
Chrysene, ug/l	0.20U
Dibenzo(a,h)anthracene, ug/l	0.20U
Fluoranthene, ug/l	0.50U
Fluorene, ug/l	0.50U
Indeno(1,2,3-cd)pyrene, ug/l	0.20U
Naphthalene, ug/l	1.0U
Phenanthrene, ug/l	0.20U
Pyrene, ug/l	0.50U
1-Methylnaphthalene, ug/l	1.0U
2-Methylnaphthalene, ug/l	1.0U
Surrogate - Terphenyl-d14	116 %
Dilution Factor	1.0
Prep Date	11.05.99
Analysis Date	11.17.99
Analysis Time	2110
Batch ID	1105J

↑ RINSATE

Metcalf & Eddy

CHAIN - OF CUSTODY RECORD

VOA p 1 of 2

PROJECT NAME: Hunter 4

PROJECT NO: 019457-4116

LABORATORY ID: SAK LABS

SAMPLER(S) NAME: D. Humphries

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE:

ANALYTICAL PARAMETERS / METHODS

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F) FIELD
11/2/99	1200	W	PH2MW0402	MW04	PP01		5 10		
	1210	W	PH2MW3002	MW30	PP01		5 10		
	1240	W	PH2MW3102	MW31	PP01		5 10		
	1300	W	PH2MW0502	MW05	PP01		5 10		
	1300	W	PH2MW8102	MW05	PD11		5 10		
DW	~~1325~~	~~W~~	~~PH2MW4101~~	~~MW41~~	~~PP01~~		2		
DW	~~1340~~	~~W~~	~~PH2MW3202~~	~~MW32~~	~~PP01~~		5		
	~~1400~~	~~W~~	~~PH2MW2802~~	~~MW28~~	~~PP01~~		5		
	1325	W	PH2-MW4101	MW41	PP01		6		
	1340	W	PH2-MW3202	MW32	PP01		6		
	1400	W	PH2-MW2802	MW28	PP01		6		
	1200	W	PH-TB01 Trip Blank	MW04	BT11		3		
	~~1410~~	~~W~~	~~PH2-MW0602~~	~~MW06~~					

Method No.	VOCs BTEX 8021B	SVOC 9060	METALS ICP Hg CVAA GFAA Nitrate 353.2	HSL 1998-76 SVOC	TCLP VOC/SVOC 1311/1638	PCB 8082	TPH/DRO 8015M	8310	1,2,4,TMB 8021M	MS. GASSES RSK175
	✓	✓	✓	✓	✓	✓				✓
	✓	✓	✓	✓	✓					✓
	✓	✓	✓	✓	✓					✓
	✓	✓	✓	✓	✓					✓
	✓	✓	✓	✓	✓					✓
								✓		
		✓	✓	✓	✓					
		✓	✓	✓	✓					
	✓									✓
	✓									✓
	✓									✓
	✓									

Relinquished by: (Signature) D. Russell — Date/Time: See Page 2 11/2/99 1820

Received by: Fed Ex — Date/Time: 11/03/99 1820

Cooler Temperature: 2.3°C

Remarks:

AIRBILL CO. Hand Delivered

TRACKING NO:

Send Results to: 3917363

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER
STORED/SHIPPED IN ICE (Y)/N

CHAIN - OF - CUSTOD RECORD

VOA p 2 of 2

PROJECT NAME: Hunter 4

PROJECT NO: 019457-4116

LABORATORY ID: SAV LABS

SAMPLER(S) NAME: D Humphris Greg Rowell

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: D. Humphris / G. Rowell

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F) FIELD
11/2/99	1410	W	PH2 MW060 2	MW06	PP01		6		
11/2/99	1410	W	PH2-MW0602MS/MSD	MW06	SL11		6		
	~~1325~~	W	~~PH2-MW410 2~~	MW41	PP01	DH			
	1530	W	PH2-MW4301	MW43	PP01		3		
	1545	W	PH2-MW3701	MW37	PP01		3		
	1545	W	PH2-MW8201	MW37	PD11		3		
	1605	W	PH2-MW3801	MW38	PP01		3		
	1700	W	PH1-MW3601	MW36	PP01		3		
	1700	W	PH1-MW36 MS/MSD	MW36	SL11		3		
	1708	W	PHEB02	MW36	BR11		3		
	1630	W	PH1-MW3901	MW39	PP01		3		
			Temp Blank						

ANALYTICAL PARAMETERS / METHODS

Method No.	VOCS BTEX	SVOC	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO	GRO	25 GASES
8021B									6211M
	✓								✓
	✓								✓
	✓								
	✓								
	✓								
	✓								
	✓								
	✓								
	✓								
	✓								
	✓								

Relinquished by: (Signature) D Humphris

Date/Time: 11/2/99 1820

Received by: [signature]

Date/Time: 11/02/99 1820

Cooler Temperature: 2.3°C

Remarks:

AIRBILL CO. Hand Delivered

TRACKING NO:

Send Results to: 5917363

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____
STORED/SHIPPED IN ICE Y/N

VIII-98

CHAIN - OF CUSTODY RECORD

Metcalf & Eddy

PROJECT NAME: Hunter 4

PROJECT NO: 019457 4116

LABORATORY ID: SAV LABS

SAMPLER(S) NAME: D Humphries / G. Rowell

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: D. Humphries / G. Rowell

ANALYTICAL PARAMETER METHODS

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F)FIELD	VOCs TOC 9060	SVOC NO2 NO3 353.2	METALS ICP Hg CVAA GFAA Reds 1498 .76	HERBICIDES 4A4/SOX 9088 8320B	PCBs PA/HS 8310	B	TPH/DRO	GRO
11/2/99	1410	W	PH2MW0602	MW06	PP01		4	Y		✓	✓	✓	✓				
	1410	W	PH2MW06MS/MSD	MW06	SL11		8			✓	✓	✓	✓				
	1325	W	PH2MW4101	MW41	PP01		4			✓	✓	✓	✓				
	1340	W	PH2MW3202	MW32	PP01		4			✓	✓	✓	✓	✓			
	1400	W	PH2MW2802	MW28	PP01		4			✓	✓	✓	✓				
	1530	W	PH2MW4301	MW43	PB01		2							✓			
	1545	W	PH2MW3701	MW37	PB01		2							✓			
	1545	W	PH2MW8201	MW37	PD11		2							✓			
	~~1605~~	~~W~~	~~PH2MW3801~~	~~MW38~~	PP01		2	DH						✓	DH		
			Temp Blank														

Method No.

Relinquished by: (Signature) D Humphries

Date/Time: 11/2/99 / 1820

Received by:

Date/Time: 11/3/99 1820

Cooler Temperature: 2.4

Remarks:

AIRBILL CO. Hand delivered

TRACKING NO:

Send Results to: 5917363

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____
STORED/SHIPPED IN ICE Y/N

CHAIN - OF - CUSTOD RECORD

Metcalf & Eddy

PROJECT NAME: Hunter 4

PROJECT NO: 019457-4116

LABORATORY ID: SAV LABS

SAMPLER(S) NAME: D Humphries / G. Ravell

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: D Humphries

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANRDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F)FIELD
11/2/99	1605	W	PH2MW3801	MW38	PP01		2	N	
	1630	W	PH2MW3901	MW39	PP01		2	N	
	1700	W	PHEB02	MW36	FBR11		2	N	
	1700	W	PH1-MW3601	MW36	PP01		2	N	
	1700	W	PH1-MW36MS/MSD	MW36	SL11		4	N	
		W	Temp Blank						

ANALYTICAL PARAMETERS / METHODS

Method No.	VOCS	SVOC	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO	GRO	
		PAHS							
		8310							
		✓							
		✓							
		✓							
		✓							
		✓							

Relinquished by: (Signature) D. Humphries Date/Time: 11/2/99 1820

Received by: Date/Time: 11/02/99 1821

Cooler Temperature: 5.3

Remarks:

Hand Delivered

AIRBILL CO.

TRACKING NO:

Send Results to: 5917363

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____
STORED/SHIPPED IN ICE Y/N

Savannah Laboratories
5102 LaRoche Avenue · Savannah, GA 31404 · (912) 354-7858 · Fax (912) 352-0165 · www.stlsavlab.com

LOG NO: S9-17363A
Received: 03 NOV 99
Reported: 02 DEC 99

Ms. Christine Hettinger
Metcalf & Eddy
Two Sun Court, Suite 200
Norcross, GA 30092

Client PO. No.: 250276

Contract No.: 94-016159-001
Project: HAA74/019457-4116/HUNTER 4 PUMPHOUSES #1 & 2/031//
Sampled By: Client
Code: 12569123

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363A-1	PH2MW3901 } Pump House #2	11-02-99/16:30	HAA74
17363A-2	PH1MW3601 } Pump House #1	11-02-99/17:00	HAA74

PARAMETER	17363A-1	17363A-2
Halogenated and Aromatic Volatiles (8021)		
Benzene, ug/l	1.0U	1.0U
Ethylbenzene, ug/l	1.0U	1.0U
Toluene, ug/l	1.0U	1.0U
o-Xylene, ug/l	1.0U	1.0U
m&p-Xylene, ug/l	1.0U	1.0U
Surrogate - a,a,a-Trifluorotoluene	100 %	97 %
Dilution Factor	1.0	1.0
Analysis Date	11.10.99	11.10.99
Analysis Time	1054	1131
Batch ID	1D1110	1D1110

Savannah Laboratories
5102 LaRoche Avenue · Savannah, GA 31404 · (912) 354-7858 · Fax (912) 352-0165 · www.stlsavlab.com

LOG NO: S9-17363A
Received: 03 NOV 99
Reported: 02 DEC 99

Ms. Christine Hettinger
Metcalf & Eddy
Two Sun Court, Suite 200
Norcross, GA 30092

Client PO. No.: 250276

Contract No.: 94-016159-001
Project: HAA74/019457-4116/HUNTER 4 PUMPHOUSES #1 & 2/031//
Sampled By: Client
Code: 12569123

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363A-1	PH2MW3901 } Pump House #2	11-02-99/16:30	HAA74
17363A-2	PH1MW3601 } Pump House #1	11-02-99/17:00	HAA74

PARAMETER	17363A-1	17363A-2
Polynuclear Aromatics (8310)		
Acenaphthene, ug/l	1.0U	1.0U
Acenaphthylene, ug/l	1.0U	1.0U
Anthracene, ug/l	0.20U	0.20U
Benzo(a)anthracene, ug/l	0.20U	0.20U
Benzo(a)pyrene, ug/l	0.20U	0.20U
Benzo(b)fluoranthene, ug/l	0.20U	0.20U
Benzo(g,h,i)perylene, ug/l	0.50U	0.50U
Benzo(k)fluoranthene, ug/l	0.20U	0.20U
Chrysene, ug/l	0.20U	0.20U
Dibenzo(a,h)anthracene, ug/l	0.20U	0.20U
Fluoranthene, ug/l	0.50U	0.50U
Fluorene, ug/l	0.50U	0.50U
Indeno(1,2,3-cd)pyrene, ug/l	0.20U	0.20U
Naphthalene, ug/l	1.0U	1.0U
Phenanthrene, ug/l	0.20U	0.20U
Pyrene, ug/l	0.50U	0.50U
1-Methylnaphthalene, ug/l	1.0U	1.0U
2-Methylnaphthalene, ug/l	1.0U	1.0U
Surrogate - Terphenyl-d14	88 %	84 %
Dilution Factor	1.0	1.0
Prep Date	11.04.99	11.04.99
Analysis Date	11.15.99	11.15.99
Analysis Time	1100	1146
Batch ID	1104J	1104J

Savannah Laboratories
5102 LaRoche Avenue · Savannah, GA 31404 · (912) 354-7858 · Fax (912) 352-0165 · www.stlsavlab.com

LOG NO: S9-17363A
Received: 03 NOV 99
Reported: 02 DEC 99

Ms. Christine Hettinger
Metcalf & Eddy
Two Sun Court, Suite 200
Norcross, GA 30092

Client PO. No.: 250276

Contract No.: 94-016159-001
Project: HAA74/019457-4116/HUNTER 4 PUMPHOUSES #1 & 2/031//
Sampled By: Client
Code: 12569123

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED	SDG#
17363A-1	PH2MW3901 } Pump House # 2	11-02-99/16:30	HAA74
17363A-2	PH1MW3601 } Pump House #1	11-02-99/17:00	HAA74

PARAMETER	17363A-1	17363A-2

Methods: EPA SW-846, Update III and EPA 40 CFR Part 136.

Elizabeth F. Beauchamp, Project Manager

Final Page Of Report

CHAIN - OF - CUSTODY RECORD

Metcalf & Eddy

PROJECT NAME: Hunter 4

PROJECT NO: 019457-4116

LABORATORY ID: SAV LABS

SAMPLER(S) NAME: D Humphries / G. Revell

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: D Humphries

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F)FIELD
11/2/99	1605	W	PH2MW3801	MW38	PP01		2	N	
	1630	W	PH2MW3901	✓MW39	PP01		2	N	
	1700	W	PHEB002	MW36	EBR11		2	N	
	1700	W	PH1-MW3601	✓ MW36	PP01		2	N	
	1700	W	PH1-MW36MS/MSD	✓ MW36	SL11		4	N	
		W	Temp Blank						

ANALYTICAL PARAMETERS / METHODS

Method No.

VOCS	SVOC	METALS ICP / Hg CVAA / GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO	GRO	
	PAHs							
	8310							
	✓							
	✓							
	✓							
	✓							
	✓							

Relinquished by: (Signature) D Humphries

Date/Time: 11/2/99 1820

Received by:

Date/Time: 11/02/99 1831

Cooler Temperature: 5.3

Remarks:

Hand Delivered

AIRBILL CO.

TRACKING NO:

Send Results to: 5917363

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):

(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____

STORED/SHIPPED IN ICE Y/N

CHAIN - OF - CUSTODY RECORD

VOA p 2 of 2

Metcalf & Eddy

PROJECT NAME: Hunter 4

PROJECT NO: 019457-4116

LABORATORY ID: SAV LABS

SAMPLER(S) NAME: D Humphris Greg Rowell

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: D. Humphris / G. Rowell

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F) FIELD
11/2/99	1410	W	PH2 MW060	MW06	PP01		6		
11/2/99	1410	W	PH2-MW0602MS/MSD	MW06	SL11		6		
	~~1325~~	~~W~~	~~PH2-MW410~~	~~MW41~~	~~PP01~~	DH			
	1530	W	PH2-MW4301	MW43	PP01		3		
	1545	W	PH2-MW3701	MW37	PP01		3		
	1545	W	PH2-MW8201	MW37	FD11		3		
	1605	W	PH2-MW3801	MW38	PP01		3		
	1700	W	PH1-MW3601	MW36	PP01		3		
	1700	W	PH1-MW36 MS/MSD	MW36	SL11		3		
	1706	W	PH EB02	MW36	BR11		3		
	1630	W	PH2-MW3901	MW39	PP01		3		
			Temp Blank						

ANALYTICAL PARAMETERS / METHODS

Method No.	VOCs BTEX	SVOC	METALS ICP Hg CVAA GFAA	HERBICIDES	PESTICIDES	PCB	TPH/DRO	GRO	25. GASES
	8021B								6211M
	✓								✓
	✓								✓
	✓								
	✓								
	✓								
	✓		:						
	✓								
	✓								
	✓								
	✓								

Relinquished by: (Signature) D Humphris — Date/Time: 11/2/99 1820

Received by: — Date/Time: 11/02/99 1820

Cooler Temperature: 2.3°C

Remarks:

AIRBILL CO. Hand Delivered

TRACKING NO:

Send Results to: 5917363

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER _____
STORED/SHIPPED IN ICE Y/N

CHAIN - OF - CUSTODY RECORD

Metcalf & Eddy

PROJECT NAME: Hunter 4 — TASK ORDER NO.

PROJECT NO: 0194574116 — SAMPLE EVENT:

LABORATORY ID: SAV LABS — PROGRAM TYPE:

SAMPLER(S) NAME: D. Humphries — SAMPLER(S) SIGNATURE: D. Humphries

ANALYTICAL PARAMETERS / METHODS

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F) FIELD	VOCS	SVOC	METALS ICP IB CVAA GFAA	HERBICIDES	PESTICIDES	TPH	TPH/DRO	GRO	
Method No.											PAHs 8310	DPP REDOX	TCL 8080	ND3 ND2 353.2	9071B 2320B			
11/3/99	0910	W	PH1-MW03 MS/MSD	MW03	SL11		8	Y				✓	✓	✓	✓			
	0945	W	H833-MW0502	H833 MW05	PP01		4	Y				✓	✓	✓	✓			
	1010	W	H83-MW1602	H833 MW16	PP01		4	Y				✓	✓	✓	✓			
	1025	W	PH1-MW4201	MW42	PP01		2	Y			✓							
	1040	W	PH1-MW1802	MW18	PP01		4	Y				✓	✓	✓	✓			
	1100	W	PH1-MW1902	MW19	PP01		4	Y				✓	✓	✓	✓			
	1115	W	PH1-MW0102	MW01	PP01		4	Y				✓	✓	✓	✓			
	1130	W	PH1-MW0202	MW02	PP01		4	Y				✓	✓	✓	✓			
	1130	W	PH1-MW8002	MW02	PD11		4	Y				✓	✓	✓	✓			
	1210	W	PH1-MW2002	MW20	PP01		4	Y				✓	✓	✓	✓			
			Temp Blank															

000004

Relinquished by: (Signature) D. Humphries — Date/Time: 11/3/99 16:42

Received by: F. Swafford — Date/Time: 11/3/99 4:42

Cooler Temperature: 4.1

Remarks: Hand delivered

AIRBILL CO.

TRACKING NO:

Send Results to: 591741

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER
STORED/SHIPPED IN ICE (Y) N

CHAIN - OF - CUSTODY RECORD

VOA p. 1 of 2

Metcalf & Eddy

PROJECT NAME: Hunter 4

PROJECT NO: 019457-4116

LABORATORY ID: SAV LABS

SAMPLER(S) NAME: D. Humphries

TASK ORDER NO.

SAMPLE EVENT:

PROGRAM TYPE:

SAMPLER(S) SIGNATURE: D. Humphries

ANALYTICAL PARAMETERS / METHODS

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RES CODE	DEPTH (FT.)	NO. OF CONTS.	STANDARD PRESERV. (Y/N)*	FILTERED (L) LAB (F) FIELD
11/3/99	0745	W	PH1 MW4001	MW40	PP01		5	Y	
	0745	W	PHTB02	MW40	BT11		3	Y	
	0815	W	PH-EB01	MW23	BR11		10	Y	
	0815	W	PH1-MW2302	MW23	PP01		10	Y	
	0845	W	PH1-MW2202	MW22	PP01		10	Y	
	0910	W	PH1-MW0302	MW03	PP01		10	Y	
	0945	W	H833-MW0502	H833-MW05	PP01		6	Y	
	0910	W	PH1-MW03MS/MSD	MW03	SL11		6	Y	
	1010	W	H833MW1602	H833-MW16	PP01		6	Y	
	1025	W	PH1-MW4201	MW42	PP01		3		
	1040	W	PH1-MW1802	MW18	PP01		6		
	1100	W	PH1-MW1902	MW19	PP01		6		

Method No.	VOCs	SVOC	METALS ICP / Hg CVAA / GFAA	HERBICIDES	PESTICIDES	TPH	TCLP	GRO
	8021B	8310	ORP PEDX	8150	8332 MB02 / 8081	AK101/SOR	6010 SESST	8015
	✓	✓						
	✓							
	✓		✓	✓	✓	✓	✓	
	✓		✓	✓	✓	✓	✓	
	✓		✓	✓	✓	✓	✓	
	✓		✓	✓	✓	✓	✓	
	✓						✓	
	✓						✓	
	✓						✓	
	✓						✓	
	✓						✓	
	✓						✓	

Relinquished by: (Signature) D. Humphries — Date/Time: 11/3/99 16:40

Received by: J Swafford — Date/Time: 4:40 11/3/99

Cooler Temperature: 3.8

Remarks: See Page 2

Hand delivered

AIRBILL CO.

TRACKING NO:

Send Results to: 591711

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER

STORED/SHIPPED IN ICE Y/N

CHAIN - OF - CUSTODY RECORD

Metcalf & Eddy

HAA 75
HAA 76

PROJECT NAME: Hunter 4
PROJECT NO: 019457 4116
LABORATORY ID: SAV LABS
SAMPLER(S) NAME: D. Humphries

TASK ORDER NO.
SAMPLE EVENT:
PROGRAM TYPE:
SAMPLER(S) SIGNATURE: D. Humphries

ANALYTICAL PARAMETERS / METHODS

DATE	TIME MILITARY	MATRIX (S/W)	FIELD SAMPLE ID	SITE ID	RESL CODE	DEPTH (FT)	NO. OF CONTS	TURNAROUND TIME (HRS)	FILTERED (Y/N) FIELD
11/4/99	1600	W	PH1-MW4002	MW40	PP01		3		
	1600	W	PH1-TB03	MW40	BT11		3		
11/5/99	0000	W	PH1-MW4003	MW40	PP01		3		
	0800	W	PH1-MW4004	MW40	PP01		3		
	0800	W	PH-FTW01	Frac Tank	PP01		4		
	0805	W	PH-FTW02	Frac Tank	PP01		4		

Method No.	VOCs BTEX 8021B	SVOC PAH 8310	METALS ICP Hg CVAA GFAA	HERBICIDES 9060 TOC	PESTICIDES 353.2 NO3 NO2	9038 2320B SO4 Alk	TPH-DRO 6MSEP 6011M Diss	TCLP VOAs	TCLP Metals
	✓								
	✓								
	✓								
	✓								
								✓	✓
								✓	✓

Relinquished by: (Signature) D. Humphries
Date/Time: 11/5/99 1125
Received by:
Date/Time: 11/5/99 11:25
Cooler Temperature:

Remarks:

AIRBILL CO. Hand Delivered
TRACKING NO:

Send Results to: 5917488

Christine Hettinger c/o METCALF & EDDY, INC.
1201 Peachtree St., N.E., 400 Colony Square, Suite 1101
Atlanta, Georgia 30361
(404) 881-8010, FAX (404) 872-3161

STANDARD PRESERVATION (Y):
(H) HCl/VOC,
(N) HNO_3/METALS
(S) H_2SO_4/
(O) OTHER
STORED/SHIPPED IN ICE Y/N

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AM2912

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: USTMCA08W

Matrix: (soil/water) WATER Lab Sample ID: 22085009

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8X336

Level: (low/med) LOW Date Received: 02/21/00

% Moisture: not dec. _____ Date Analyzed: 02/24/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 50.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	50.0	U
75-01-4	Vinyl chloride	50.0	U
74-83-9	Bromomethane	50.0	U
75-00-3	Chloroethane	50.0	U
75-35-4	1,1-Dichloroethylene	50.0	U
67-64-1	Acetone	250	U
75-15-0	Carbon disulfide	250	U
75-09-2	Methylene chloride	250 ~~107~~	JB
75 34-3	1,1-Dichloroethane	50.0	U
78-93-3	2-Butanone	250	U
540-59-0	1,2-Dichloroethylene(total)	100	U
67-66-3	Chloroform	50.0	U
71-55-6	1,1,1-Trichloroethane	50.0	U
56-23-5	Carbon tetrachloride	50.0	U
107-06-2	1,2-Dichloroethane	50.0	U
71-43-2	Benzene	572	
79-01-6	Trichloroethylene	50.0	U
78-87-5	1,2-Dichloropropane	50.0	U
75-27-4	Bromodichloromethane	50.0	U
10061-01-5	cis-1,3-Dichloropropylene	50.0	U
108-10-1	4-Methyl-2-pentanone	250	U
108-88-3	Toluene	296	
10061-02-6	trans-1,3-Dichloropropylene	50.0	U
79-00-5	1,1,2-Trichloroethane	50.0	U
591-78-6	2-Hexanone	250	U
127-18-4	Tetrachloroethylene	50.0	U
124-48-1	Dibromochloromethane	50.0	U
108-90-7	Chlorobenzene	50.0	U
100-41-4	Ethylbenzene	391	
1330-20-7	Xylenes (total)	1280	
100 42-5	Styrene	50.0	U
75-25-2	Bromoform	50.0	U
79-34-5	1,1,2,2 Tetrachloroethane	50.0	U

UJ COS
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FORM I VOA OLM03.0

DATA VALIDATION COPY

6 of 6

SAIC An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.: MCA002

PROJECT NAME: MCA Barracks and Misc UST Investigations

PROJECT NUMBER: 01-1624-04-2725-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	VOC	No. of Bottles, Vials	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
XX0962	2/18/00	1741	water			2	2		22085006
XX0972	2/18/00	1613				2	2		007
XX0992	2/18/00	1050				2	2		008
AM292	2/18/00	1400				2	2		009
321311	2/21/00	1000	Soil	1	1		2		22087001

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston SC 29417

PHONE NO: (843) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	2/21/00	Francis	2/21/00
COMPANY NAME: SAIC	1200	COMPANY NAME: GEL	1455
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
COMPANY NAME:	2/21/00 1200	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:	2/21/00 1515	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 140

Cooler ID: #10

Cooler Temperature: 4°C

FEDEX NUMBER:

APPENDIX IX

CONTAMINATED SOIL DISPOSAL

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During UST removal and excavation activities in 1995, all contaminated soil removed during the closure was tested in accordance with disposal facility requirements and transported to Kedesh, Inc., Highway 84, Ludowici, GA 31316. Approximately 1,062 cubic yards of contaminated soil were excavated from the Former Pumphouse #2 site. All soil excavated during the tank removal activities in 1998 was returned to the tank pit.

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APPENDIX X

SITE RANKING FORMS

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SITE RANKING FORM
FOR
FORMER PUMPHOUSE #2 TANK PIT AREA

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SITE RANKING FORM

Facility Name: Former Pumphouse #2 (tank pit area) **Ranked by:** S. Stoller

County: Chatham **Facility ID #:** 9-025086 **Date Ranked:** 3/23/2000

SOIL CONTAMINATION

A. Total PAHs –
Maximum Concentration found on the site
(Assume <0.660 mg/kg if only gasoline was stored on site)

- ☐ ≤0.660 mg/kg = 0
- ☐ >0.66 - 1 mg/kg = 10
- * ☒ >1 - 10 mg/kg = 25
- ☐ >10 mg/kg = 50

** 1997 CAP-Part B sample SB5102 at 6' – 8'*

B. Total Benzene -
Maximum Concentration found on the site

- ☐ ≤0.005 mg/kg = 0
- ☐ >0.005 - .05 mg/kg = 1
- ☐ >0.05 - 1 mg/kg = 10
- * ☒ >1 - 10 mg/kg = 25
- ☐ >10 - 50 mg/kg = 40
- ☐ >50 mg/kg = 50

** 1996 CAP-Part A sample WB1001 at 8' – 10'*

C. Depth to Groundwater
(bls = below land surface)

- ☐ >50' bls = 1
- ☐ >25' - 50' bls = 2
- ☒ >10' - 25' bls = 5
- ☐ ≤10' bls = 10

Fill in the blanks: **(A. 25) + (B. 25) = (50) x (C. 5) = (D. 250)**

GROUNDWATER CONTAMINATION

E. Free Product (Nonaqueous-phase liquid hydrocarbons; See Guidelines For definition of "sheen").

- ☐ No free product = 0
- ☐ Sheen - 1/8" = 250
- ☐ >1/8" - 6" = 500
- ☐ >6" - 1ft. = 1,000
- * ☒ For every additional inch, add another 100 points = 1,000 + 900

** Based on ~21" of product in PZ-24 on 4/12/00*

F. Dissolved Benzene -
Maximum Concentration at the site
(One well must be located at the source of the release.)

- ☐ ≤5 µg/L = 0
- ☐ >5 - 100 µg/L = 5
- ☐ >100 - 1,000 µg/L = 50
- * ☒ >1,000 - 10,000 µg/L = 500
- ☐ >10,000 µg/L = 1500

** 1999 CAP-Part B sample MW0502*

Fill in the blanks: **(E. 1900) + (F. 500) = (G. 2400)**

Facility Name: Former Pumphouse #2 (Former Fuel Pit 2E) **Facility ID #:** 9-025086

POTENTIAL RECEPTORS (MUST BE FIELD-VERIFIED)

Distance from nearest contaminant plume boundary to the nearest downgradient and hydraulically connected Point of Withdrawal for water supply. **If the point of withdrawal is not hydraulically connected, evidence as outlined in the CAP-A guidance document MUST be presented to substantiate this claim.**

H. Public Water Supply

☐	Impacted	= 2000
☐	≤500'	= 500
☐	>500' - ¼ mi	= 25
☐	¼ mi - 1 mi	= 10
☐	>1 mi - 2 mi	= 2
* ☒	> 2 mi	= 0

For lower susceptibility areas only:

☐	>1 mi	= 0

I. Non-Public Water Supply

☐	Impacted	= 1000
☐	≤100'	= 500
☐	>100' - 500'	= 25
☐	>500' - ¼ mi	= 5
☐	>¼ - ½ mi	= 2
☒	>½ mi	= 0

For lower susceptibility areas only:

☐	>¼ mi	= 0

Note: If site is in lower susceptibility area, do not use the shaded areas.

* For justification that withdrawal point is not hydraulically connected, see attached text.

J. Distance from nearest Contaminant Plume boundary to downgradient Surface Waters **OR UTILITY TRENCHES & VAULTS** (a utility trench may be omitted from ranking if its invert elevation is more than 5 feet above the water table)

☒	Impacted	= 500
☐	≤500'	= 50
☐	>500' - 1,000'	= 5
☐	>1,000'	= 2

K. Distance from any Free Product to basements and crawl spaces

☐	Impacted	= 500
☐	<500'	= 50
☐	>500' - 1,000'	= 5
☒	>1,000' or no free product.	= 0

Fill in the blanks: (H. 0) + (I. 0) + (J. 500) + (K. 0) = L. 500

(G. 2400) x (L. 500) = M. 1,200,000

(M. 1,200,000) + (D. 250) = N. 1,200,250

P. **SUSCEPTIBILITY AREA MULTIPLIER**

☐ If site is located in a Low Ground-Water Pollution Susceptibility Area = 0.5

☒ All other sites = 1

Q. **EXPLOSION HAZARD**

Have any explosive petroleum vapors, possibly originating from this release, been detected in any subsurface structure (e.g., utility trenches, basements, vaults, crawl spaces, etc.)?

☐ Yes = 200,000

☒ No = 0

Fill in the blanks: (N. 1,200,250) x (P. 1) = (1,200,250) + (Q. 0)

= 1,200,250 (for former tank pit area based on 1999 groundwater concentration in P2-MW05)

ENVIRONMENTAL SENSITIVITY SCORE

SITE RANKING FORM
FOR
FORMER FUEL PIT 2E

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SITE RANKING FORM

Facility Name: Former Pumphouse #2 (Former Fuel Pit 2E) **Ranked by:** S. Stoller

County: Chatham **Facility ID #:** 9-025086 **Date Ranked:** 3/23/2000

SOIL CONTAMINATION

A. Total PAHs –
Maximum Concentration found on the site
(Assume <0.660 mg/kg if only gasoline was stored on site)

☐	≤0.660 mg/kg	=	0
☐	>0.66 - 1 mg/kg	=	10
* ☒	>1 - 10 mg/kg	=	25
☐	>10 mg/kg	=	50

** 1997 CAP-Part B sample SB5102 at 6' – 8'*

B. Total Benzene -
Maximum Concentration found on the site

☐	≤0.005 mg/kg	=	0
☐	>0.005 - .05 mg/kg	=	1
☐	>0.05 - 1 mg/kg	=	10
* ☒	>1 - 10 mg/kg	=	25
☐	>10 - 50 mg/kg	=	40
☐	>50 mg/kg	=	50

** 1996 CAP-Part A sample WB1001 at 8' – 10'*

C. Depth to Groundwater
(bls = below land surface)

☐	>50' bls	=	1
☐	>25' - 50' bls	=	2
☐	>10' - 25' bls	=	5
☒	≤10' bls	=	10

Fill in the blanks: **(A. 25) + (B. 25) = (50) x (C. 10) = (D. 500)**

GROUNDWATER CONTAMINATION

E. Free Product (Nonaqueous-phase liquid hydrocarbons; See Guidelines For definition of "sheen").

☒	No free product	=	0
☐	Sheen - 1/8"	=	250
☐	>1/8" - 6"	=	500
☐	>6" - 1ft.	=	1,000
☐	For every additional inch, add another 100 points = 1,000 + 12,000		

F. Dissolved Benzene -
Maximum Concentration at the site
(One well must be located at the source of the release.)

☐	≤5 µg/L	= 0
* ☒	>5 - 100 µg/L	= 5
☐	>100 - 1,000 µg/L	= 50
☐	>1,000 - 10,000 µg/L	= 500
☐	>10,000 µg/L	= 1500

** 1997 CAP-Part B sample MW2501*

Fill in the blanks: **(E. 0) + (F. 5) = (G. 5)**

Facility Name: Former Pumphouse #2 (Former Fuel Pit 2E) **Facility ID #:** 9-025086

POTENTIAL RECEPTORS (MUST BE FIELD-VERIFIED)

Distance from nearest contaminant plume boundary to the nearest downgradient and hydraulically connected Point of Withdrawal for water supply. **If the point of withdrawal is not hydraulically connected, evidence as outlined in the CAP-A guidance document MUST be presented to substantiate this claim.**

H. Public Water Supply

☐	Impacted	= 2000
☐	≤500'	= 500
☐	>500' - ¼ mi	= 25
☐	¼ mi - 1 mi	= 10
☐	>1 mi - 2 mi	= 2
* ☒	> 2 mi	= 0

For lower susceptibility areas only:

☐	>1 mi	= 0

I. Non-Public Water Supply

☐	Impacted	= 1000
☐	≤100'	= 500
☐	>100' - 500'	= 25
☐	>500' - ¼ mi	= 5
☐	>¼ - ½ mi	= 2
☒	>½ mi	= 0

For lower susceptibility areas only:

☐	>¼ mi	= 0

Note: If site is in lower susceptibility area, do not use the shaded areas.

* For justification that withdrawal point is not hydraulically connected, see attached text.

J. Distance from nearest Contaminant Plume boundary to downgradient Surface Waters **OR UTILITY TRENCHES & VAULTS** (a utility trench may be omitted from ranking if its invert elevation is more than 5 feet above the water table)

☐	Impacted	= 500
☒	≤500'	= 50
☐	>500' - 1,000'	= 5
☐	>1,000'	= 2

K. Distance from any Free Product to basements and crawl spaces

☐	Impacted	= 500
☐	<500'	= 50
☐	>500' - 1,000'	= 5
☒	>1,000' or no free product.	= 0

Fill in the blanks: (H. 0) + (I. 0) + (J. 50) + (K. 0) = L. 50

(G. 5) x (L. 50) = M. 250

(M. 250) + (D. 500) = N. 750

P. **SUSCEPTIBILITY AREA MULTIPLIER**

☐ If site is located in a Low Ground-Water Pollution Susceptibility Area = 0.5

☒ All other sites = 1

Q. **EXPLOSION HAZARD**

Have any explosive petroleum vapors, possibly originating from this release, been detected in any subsurface structure (e.g., utility trenches, basements, vaults, crawl spaces, etc.)?

☐ Yes = 200,000

☒ No = 0

Fill in the blanks: (N. 750) x (P. 1) = (750) + (Q. 0)

= 750 (for Former Fuel Pit 2E based on 1997 groundwater concentration in P2-MW25)

ENVIRONMENTAL SENSITIVITY SCORE

OTHER GEOLOGIC AND HYDROLOGIC DATA

The following information is presented to provide supplemental information to Item H of the Site Ranking Form and provides detailed information relating to the geologic and hydrogeologic conditions at Fort Stewart, which supports Fort Stewart's determination that the water withdrawal point(s) located at Fort Stewart is (are) not hydraulically connected to the surficial aquifer.

1.0 REGIONAL AND LOCAL GEOLOGY

Southeast Georgia is located within the Coastal Plain Physiographic Province of the Southeast United States (Clark and Zisa 1976). In this region, the thickness of southeastward dipping, subsurface strata ranges from 0 feet at the fall line, located approximately 150 miles inland from the Atlantic coast, to approximately 4,200 feet BGS at the coast. Herrick (1961) provides detailed lithologic descriptions of the stratigraphic units encountered during the installation of water and petroleum exploration wells in Chatham County. The well log of GGS Well 125, located on White Bluff Road, 700 feet west and 0.3 miles north of Buckhalter Road, Savannah, provides one of the more complete lithologic descriptions of upper Eocene, Miocene, and Pliocene to Recent sedimentary strata in Chatham County.

The upper Eocene (Ocala Limestone) section of GGS Well 125 is approximately 225 feet thick and dominated by light-gray to white, fossiliferous limestone. The Miocene section is approximately 250 feet thick and consists of limestone with a 160-feet-thick cap of dark green phosphatic clay. This clay is regionally extensive and is known to occupy the Coosawatchie Formation of the Hawthorn Group (Furlow 1969; Arora 1984). The interval from approximately 80 feet to the surface is Pliocene to Recent in age and composed primarily of sand interbedded with clay and silt. This section is occupied by the Satilla and Cypresshead Formations.

HAAF is located within the Barrier Island Sequence District of the Coastal Plain Physiographic Province of the Southeast United States (Clark and Zisa 1976). The Barrier Island Sequence District in Chatham and Bryan Counties is characterized by the existence of several marine terraces (step-like topographic surfaces that decrease in elevation toward the coast). These marine terraces, and their associated deposits, are the results of sea level fluctuations that occurred during the Pleistocene Epoch. The surficial (Quaternary) deposits in Chatham and Bryan Counties, in decreasing elevation and age, are part of the Okefenokee, Wicomico, Penholoway, Pamlico, and Silver Bluff terrace complexes.

HAAF, as well as most of Chatham County, is underlain by the Pleistocene Pamlico Terrace. The Pleistocene Satilla Formation (formerly known as the Pamlico Formation) consists of deposits of the Pamlico Terrace complex and other terrace complexes in the region. The Satilla Formation is a lithologically heterogeneous unit that consists of variably bedded to non-bedded sand and variably bedded silty to sandy clay. During the Pleistocene, these sand and clay deposits were formed in offshore and inner continental shelf, barrier island, and marsh/lagoonal-type environments. According to the Geologic Map of Georgia (GA EPD 1976), clay beds of marsh origin, which were deposited on the northwest side of the former Pamlico Barrier Island complex, exist in the western quarter of HAAF. Very fine- to coarse-grained sand deposits of barrier island origin are more common throughout the remaining areas of HAAF.

Based on the coring and sampling of unconsolidated strata at HAAF during the CAP-Part A investigations, it is concluded that all former USTs were buried within the Satilla Formation, which is overlain by various soil types. Soil groups at HAAF include the Chipley, Leon, Ellabelle, Kershaw, Pelham, Albany, Wahee, and Ogeechee (Wilkes et al. 1974).

2.0 REGIONAL AND LOCAL HYDROGEOLOGY

The hydrogeology in the vicinity of HAAF is mostly influenced by two aquifer systems. These are referred to as the Principal (Floridan) Aquifer and the Surficial Aquifer (Miller 1990). The Principal Aquifer is the lowermost hydrologic unit and is regionally extensive from South Carolina through Georgia, Alabama, and most of Florida. Known elsewhere as the Floridan, this aquifer, approximately 800 feet in total thickness, is composed primarily of Tertiary age limestone including the Bug Island Formation, the Ocala Group, and the Suwannee Limestone. Groundwater from the Floridan is used primarily for drinking water (Arora 1984). According to Miller (1990), one of the largest cones of depression produced in the Upper Floridan Aquifer exists directly beneath Savannah, Georgia. Net water-level decline in the Floridan system, between the predevelopment period and 1980, exceeded 80 feet beneath Savannah. In addition, according to 1980 estimates, more than 500 million gallons of water per day were withdrawn from the Floridan for public and industrial use in southeast Georgia, more than any other region.

The confining layer for the Principal (Floridan) Aquifer is the phosphatic clay of the Hawthorn Group. There are minor occurrences of aquifer material within the Hawthorn Group; however, they have limited utilization (Miller 1990). The Surficial Aquifer overlies the Hawthorn confining unit.

The Surficial Aquifer consists of widely varying amounts of sand and clay, ranging from 55 to 150 feet in thickness, and is composed primarily of the Satilla and Cypresshead Formations in the Savannah vicinity (Arora 1984). This aquifer is primarily used for domestic lawn and agricultural irrigation. The top of the water table ranges from approximately 2 to 10 feet below ground level (Miller 1990). Groundwater in the Surficial Aquifer system is under unconfined, or water table, conditions. However, locally, thin clay beds create confined or semiconfined conditions, as is the case at HAAF where thin, surficial clay beds are present in the west quadrant (GA EPD 1976).

Groundwater encountered at all the UST investigation sites is part of the Surficial Aquifer system. Based on the fact that all public and non-public water supply wells draw water from the Principal (Floridan) Aquifer, and that the Hawthorn confining unit separates the Principal Aquifer from the Surficial Aquifer, it is concluded that there is no hydraulic interconnection between the Surficial Aquifer (and associated groundwater plumes, if applicable) located beneath former UST sites and identified water supply withdrawal points at Fort Stewart.

APPENDIX XI

COPIES OF PUBLIC NOTIFICATION LETTERS AND CERTIFIED RECEIPTS OF NEWSPAPER NOTICE

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AFFIDAVIT OF PUBLICATION
SAVANNAH MORNING NEWS

P. XI-3

STATE OF GEORGIA
CHATHAM COUNTY

Personally appeared before me, JOAN T. JENKINS, to me known, who being sworn, deposes and says:

That she/he is the CLASSIFIED ADV. SUPV. of Southeastern Newspaper Corporation, a Georgia corporation, doing business in Chatham County, Georgia under the trade name of Savannah Morning News, a daily newspaper published in said county;

That she/he is authorized to make affidavits of publication on behalf of said published corporation;

That said newspaper is of general circulation in said county and in the area adjacent thereto;

That he has reviewed the regular editions of the Savannah Morning News, published on 4-16, 2000, 4-23 2000,

_____, 2000, _____, 2000,

and finds that the following advertisement, to-wit:

015 Miscellaneous Notices

*** PUBLIC NOTICE ***
Notification of Corrective Action Plan, Underground Storage Tank Releases, Fort Stewart, Georgia
The Georgia EPD (GEPD) has required Fort Stewart Directorate of Public Works to prepare Corrective Action Plans Part-B to investigate and/or clear up contamination at the underground storage tank sites listed at the end of this notification. These plans will be submitted to the GEPD on or before August 31, 2000. If you want to examine a copy of one or more of the plans, please contact:
Environmental Branch (attn: T. Rutland) Directorate of Public Works, Building 1137, HQS 3D IN DIV (MECH) and Fort Stewart, 1550 Frank Cochran Dr., Fort Stewart, Ga. 31314-4927.
A copy will be mailed at a nominal fee.
Comments to the plan will be accepted until September 30, 2000, and should be directed to GEPD at 404-362-2687. Following is the mailing address:
GEPD USTMP, 4244 International Parkway, Suite 104, Atlanta, Ga. 30354
Fort Stewart - Part B Underground Storage Tank Sites
Site; Facility ID# Building
Former Pumphouse #1, 9-025085, 8060
Former Pumphouse #2, 9-025086, 8065

Joan T. Jenkins
(Deponent)

Appeared in each of said editions.

Sworn to and subscribed
Before me this 21 day
of April, 2000

Lillie D. Day
Notary Public, Chatham County, Ga.
LILLIE D. DAY
Notary Public, Chatham County, Ga.
My Commission Expires Apr. 8, 2001

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ATTACHMENT A

HYDROGEOLOGICAL DATA

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A.1 GEOTECHNICAL DATA

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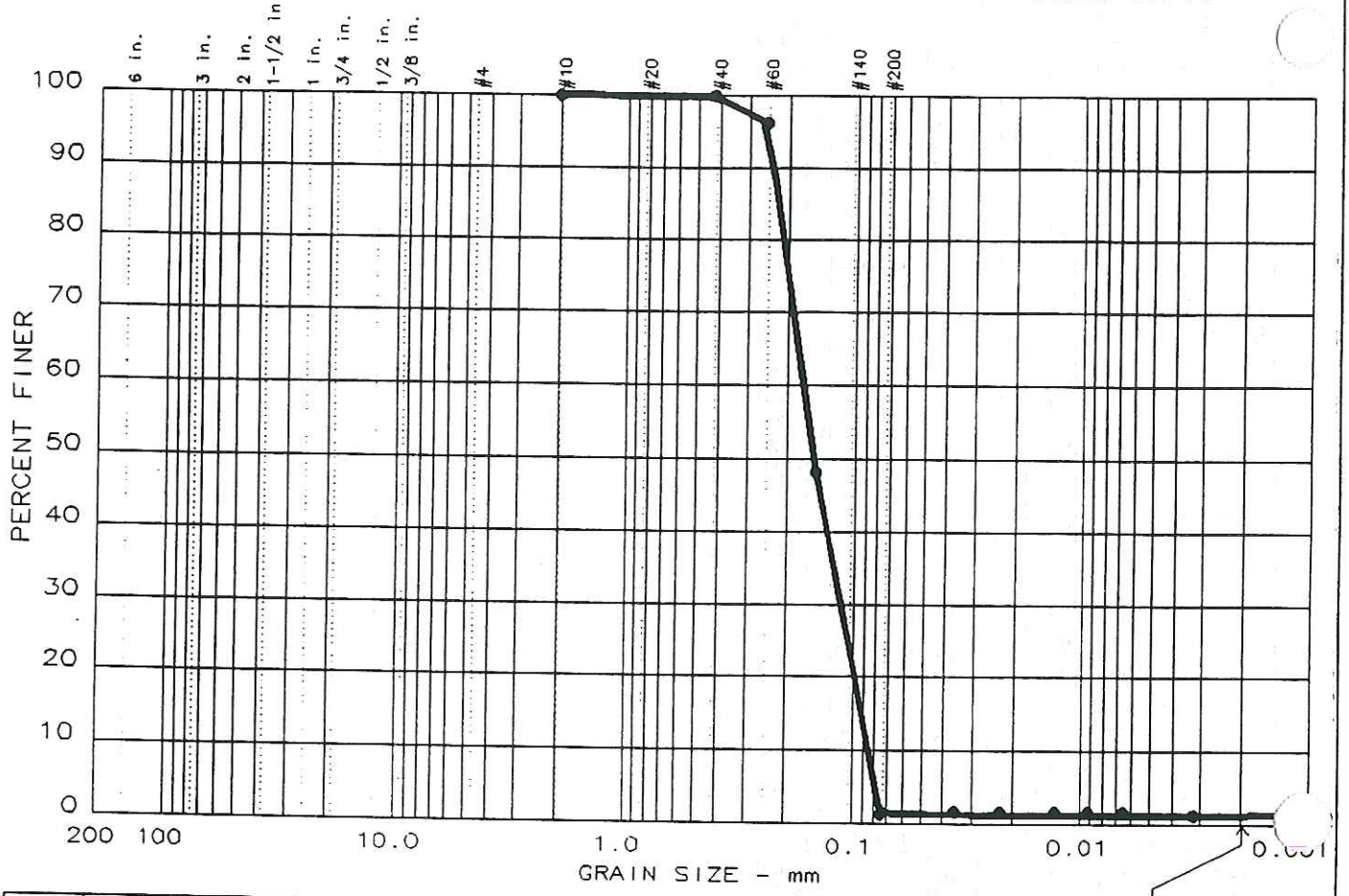
	Sample	Specific Gravity	Volumetric Content Soil Pore Water (volume/unit volume) Vw(in-situ)	Volumetric Content Soil Vapor (volume/unit volume) Va(in-situ)	Total Soil Porosity n	Soil Bulk Density (lb/cu.ft)	Saturated Hydraulic Conductivity (cm/sec)	Range of Volumetric Air Content Capillary Fringe Soils (volume/unit volume) Va(cap)[2]	Va(cap)[1]	Range of Volumetric Content Vadose Zone Soils (volume/unit volume) Vw(vad)[1]	Va(vad)[2]	Vw(vad)[2]	Va(vad)[1]	Volumetric Water Content Saturated Zone Soils (volume/unit volume) Vw(sat)
PH#1	MW 15, 7-9	2.56	0.256	0.212	47	100.9	4.50E-06	0.278	0.007	0.041	0.428	0.218	0.251	0.476
	MW 16, 7-9	2.64	0.292	0.157	45	108.9	1.70E-05	0.246	0 014	0.044	0.406	0.232	0.217	0.436
	MW 21, 10-12[1]						5.30E-03							
	MW 21, 10-12	2.88	0.275	0.227	50	106.8	7.10E-03	0.300	0.013	0.043	0.458	0.230	0 272	0.445
	MW 22, 8-10						5.00E-04							
	MW 22, 8-10[2]	2.54	0.122	0.354	48	90.7	2.60E-03	0.289	0 196	0 040	0.436	0.213	0.263	0.466
PH#2	MW 26, 6-8	2.64	0.359	0.067	43	116.9	7.30E-03	0.214	0.018	0 045	0.381	0.242	0.184	0.409
	MW 27, 7-9						5.10E-03							
	MW 27, 7-9[1]	2.59	0.003	0.407	41	95.5	8.80E-03	0.196	0.105	0.046	0.364	0.244	0.166	0.535
PH#1	SB 33, 8-10						7.10E-03							
	SB 33, 8-10[2]	2.59	0.008	0.304	31	111.6	1.10E-03	0.064	0.010	0.053	0.259	0.285	0.028	0 623
PH#2	SB 46, 8-10	2.59	0.112	0.279	39	105.5	5.10E-03	0.169	0.012	0.047	0 343	0.253	0.138	0.395
	SB 52, 5-7	2.61	0.120	0.294	41	102.9	7.10E-03	0.200	0 001	0 046	0.368	0.245	0.170	0.413
	SB 60, 6-8	2.56	0.191	0.211	40	107.4	5.00E-04	0.188	0.020	0.046	0 357	0.245	0.158	0.413
	SB 64, 5-7	2.56	0.207	0.246	45	100.3	2.60E-03	0.257	0.019	0 042	0.411	0.224	0.229	0.462
	SB 67, 7-8[1]	2.56	0.097	0.255	35	109.7	1.00E-02	0.119	0.019	0.050	0.302	0.266	0.086	0 581

NOTES: Va= Volumetric Air Content
Vw= Volumetric Water Content
[1]= approximate lower range
[2]= approximate upper range
(1)=saturated hydraulic conductivity performed with unleaded gasoline permeant
(2)=saturated hydraulic conductivity performed with kerosene permeant

Thickness of Capillary Fringe

	Sample	Approximate Vadose Zone at Time of Drilling (below existing grade) in feet	Approximate Capillary Zone at Time of Drilling (below existing grade) in feet
PH#1	MW 15, 7-9	0.0 - 7.3	7 3 - 8.7
	MW 16, 7-9	0.0 - 6.5	6.5 - 7.9
	MW 21, 10-12	0.0 - 9.5	9 5 - 10.9
	MW 22, 8-10	0.0 - 8.6	8.6 - 10.0
PH#2	MW 26, 6-8	0.0 - 6.0	6.0 - 7.4
	MW 27, 7-9	0.0 - 10.3	10.3 - 11.6
PH#1	SB 33, 8-10	0.0 - 8.6	8.6 - 10.0
PH#2	SB 46, 8-10	0.0 - 8.6	8.6 - 10.0
	SB 52, 5-7	0 0 - 4.6	4.6 - 6.0
	SB 60, 6-8	0.0 - 4.6	4.6 - 6.0
	SB 64, 5-7	0.0 - 4.6	4.6 - 6 0
	SB 67, 7-8	0.0 - 6.6	6 6 - 8 0

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	8	0.0	0.0	98.6	1.4	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.22	0.17	0.15	0.114	0.0916	0.0851	0.90	2.0

MATERIAL DESCRIPTION	USCS	AASHTO
● BROWN FINE SAND	SP	A-3

Project No.: 778-62024
Project: HUNTER IV (4) / TASK ORDER# 18 & 18A
● Location: STA. MW25, 13' - 15'

Date: 06/16/97

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

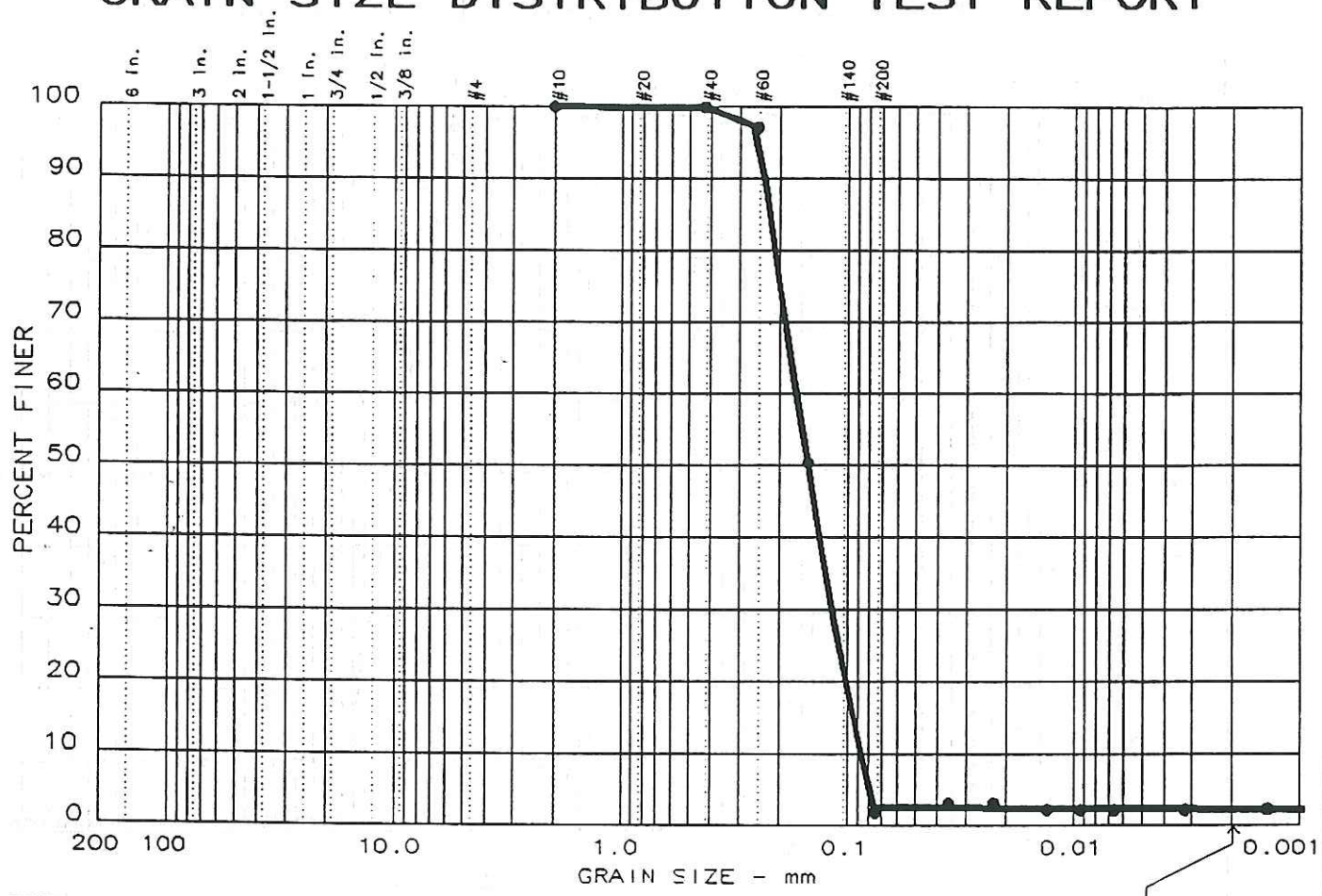
TESTED BY: J.CARTER

CHECKED BY: D.MOORE

NMC = 23.5%

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	0.0	98.2	1.8	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.22	0.17	0.15	0.118	0.0940	0.0864	0.95	2.0

MATERIAL DESCRIPTION	USCS	AASHTO
● LIGHT BROWN FINE SAND	SP	A-3

Project No.: 778-62024
Project: HUNTER IV (4) / PHASE 1
● Location: STA. MW26, 6' - 8'

Date: 07/11/97

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

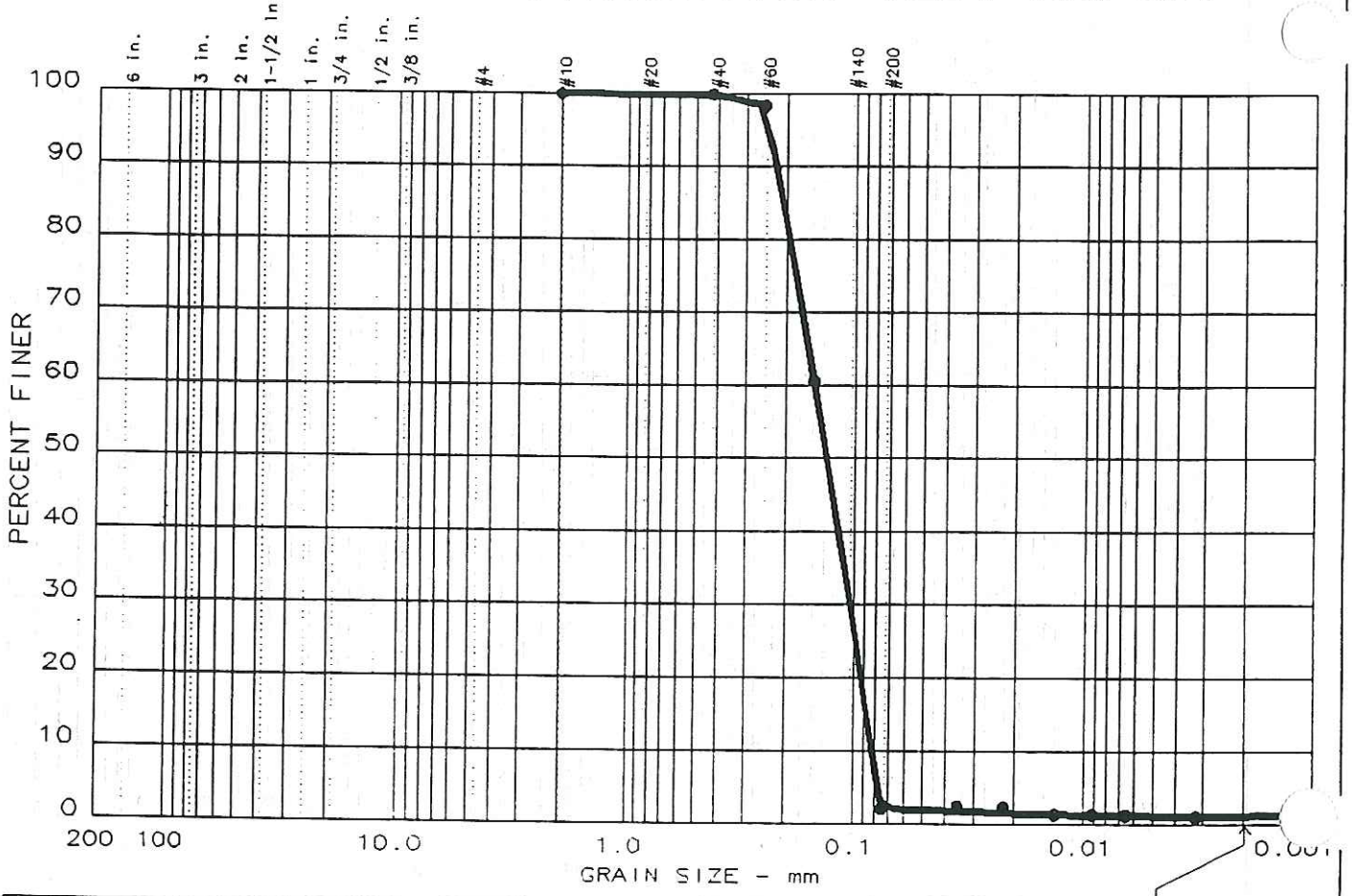
TESTED BY:JC/DM/AW

CHECKED BY:D.MOORE

NMC = 23.8%

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	11	0.0	0.0	97.9	2.1	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.21	0.15	0.13	0.104	0.0873	0.0823	0.89	1.8

MATERIAL DESCRIPTION	USCS	AASHTO
● BROWN FINE SAND	SP	A-3

Project No.: 778-62024
Project: HUNTER IV (4) / TASK ORDER# 18 & 18A
● Location: STA. MW26, 13' - 15'

Date: 06/16/97

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

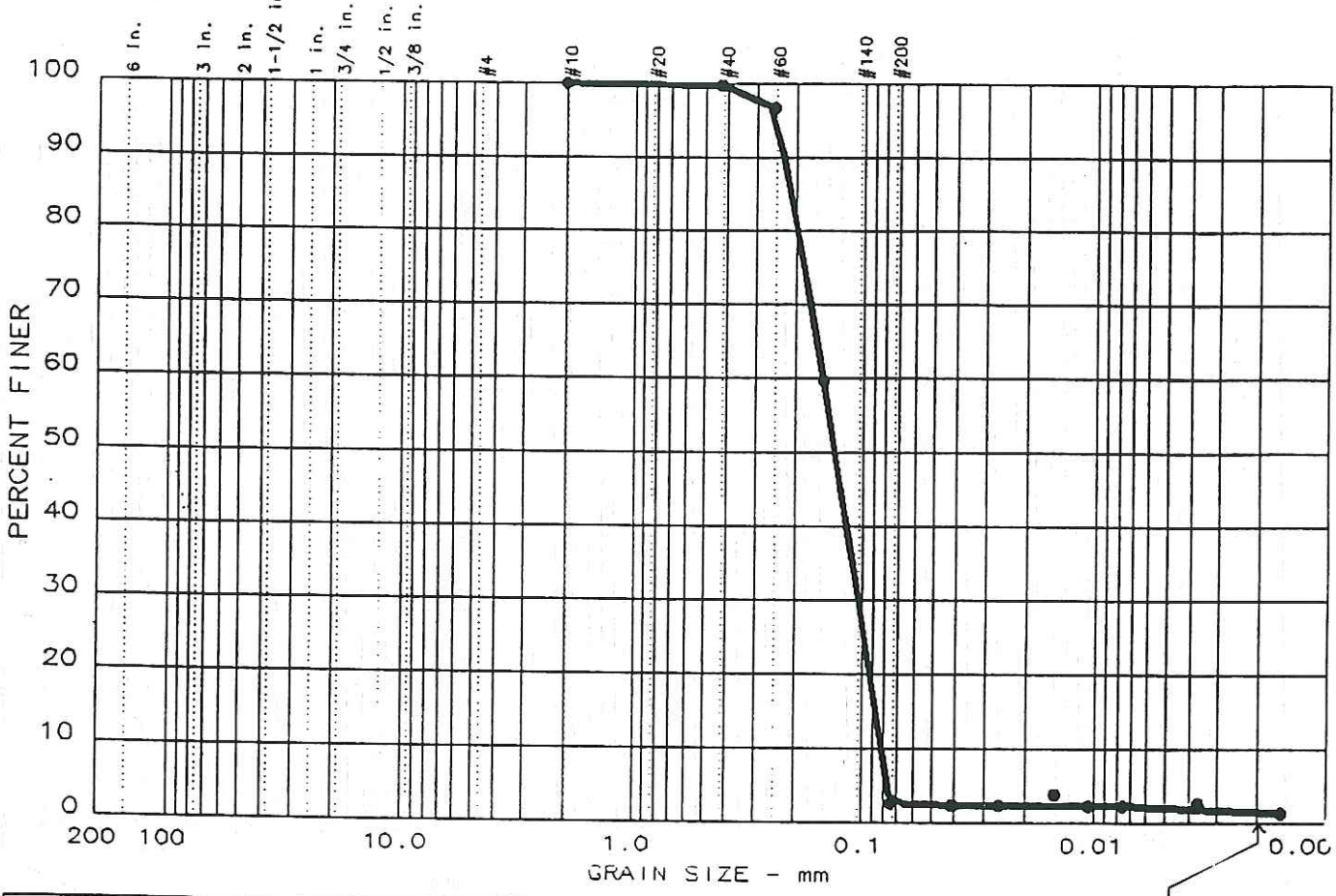
TESTED BY: J.CARTER

CHECKED BY: D.MOORE

NMC = 23.9%

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	4	0.0	0.0	97.2	1.2	1.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.21	0.15	0.13	0.104	0.0869	0.0818	0.89	1.8

MATERIAL DESCRIPTION	USCS	AASHTO
● WHITE FINE SAND	SP	A-3

Project No.: 778-62024
Project: HUNTER IV
● Location: STA. MW27, 7' - 9'

Date: 07-28-97

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

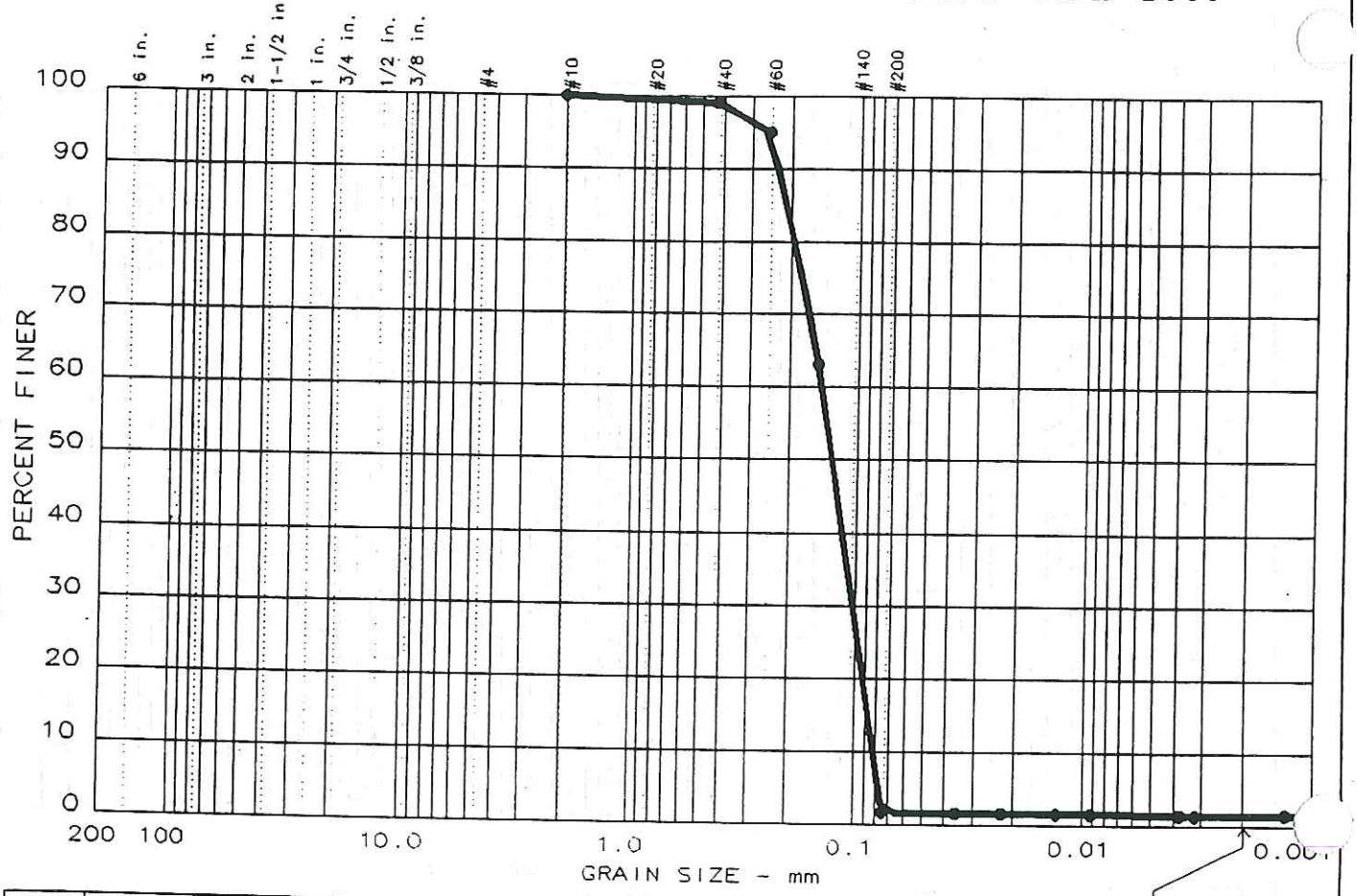
TESTED BY: AW/DM

CHECKED BY: D. MOORE

NMC - 27.7 %

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	9	0.0	0.0	98.3	1.7	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.21	0.14	0.13	0.103	0.0871	0.0822	0.89	1.8

MATERIAL DESCRIPTION	USCS	AASHTO
● BROWN FINE SAND	SP	A-3

Project No.: 778-62024
Project: HUNTER IV (4) / TASK ORDER# 18 & 18A
● Location: STA. MW27, 13' - 15'

Date: 06/16/97

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

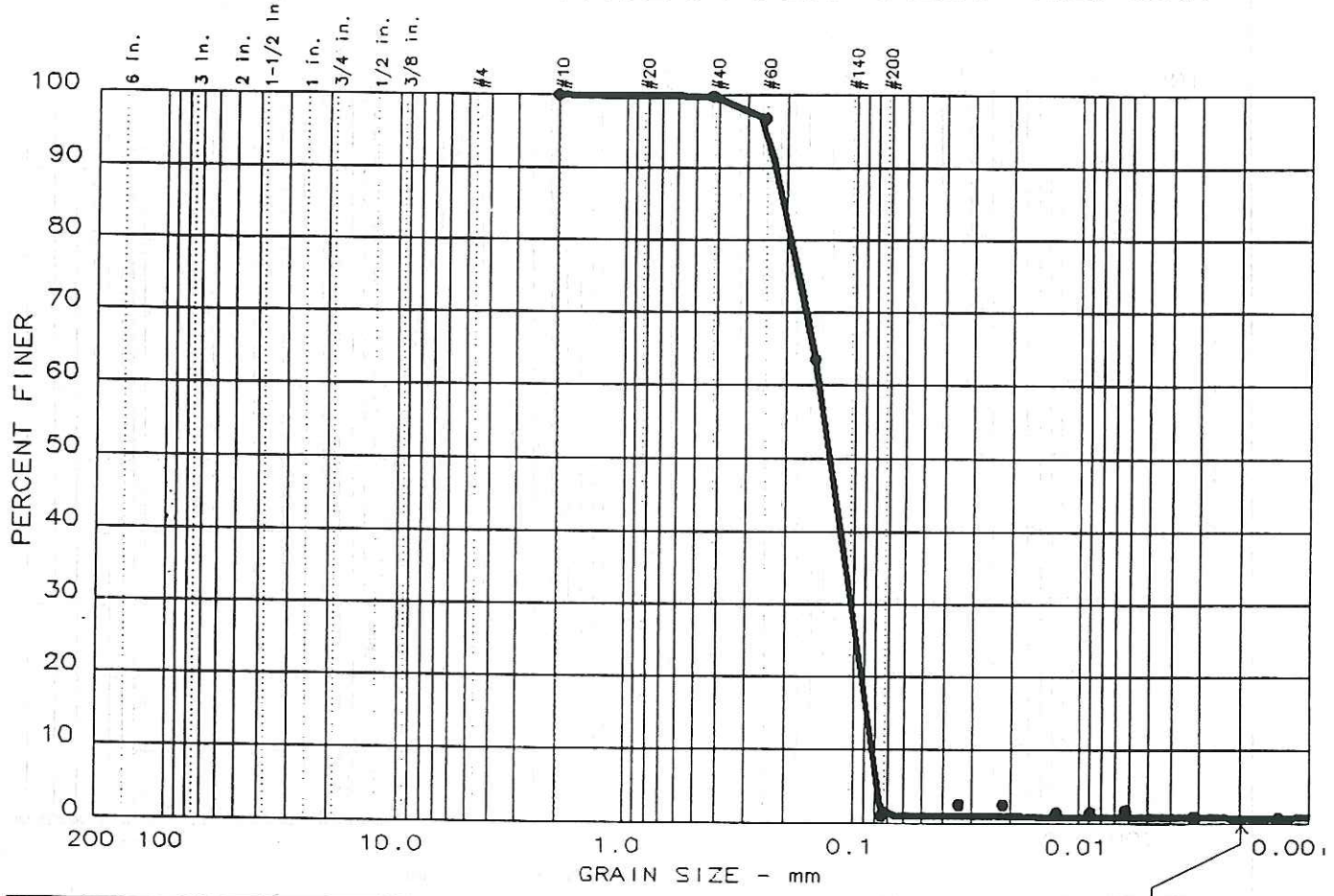
TESTED BY: J.CARTER

CHECKED BY: D.MOORE

NMC = 27.7%

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	5	0.0	0.0	98.9	0.3	0.8

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.21	0.14	0.13	0.103	0.0874	0.0827	0.90	1.7

	MATERIAL DESCRIPTION	USCS	AASHTO
●		SP	A-3

Project No.: 778-62024
Project: HUNTER 4 / TASK ORDER# 18 & 18A
● Location: STA. MW 28, 13' - 15'

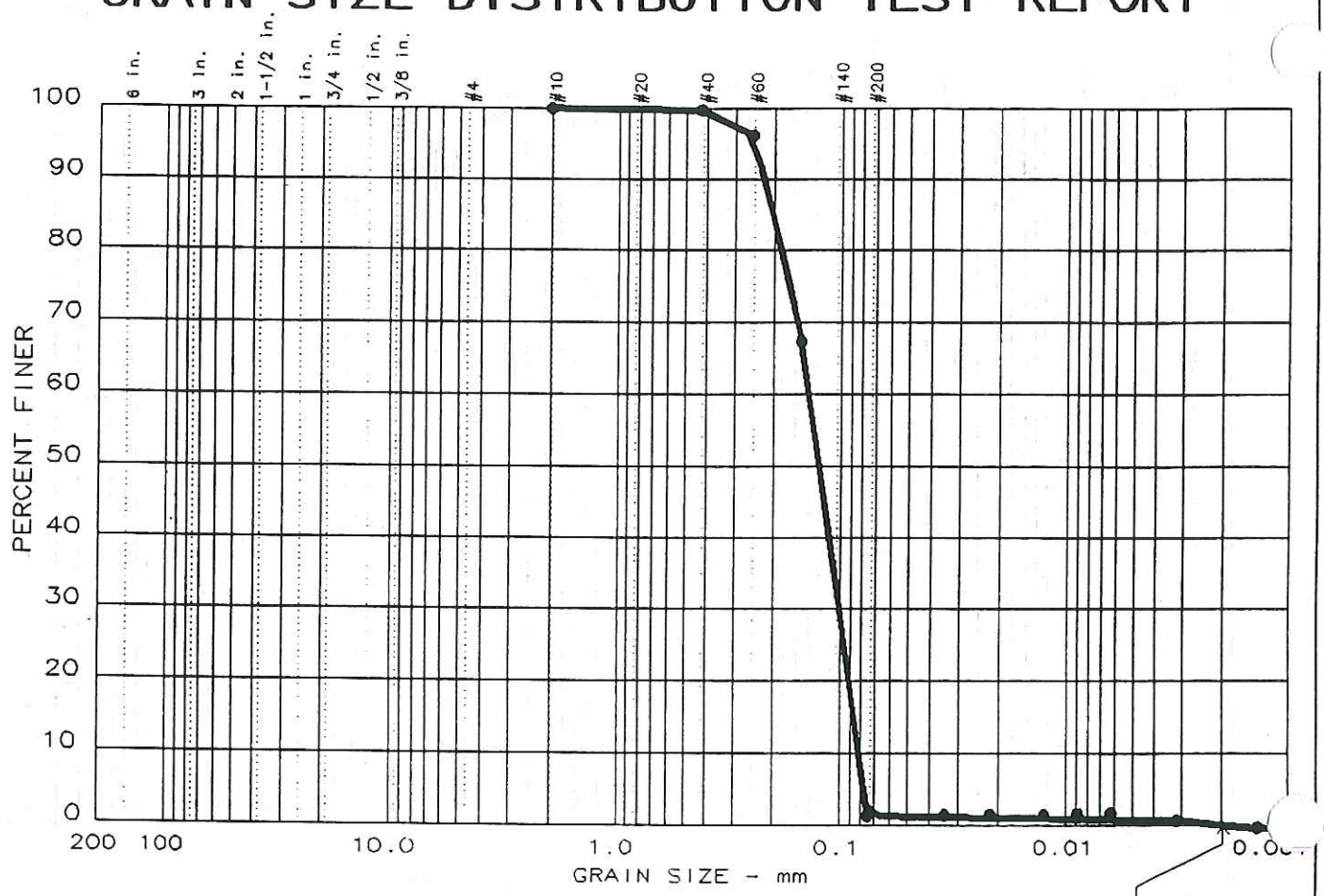
Date: 05/28/97

Remarks:
TESTED BY: JC/DM
CHECKED BY: D.MOORE
NMC = 25.3%

GRAIN SIZE DISTRIBUTION TEST REPORT
PROFESSIONAL SERVICE INDUSTRIES, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	9	0.0	0.0	98.5	1.3	0.2

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.20	0.14	0.12	0.101	0.0864	0.0820	0.90	1.7

	MATERIAL DESCRIPTION	USCS	AASHTO
●		SP	A-3

Project No.: 778-62024
Project: HUNTER 4 / TASK ORDER# 18 & 18A
● Location: STA. MW 29, 13' - 15'

Date: 05/28/97

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

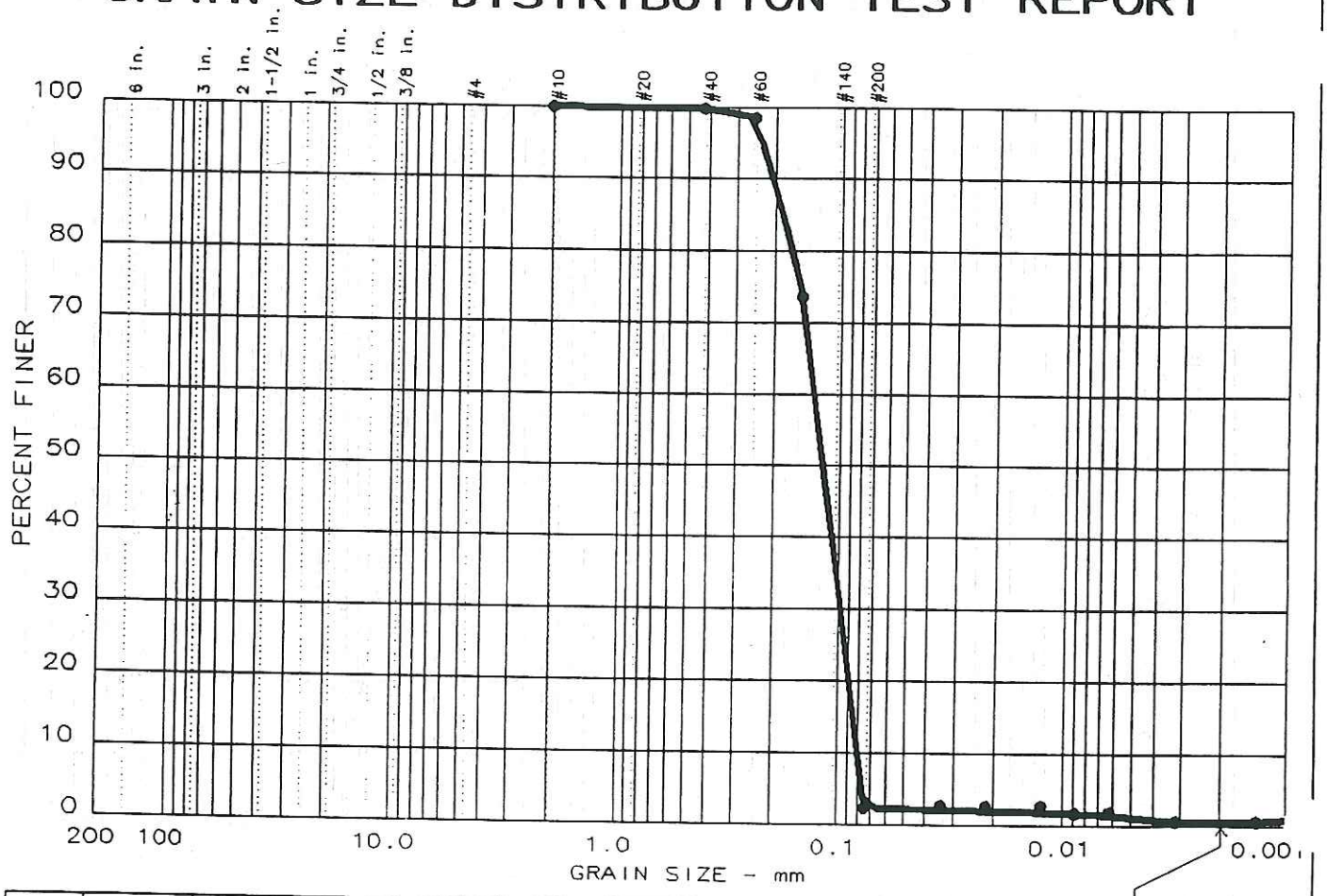
TESTED BY: JC/DM

CHECKED BY: D. MOORE

NMC = 26.4%

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	8	0.0	0.0	97.6	1.7	0.7

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.19	0.13	0.12	0.098	0.0847	0.0807	0.90	1.6

	MATERIAL DESCRIPTION	USCS	AASHTO
●		SP	A-3

Project No.: 778-62024
Project: HUNTER 4 / TASK ORDER# 18 & 18A
● Location: STA. MW 30, 18' - 20'

Date: 05/28/97

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

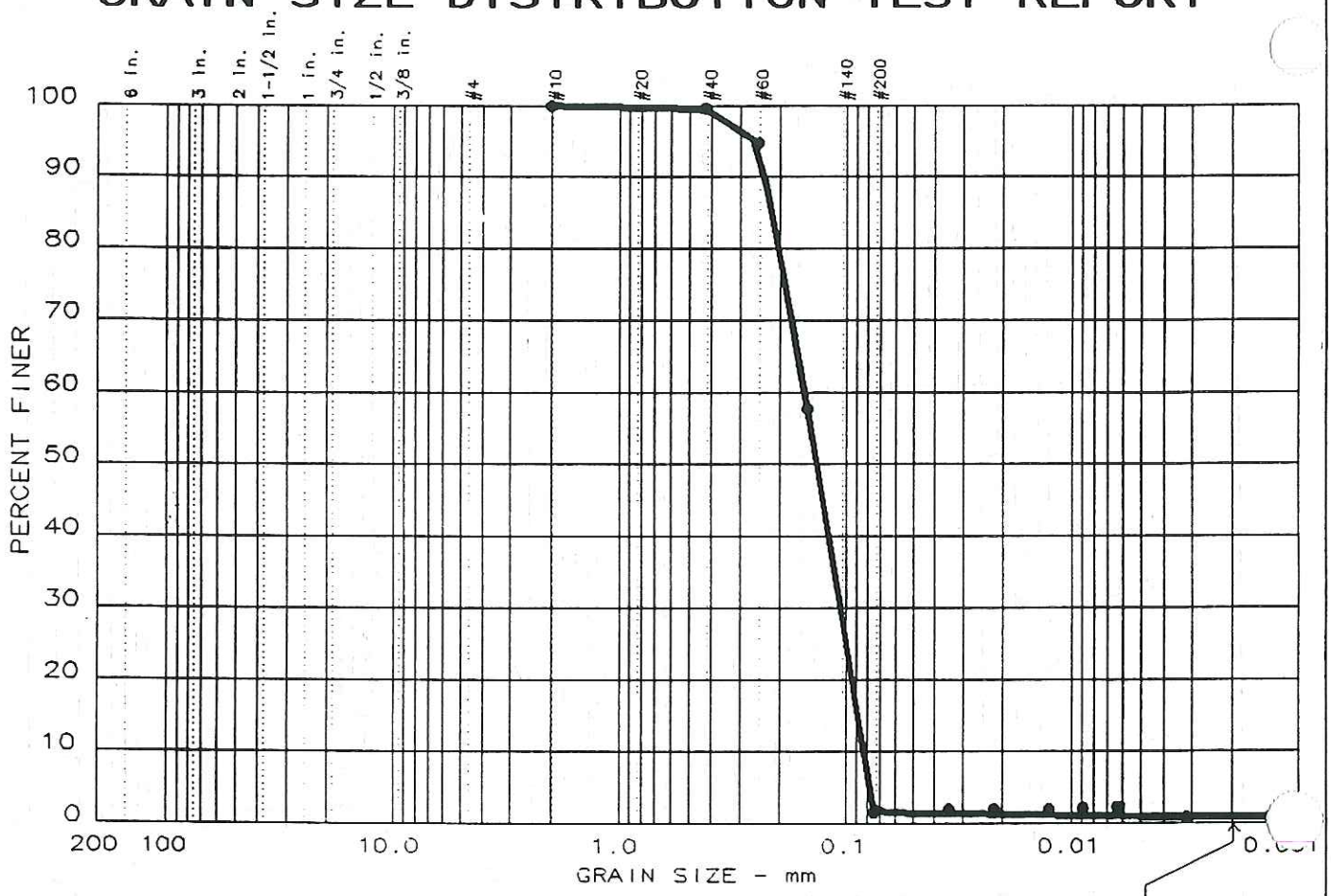
TESTED BY: JC/DM

CHECKED BY: D. MOORE

NMC = 24.1%

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	10	0.0	0.0	98.4	0.7	0.9

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.22	0.15	0.14	0.106	0.0884	0.0831	0.88	1.9

	MATERIAL DESCRIPTION	USCS	AASHTO
●		SP	A-3

Project No.: 778-62024
Project: HUNTER 4 / TASK ORDER# 18 & 18A
● Location: STA. MW 31, 13 - 15'

Date: 05/28/97

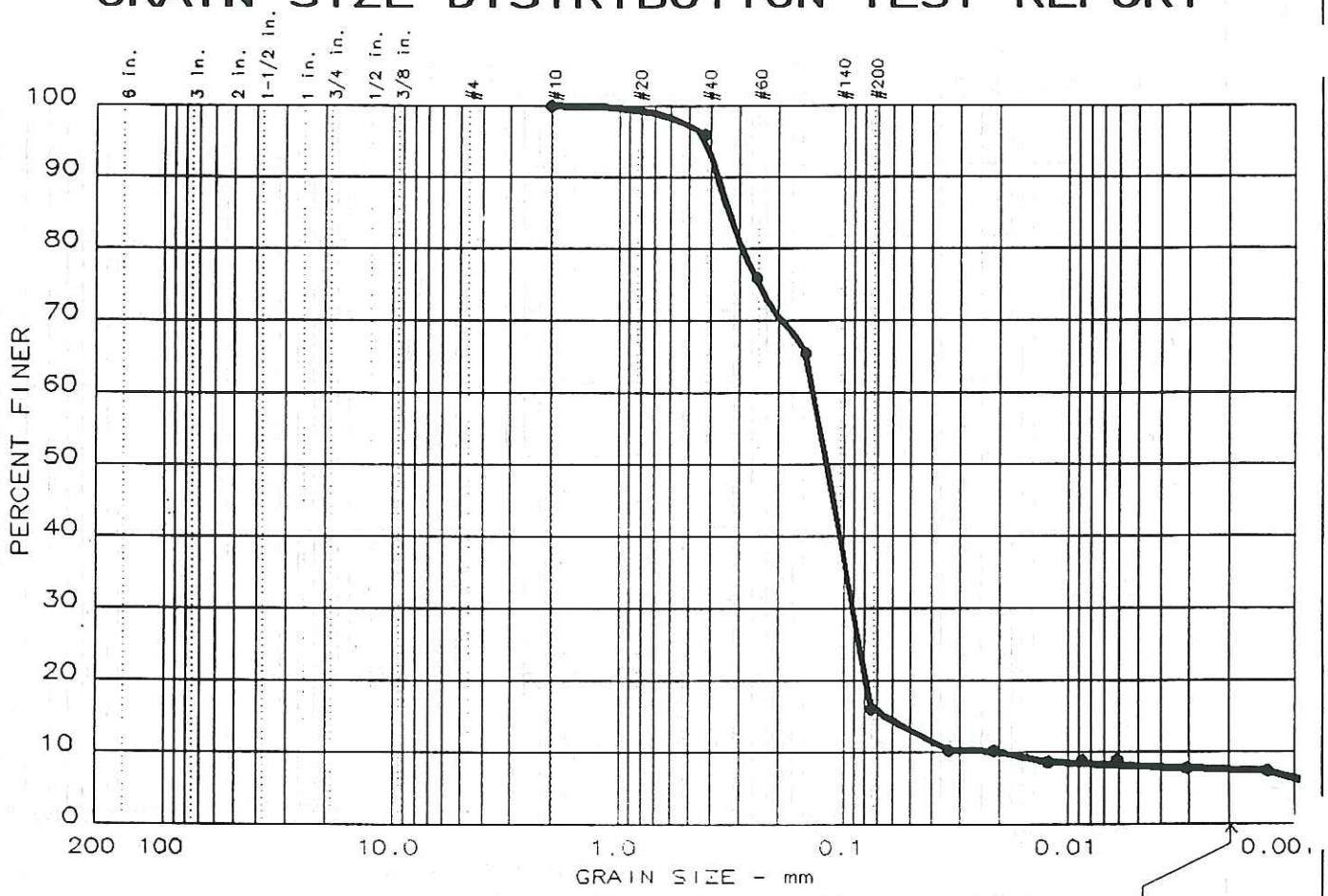
Remarks:
TESTED BY: JC/DM
CHECKED BY: D.MOORE
NMC = 24.7%

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	12	0.0	0.0	83.9	8.5	7.6

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.33	0.14	0.12	0.091	0.0638	0.0188	3.17	7.4

MATERIAL DESCRIPTION	USCS	AASHTO
●	SM	A-2-4

Project No.: 778-62024
Project: HUNTER 4 / TASK ORDER# 18 & 18A
● Location: STA. MW 32, 33' - 35'

Date: 05/28/97

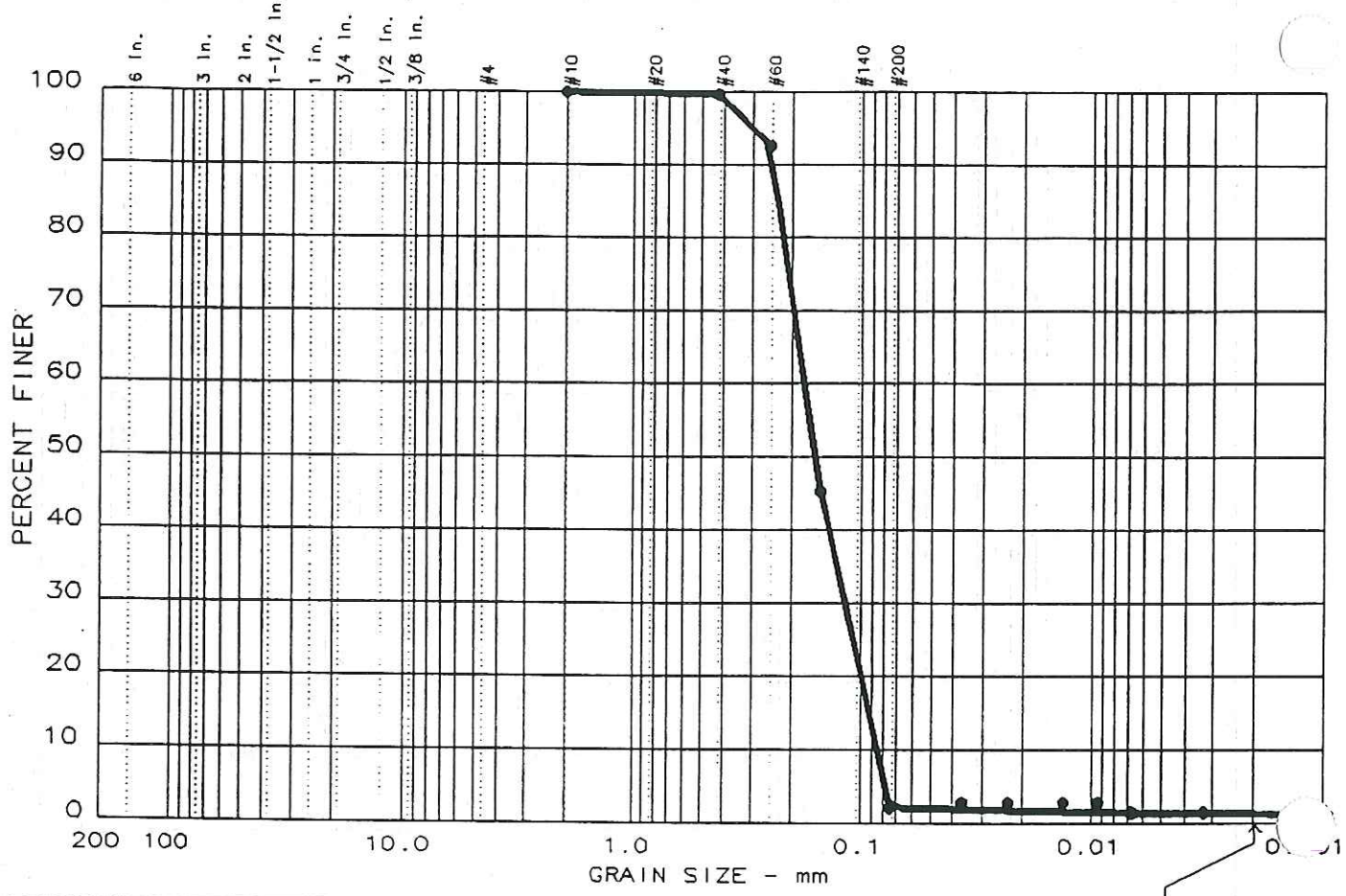
Remarks:
TESTED BY:JC/DM
CHECKED BY:D.MOORE
NMC = 24.9%

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	7	0.0	0.0	97.8	0.8	1.4

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.23	0.18	0.16	0.117	0.0920	0.0849	0.91	2.1

MATERIAL DESCRIPTION	USCS	AASHTO
● LIGHT BROWN FINE SAND	SP	A-3

Project No.: 778-62024
Project: HUNTER IV (4) / PHASE 1
● Location: STA. SB46, 8' - 10'

Date: 07/11/97

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

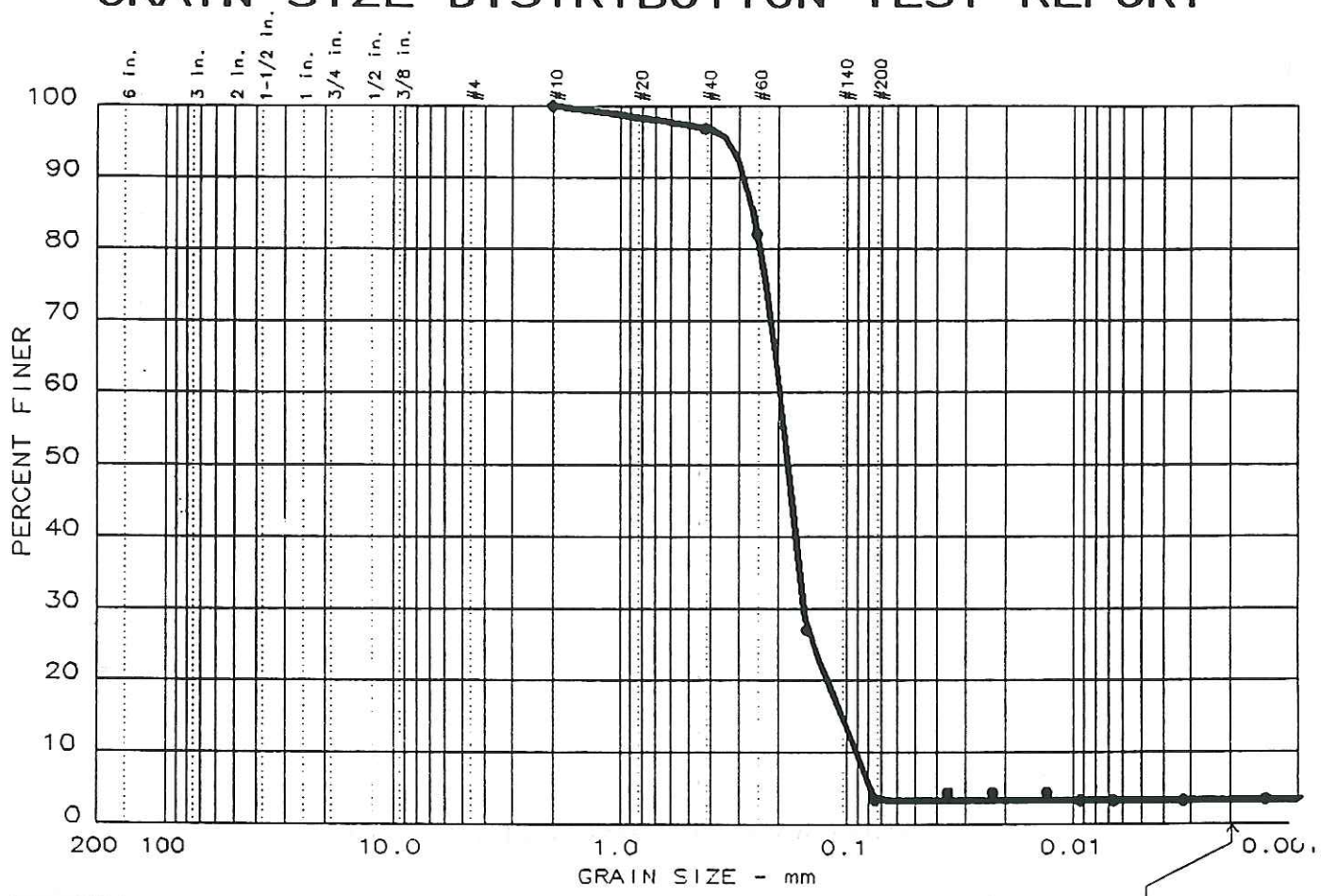
TESTED BY:JC/DM/AW

CHECKED BY:D.MOORE

NMC = 7.1%

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	1	0.0	0.0	96.5	3.5	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			0.26	0.20	0.18	0.154	0.1050	0.0904	1.33	2.2

MATERIAL DESCRIPTION	USCS	AASHTO
● LIGHT GRAY FINE SAND	SP	A-3

Project No.: 778-62024
Project: HUNTER IV (4) / PHASE 1
● Location: STA. SB52, 5' - 7'

Date: 07/11/97

GRAIN SIZE DISTRIBUTION TEST REPORT

PROFESSIONAL SERVICE INDUSTRIES, INC.

Remarks:

TESTED BY:JC/DM

CHECKED BY:D.MOORE

NMC = 7.8%

Figure No. _____

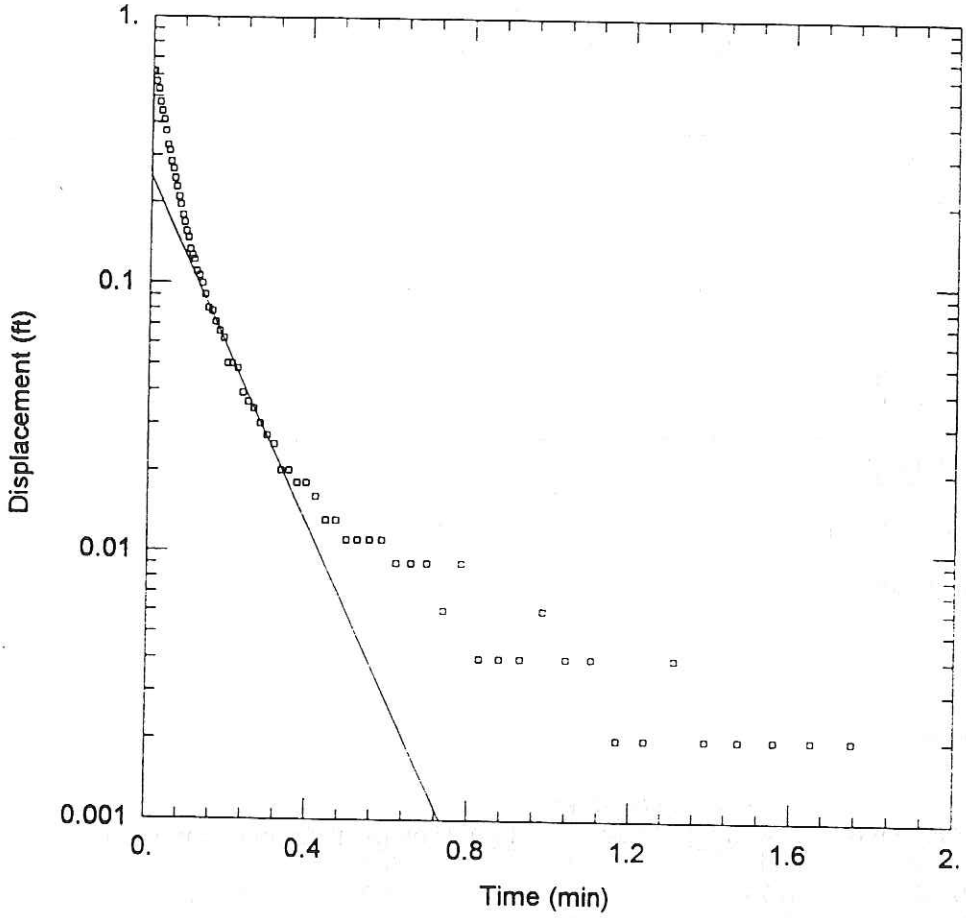
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A.2 SLUG TESTING DATA

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P2-MW05
1 OF 3

FIGURE A



WELL TEST ANALYSIS

Data Set: P:\HAZWASTE\HUNTER4\PH1\aqtesolv\slugtest\mw05slug.aqt
Date: 11/30/99 Time: 16:01:08

PROJECT INFORMATION

Test Location: HAAF
Test Well: MW05

AQUIFER DATA

Saturated Thickness: 60. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW05)

Initial Displacement: 0.62 ft
Casing Radius: 0.083 ft
Screen Length: 10. ft
Water Column Height: 6.6 ft
Wellbore Radius: 0.458 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
K = 0.04326 ft/min
Solution Method: Bouwer-Rice
y0 = 0.2508 ft

AQTESOLV for Windows

Data Set: P:\HAZWASTE\HUNTER4\PH1\aqtesolv\slugtest\mw05slug.aqt
Date: 11/30/99
Time: 16:00:21

PROJECT INFORMATION

Location: HAAF
Test Well: MW05

AQUIFER DATA

Saturated Thickness: 60. ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW05

X Location: 0. ft
Y Location: 0. ft

No. of observations: 91

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.005	0.62	0.1985	0.05	1.168	0.002
0.01	0.569	0.2102	0.05	1.238	0.002
0.015	0.532	0.2227	0.048	1.311	0.004
0.02	0.475	0.2358	0.039	1.39	0.002
0.025	0.44	0.2498	0.036	1.473	0.002
0.03	0.408	0.2647	0.034	1.561	0.002
0.035	0.369	0.2803	0.03	1.655	0.002
0.04	0.327	0.297	0.027	1.753	0.002
0.045	0.313	0.3147	0.025	2.21	0.002
0.05	0.283	0.3333	0.02	2.341	0.002
0.055	0.267	0.3532	0.02	2.953	0.002
0.06	0.246	0.3742	0.018	3.13	0.002
0.065	0.228	0.3963	0.018	3.316	0.002
0.07	0.209	0.4198	0.016	3.515	0.002
0.075	0.196	0.4447	0.013	3.725	0.002
0.08	0.179	0.4697	0.013	3.946	0.002
0.085	0.168	0.4963	0.011	4.181	0.002
0.09	0.156	0.5247	0.011	4.43	0.002
0.095	0.147	0.5547	0.011	4.693	0.002
0.1	0.133	0.5863	0.011	7.453	0.002
0.1058	0.126	0.6213	0.009	7.896	0.002
0.112	0.122	0.658	0.009	9.865	0.002
0.1185	0.11	0.6963	0.009	10.36	0.002
0.1255	0.106	0.738	0.006	10.86	0.002
0.1328	0.099	0.7813	0.009	11.36	0.002
0.1407	0.09	0.828	0.004	11.86	0.002
0.149	0.08	0.8763	0.004	12.36	0.002

AQTESOLV for Windows

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.1578	0.078	0.928	0.004	12.86	0.002
0.1672	0.071	0.983	0.006	13.36	0.002
0.177	0.066	1.041	0.004		
0.1875	0.062	1.103	0.004		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.04326	ft/min
y0	0.2508	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	0.04326	0.001838	ft/min
y0	0.2508	0.007478	ft

Parameter Correlations

	K	y0
K	1.00	0.75
y0	0.75	1.00

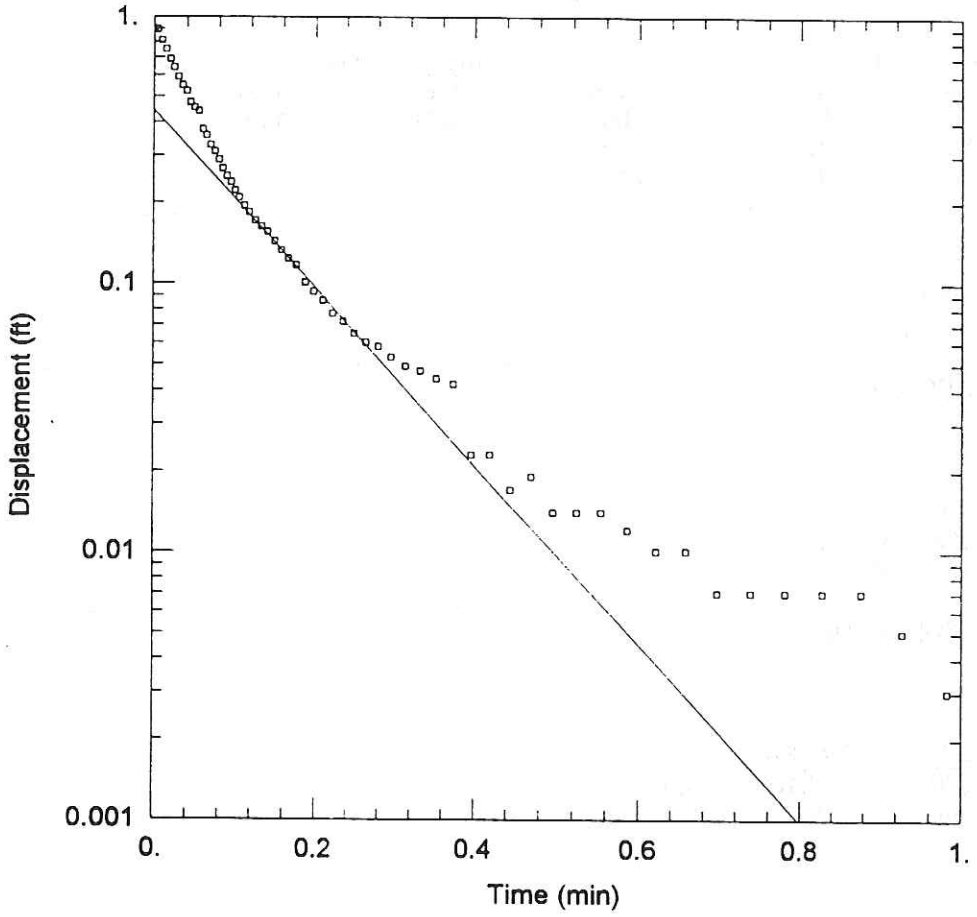
Residual Statistics

for weighted residuals

Sum of Squares ... 0.01285 ft^2
Variance ..... 0.0001444 ft^2
Std. Deviation..... 0.01202 ft
Mean ..... 0.005585 ft
No. of Residuals ... 91.
No. of Estimates ... 2

P2-MW06
1 OF 3

FIGURE B



WELL TEST ANALYSIS

Data Set: P:\HAZWASTE\HUNTER4\PH1\aqtesolv\slugtest\MW06slug.aqt
Date: 11/30/99 Time: 15:53:04

PROJECT INFORMATION

Test Location: HAAF
Test Well: MW06

AQUIFER DATA

Saturated Thickness: 60. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW06)

Initial Displacement: 0.9 ft
Casing Radius: 0.083 ft
Screen Length: 10. ft
Water Column Height: 5.8 ft
Wellbore Radius: 0.458 ft
Gravel Pack Porosity: 0.3

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.04243 ft/min
y0 = 0.4442 ft

AQTESOLV for Windows

Data Set: P:\HAZWASTE\HUNTER4\PH1\aqtesolv\slugtest\MW06slug.aqt
Date: 11/30/99
Time: 15:53:12

PROJECT INFORMATION

Location: HAAF
Test Well: MW06

AQUIFER DATA

Saturated Thickness: 60. ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW06

X Location: 0. ft
Y Location: 0. ft

No. of observations: 71

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.005	0.898	0.1328	0.162	0.5247	0.014
0.01	0.812	0.1407	0.155	0.5547	0.014
0.015	0.752	0.149	0.143	0.5863	0.012
0.02	0.69	0.1578	0.132	0.6213	0.01
0.025	0.642	0.1672	0.123	0.658	0.01
0.03	0.593	0.177	0.116	0.6963	0.007
0.035	0.552	0.1875	0.1	0.738	0.007
0.04	0.524	0.1985	0.093	0.7813	0.007
0.045	0.476	0.2102	0.086	0.828	0.007
0.05	0.453	0.2227	0.077	0.8763	0.007
0.055	0.439	0.2358	0.072	0.928	0.005
0.06	0.376	0.2498	0.065	0.983	0.003
0.065	0.356	0.2647	0.06	1.041	0.003
0.07	0.328	0.2803	0.058	1.103	0.005
0.075	0.31	0.297	0.053	1.168	0.005
0.08	0.289	0.3147	0.049	1.238	0.003
0.085	0.268	0.3333	0.047	1.311	0.003
0.09	0.25	0.3532	0.044	1.39	0.005
0.095	0.238	0.3742	0.042	1.473	0.003
0.1	0.222	0.3963	0.023	1.561	0.003
0.1058	0.208	0.4198	0.023	1.655	0.003
0.112	0.194	0.4447	0.017	2.786	0.003
0.1185	0.183	0.4697	0.019	2.953	0.003
0.1255	0.171	0.4963	0.014		

SOLUTION

AQTESOLV for Windows

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.04243	ft/min
y0	0.4442	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	0.04243	0.001839	ft/min
y0	0.4442	0.01199	ft

Parameter Correlations

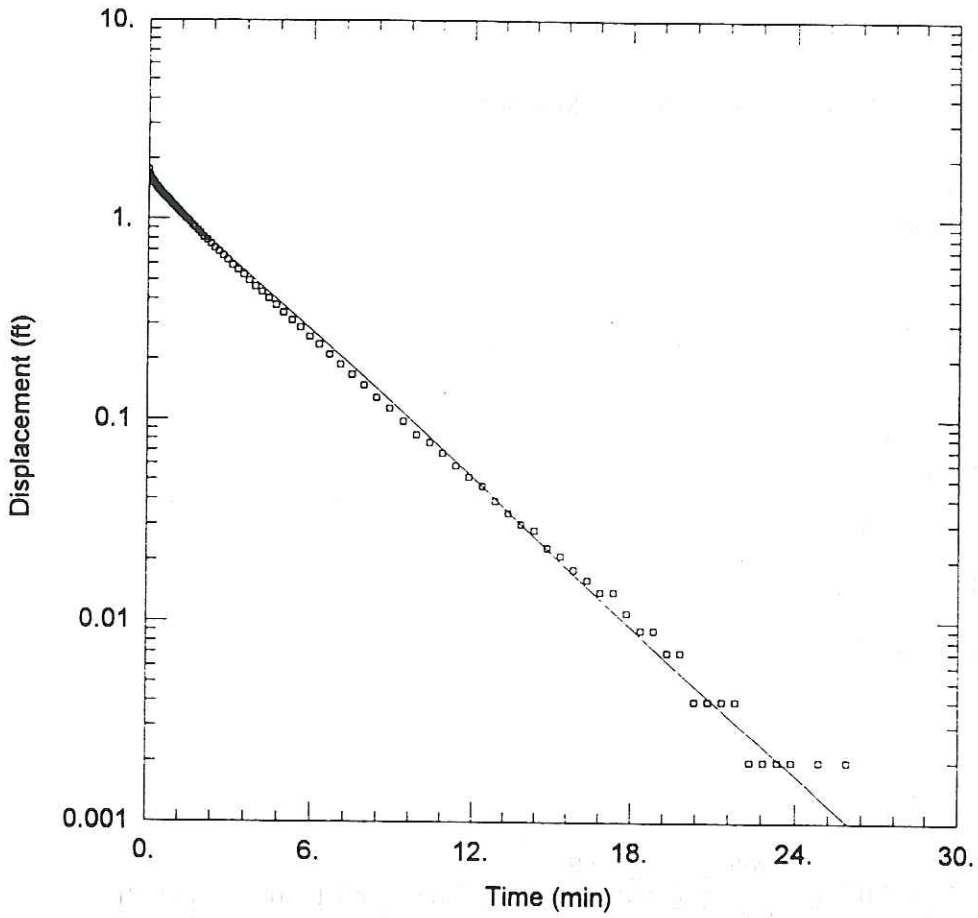
	K	y0
K	1.00	0.75
y0	0.75	1.00

Residual Statistics

for weighted residuals

Sum of Squares ... 0.02901 ft^2
Variance ..... 0.0004204 ft^2
Std. Deviation..... 0.0205 ft
Mean ..... 0.00885 ft
No. of Residuals ... 71.
No. of Estimates ... 2

FIGURE C



WELL TEST ANALYSIS	
Data Set: P:\HAZWASTE\HUNTER4\PH1\aqtesolv\slugtest\mw32slug.aqt	
Date: 11/30/99	Time: 15:55:40
PROJECT INFORMATION	
Test Location: HAAF	
Test Well: MW32	
AQUIFER DATA	
Saturated Thickness: 60. ft	Anisotropy Ratio (Kz/Kr): 1.
WELL DATA (MW32)	
Initial Displacement: 1.63 ft	Water Column Height: 22.66 ft
Casing Radius: 0.083 ft	Wellbore Radius: 0.458 ft
Screen Length: 5. ft	Gravel Pack Porosity: 0.3
SOLUTION	
Aquifer Model: Unconfined	Solution Method: Bouwer-Rice
K = 0.003379 ft/min	y0 = 1.513 ft

AQTESOLV for Windows

Data Set: P:\HAZWASTE\HUNTER4\PH1\aqtesolv\slugtest\mw32slug.aqt
Date: 11/30/99
Time: 15:55:46

PROJECT INFORMATION

Location: HAAF
Test Well: MW32

AQUIFER DATA

Saturated Thickness: 60. ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW32

X Location: 0. ft
Y Location: 0. ft

No. of observations: 130

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.005	1.628	0.4198	1.388	5.27	0.311
0.01	1.758	0.4447	1.377	5.583	0.286
0.015	1.684	0.4697	1.363	5.915	0.258
0.02	1.684	0.4963	1.352	6.266	0.235
0.025	1.67	0.5247	1.333	6.64	0.21
0.03	1.663	0.5547	1.326	7.035	0.187
0.035	1.654	0.5863	1.31	7.453	0.166
0.04	1.647	0.6213	1.296	7.896	0.147
0.045	1.638	0.658	1.285	8.366	0.127
0.05	1.631	0.6963	1.266	8.865	0.113
0.055	1.626	0.738	1.25	9.365	0.097
0.06	1.619	0.7813	1.232	9.865	0.083
0.065	1.617	0.828	1.211	10.36	0.076
0.07	1.61	0.8763	1.192	10.86	0.067
0.075	1.605	0.928	1.172	11.36	0.058
0.08	1.598	0.983	1.153	11.86	0.051
0.085	1.594	1.041	1.13	12.36	0.046
0.09	1.589	1.103	1.107	12.86	0.039
0.095	1.585	1.168	1.084	13.36	0.034
0.1	1.58	1.238	1.059	13.86	0.03
0.1058	1.575	1.311	1.036	14.36	0.028
0.112	1.571	1.39	1.008	14.86	0.023
0.1185	1.566	1.473	0.985	15.36	0.021
0.1255	1.564	1.561	0.957	15.86	0.018
0.1328	1.559	1.655	0.929	16.36	0.016
0.1407	1.543	1.753	0.902	16.86	0.014
0.149	1.543	1.858	0.872	17.36	0.014

AQTESOLV for Windows

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.1578	1.543	1.968	0.842	17.86	0.011
0.1672	1.536	2.085	0.812	18.36	0.009
0.177	1.529	2.21	0.782	18.86	0.009
0.1875	1.522	2.341	0.75	19.36	0.007
0.1985	1.518	2.481	0.717	19.86	0.007
0.2102	1.511	2.63	0.687	20.36	0.004
0.2227	1.501	2.786	0.655	20.86	0.004
0.2358	1.492	2.953	0.623	21.36	0.004
0.2498	1.483	3.13	0.588	21.86	0.004
0.2647	1.476	3.316	0.558	22.36	0.002
0.2803	1.467	3.515	0.526	22.86	0.002
0.297	1.458	3.725	0.491	23.36	0.002
0.3147	1.451	3.946	0.461	23.86	0.002
0.3333	1.439	4.181	0.431	24.86	0.002
0.3532	1.421	4.43	0.401	25.86	0.002
0.3742	1.412	4.693	0.371		
0.3963	1.4	4.973	0.341		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.003379	ft/min
y0	1.513	ft

AUTOMATIC ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	Std. Error	
K	0.003379	3.485E-05	ft/min
y0	1.513	0.003877	ft

Parameter Correlations

	K	y0
K	1.00	0.54
y0	0.54	1.00

Residual Statistics

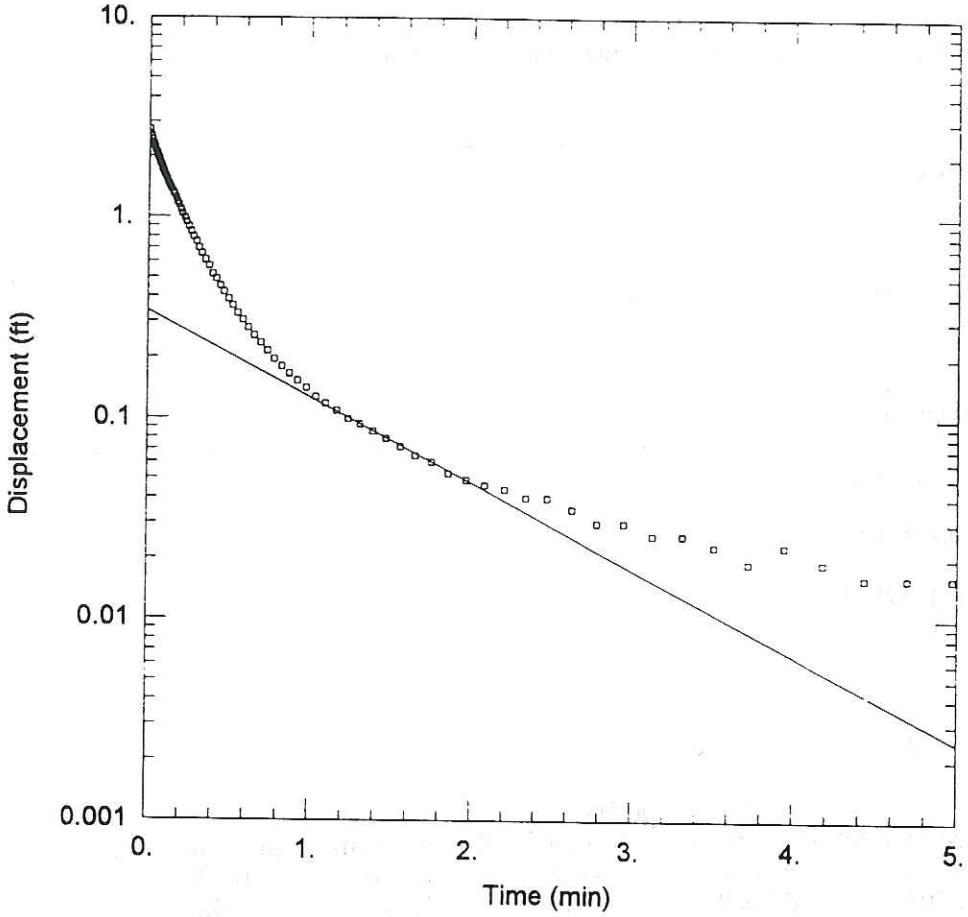
for weighted residuals

Sum of Squares ... 0.07847 ft^2
Variance ..... 0.000613 ft^2
Std. Deviation..... 0.02476 ft
Mean ..... 0.003928 ft

P2-mw32
4 of 4

No. of Residuals . . . 130.
No. of Estimates . . . 2

FIGURE D



WELL TEST ANALYSIS	
Data Set: P:\HAZWASTE\HUNTER4\PH1\aqtesolv\slugtest\mw41slug.aqt	
Date: 11/30/99	Time: 15:57:27
PROJECT INFORMATION	
Test Location: HAAF	
Test Well: MW41	
AQUIFER DATA	
Saturated Thickness: 60. ft	Anisotropy Ratio (Kz/Kr): 1.
WELL DATA (MW41)	
Initial Displacement: 2.74 ft	Water Column Height: 14.8 ft
Casing Radius: 0.167 ft	Wellbore Radius: 0.583 ft
Screen Length: 20. ft	Gravel Pack Porosity: 0.3
SOLUTION	
Aquifer Model: Unconfined	Solution Method: Bouwer-Rice
K = 0.006401 ft/min	y0 = 0.3414 ft

AQTESOLV for Windows

Data Set: P:\HAZWASTE\HUNTER4\PH1\aqtesolv\slugtest\mw41slug.aqt
Date: 11/30/99
Time: 15:57:33

PROJECT INFORMATION

Location: HAAF
Test Well: MW41

AQUIFER DATA

Saturated Thickness: 60. ft
Anisotropy Ratio (Kz/Kr): 1.

OBSERVATION WELL DATA

Number of observation wells: 1

Observation Well No. 1: MW41

X Location: 0. ft
Y Location: 0. ft

No. of observations: 118

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.005	2.736	0.3333	0.655	3.316	0.026
0.01	2.607	0.3532	0.607	3.515	0.023
0.015	2.508	0.3742	0.568	3.725	0.019
0.02	2.438	0.3963	0.517	3.946	0.023
0.025	2.365	0.4198	0.489	4.181	0.019
0.03	2.305	0.4447	0.45	4.43	0.016
0.035	2.252	0.4697	0.42	4.693	0.016
0.04	2.175	0.4963	0.388	4.973	0.016
0.045	2.125	0.5247	0.36	5.27	0.014
0.05	2.067	0.5547	0.33	5.583	0.012
0.055	2.012	0.5863	0.305	5.915	0.012
0.06	1.966	0.6213	0.279	6.266	0.01
0.065	1.913	0.658	0.256	6.64	0.007
0.07	1.864	0.6963	0.236	7.035	0.01
0.075	1.818	0.738	0.215	7.453	0.007
0.08	1.774	0.7813	0.196	7.896	0.007
0.085	1.73	0.828	0.18	8.366	0.007
0.09	1.686	0.8763	0.166	8.865	0.005
0.095	1.65	0.928	0.153	9.365	0.007
0.1	1.608	0.983	0.141	9.865	0.007
0.1058	1.569	1.041	0.127	10.36	0.01
0.112	1.534	1.103	0.118	10.86	0.007
0.1185	1.495	1.168	0.109	11.36	0.007
0.1255	1.453	1.238	0.099	11.86	0.007
0.1328	1.419	1.311	0.093	12.36	0.005
0.1407	1.38	1.39	0.086	12.86	0.005
0.149	1.336	1.473	0.079	13.36	0.003

AQTESOLV for Windows

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.1578	1.294	1.561	0.072	13.86	0.005
0.1672	1.248	1.655	0.065	14.36	0.003
0.177	1.188	1.753	0.06	14.86	0.003
0.1875	1.144	1.858	0.053	15.36	0.005
0.1985	1.089	1.968	0.049	15.86	0.007
0.2102	1.038	2.085	0.046	16.36	0.003
0.2227	0.988	2.21	0.044	16.86	0.005
0.2358	0.939	2.341	0.04	17.36	0.003
0.2498	0.891	2.481	0.04	18.36	0.003
0.2647	0.845	2.63	0.035	18.86	0.003
0.2803	0.794	2.786	0.03	19.36	0.005
0.297	0.752	2.953	0.03		
0.3147	0.697	3.13	0.026		

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.006401	ft/min
y0	0.3414	ft

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ATTACHMENT B

FATE AND TRANSPORT MODELING RESULTS

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FATE AND TRANSPORT MODELING RESULTS FOR FORMER PUMPHOUSE #2 TANK PIT AREA

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Table B.1. Natural Attenuation Modeling Results (Concentration vs. Distance) for the Former Pumphouse #2 Tank Pit Area

Distance from the source (ft)	Distance from the source (m)	Predicted Maximum Benzene Concentration in Groundwater (µg/L)	Distance from the source (ft)	Distance from the source (m)	Predicted Maximum Benzene Concentration in Groundwater (µg/L)
0.0	0.0	1340	160.1	48.8	1610
13.1	4.0	1660	193.6	59.0	1150
19.7	6.0	1820	269.0	82.0	563
26.2	8.0	1980	324.8	99.0	333
49.2	15.0	2520	449.5	137.0	107
62.3	19.0	2700	492.1	150.0	73.8
101.7	31.0	2690	656.2	200.0	17.4
118.1	36.0	2410	820.2	250.0	4.2
124.7	38.0	2290	984.3	300.0	1.03

Table B.2. Natural Attenuation Modeling Results (Concentration vs. Time) for the Former Pumphouse #2 Tank Pit Area

Time (year)	Predicted Maximum Benzene Concentration in Groundwater (µg/L)		Time (year)	Predicted Maximum Benzene Concentration in Groundwater (µg/L)	
	P2-MW05	P2-MW06		P2-MW05	P2-MW06
0.0	2330	697	6.0	155	369
0.5	3510	954	6.5	98.4	251
1.0	4440	1350	7.0	62.3	169
1.5	4330	1860	7.5	39.3	113
2.0	3580	2220	8.0	24.8	74.6
2.5	2700	2290	8.5	15.6	48.9
3.0	1920	2090	9.0	9.76	31.9
3.5	1320	1750	9.5	6.12	20.7
4.0	882	1380	10.0	3.83	13.4
4.5	580	1030	10.5	2.4	8.61
5.0	376	751	11.0	1.5	5.52
5.5	242	532	11.5	0.935	3.53

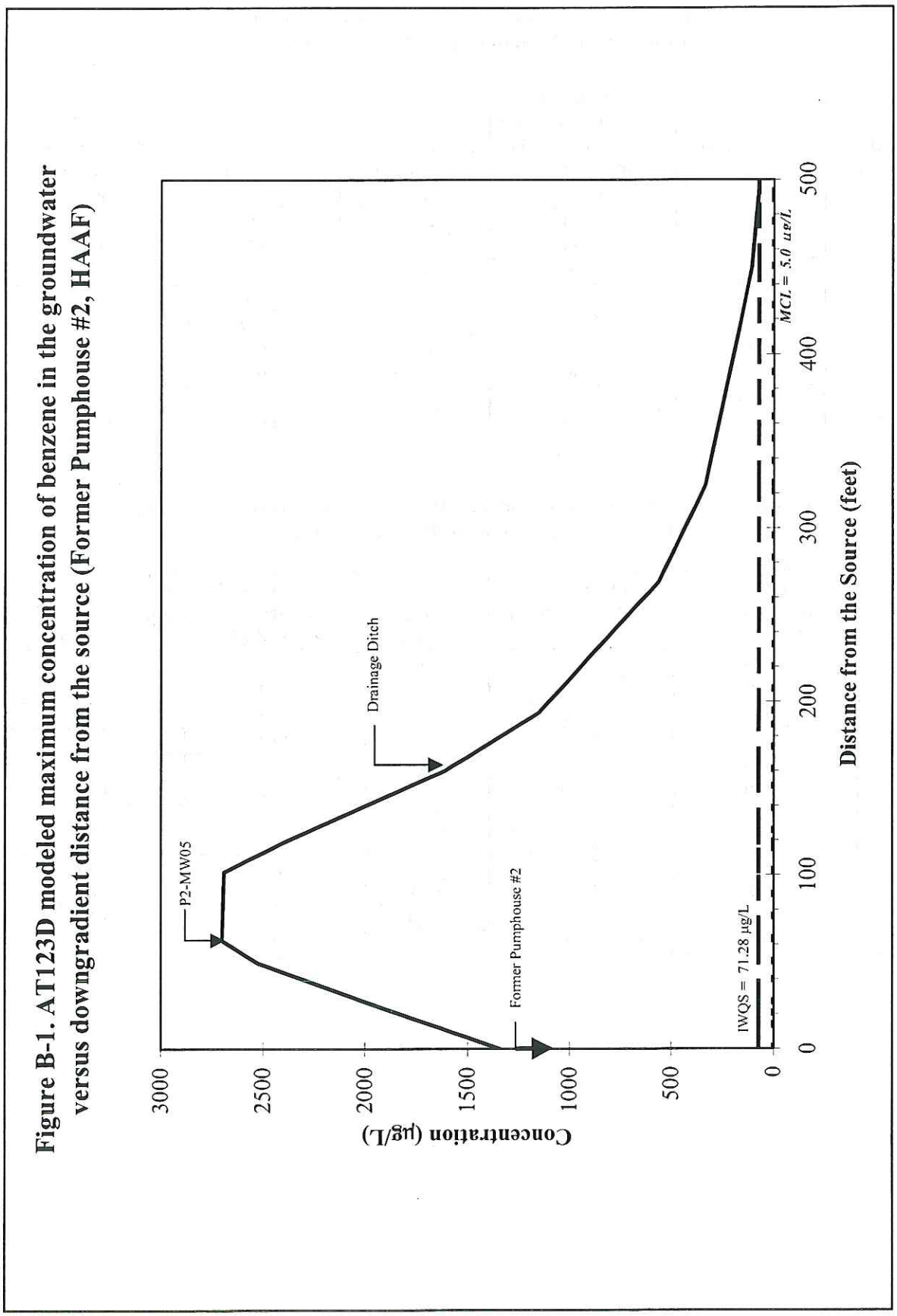


Figure B-1. AT123D modeled maximum concentration of benzene in the groundwater versus downgradient distance from the source (Former Pumphouse #2, HAAF)

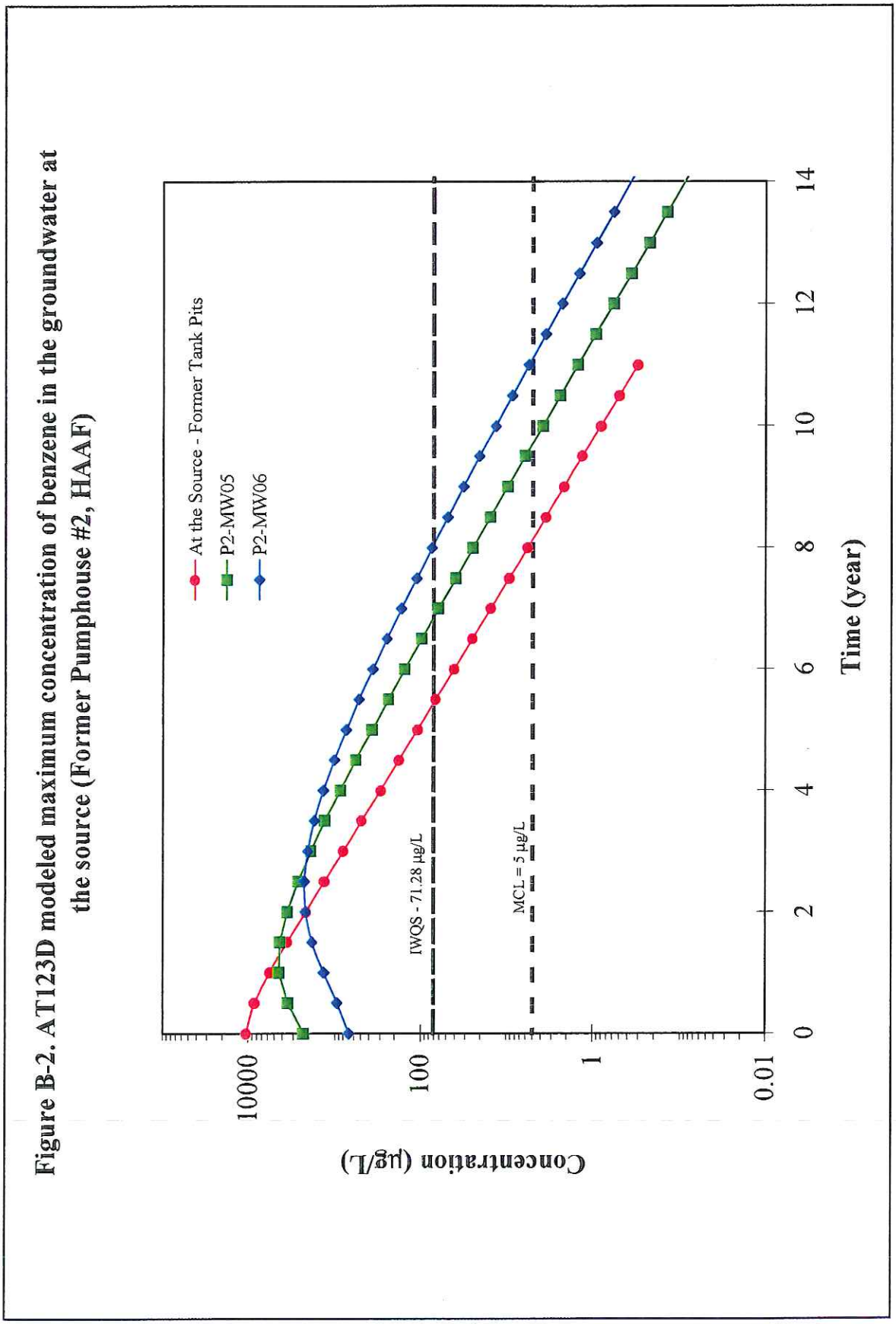


Figure B-2. AT123D modeled maximum concentration of benzene in the groundwater at the source (Former Pumphouse #2, HAAF)

HAAF Former Pumphouse 2, Tank Pit Area, Benzene - CAP B Modeling

NO. OF POINTS IN X-DIRECTION	12
NO. OF POINTS IN Y-DIRECTION	5
NO. OF POINTS IN Z-DIRECTION	1
NO. OF ROOTS: NO. OF SERIES TERMS	400
NO. OF BEGINNING TIME STEP	49
NO. OF ENDING TIME STEP	151
NO. OF TIME INTERVALS FOR PRINTED OUT SOLUTION	6
INSTANTANEOUS SOURCE CONTROL = 0 FOR INSTANT SOURCE	1
SOURCE CONDITION CONTROL = 0 FOR STEADY SOURCE	0
INTERMITTENT OUTPUT CONTROL = 0 NO SUCH OUTPUT	1
CASE CONTROL =1 THERMAL, = 2 FOR CHEMICAL, = 3 RAD	2
AQUIFER DEPTH, = 0.0 FOR INFINITE DEEP (METERS) ...	0.1220E+02
AQUIFER WIDTH, = 0.0 FOR INFINITE WIDE (METERS) ...	0.0000E+00
BEGIN POINT OF X-SOURCE LOCATION (METERS)	-0.2134E+02
END POINT OF X-SOURCE LOCATION (METERS)	0.0000E+00
BEGIN POINT OF Y-SOURCE LOCATION (METERS)	-0.6100E+01
END POINT OF Y-SOURCE LOCATION (METERS)	0.6100E+01
BEGIN POINT OF Z-SOURCE LOCATION (METERS)	0.0000E+00
END POINT OF Z-SOURCE LOCATION (METERS)	0.0000E+00
POROSITY	0.1800E+00
HYDRAULIC CONDUCTIVITY (METER/HOUR)	0.4370E+00
HYDRAULIC GRADIENT	0.5000E-02
LONGITUDINAL DISPERSIVITY (METER)	0.5000E+01
LATERAL DISPERSIVITY (METER)	0.1600E+01
VERTICAL DISPERSIVITY (METER)	0.5000E+00
DISTRIBUTION COEFFICIENT, KD (M**3/KG)	0.9500E-03
HEAT EXCHANGE COEFFICIENT (KCAL/HR-M**2-DEGREE C)..	0.0000E+00
MOLECULAR DIFFUSION MULTIPLY BY POROSITY (M**2/HR)	0.3530E-05
DECAY CONSTANT (PER HOUR)	0.4000E-04
BULK DENSITY OF THE SOIL (KG/M**3)	0.1540E+04
ACCURACY TOLERANCE FOR REACHING STEADY STATE	0.1000E-02
DENSITY OF WATER (KG/M**3)	0.1000E+04
TIME INTERVAL SIZE FOR THE DESIRED SOLUTION (HR) ..	0.7300E+03
DISCHARGE TIME (HR)	0.3504E+05
WASTE RELEASE RATE (KCAL/HR), (KG/HR), OR (CI/HR) .	0.2021E-02
RETARDATION FACTOR	0.9128E+01
RETARDED DARCY VELOCITY (M/HR)	0.1330E-02
RETARDED LONGITUDINAL DISPERSION COEF. (M**2/HR) ..	0.6652E-02
RETARDED LATERAL DISPERSION COEFFICIENT (M**2/HR) .	0.2130E-02
RETARDED VERTICAL DISPERSION COEFFICIENT (M**2/HR).	0.6671E-03

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.0000E+00 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

	X									
Y	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
8.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
-4.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

CONTINUE

	X	
Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.000E+00	0.000E+00
8.	0.000E+00	0.000E+00
0.	0.000E+00	0.000E+00
-4.	0.000E+00	0.000E+00

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.3504E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

	X									
Y	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.796E-08	0.714E-04	0.162E-02	0.201E-02	0.221E-02	0.240E-02	0.308E-02	0.333E-02	0.342E-02	0.313E-02
8.	0.946E-06	0.132E+00	0.435E+01	0.358E+01	0.321E+01	0.288E+01	0.191E+01	0.155E+01	0.830E+00	0.594E+00
0.	0.120E-05	0.257E+00	0.106E+02	0.753E+01	0.627E+01	0.531E+01	0.302E+01	0.233E+01	0.113E+01	0.789E+00
-4.	0.113E-05	0.220E+00	0.908E+01	0.646E+01	0.540E+01	0.460E+01	0.269E+01	0.210E+01	0.105E+01	0.734E+00

CONTINUE

	X	
Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.299E-02	0.203E-02
8.	0.528E+00	0.259E+00
0.	0.697E+00	0.330E+00
-4.	0.650E+00	0.311E+00

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.3942E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

	X									
Y	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.840E-08	0.437E-04	0.985E-03	0.125E-02	0.139E-02	0.153E-02	0.210E-02	0.236E-02	0.276E-02	0.272E-02
8.	0.133E-05	0.130E+00	0.327E+01	0.327E+01	0.319E+01	0.306E+01	0.232E+01	0.192E+01	0.104E+01	0.760E+00
0.	0.173E-05	0.329E+00	0.854E+01	0.812E+01	0.769E+01	0.715E+01	0.462E+01	0.351E+01	0.157E+01	0.108E+01

-4.	0.162E-05	0.282E+00	0.733E+01	0.698E+01	0.661E+01	0.615E+01	0.401E+01	0.307E+01	0.142E+01	0.988E+00

CONTINUE

X

Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.267E-02	0.212E-02
8.	0.682E+00	0.358E+00
0.	0.954E+00	0.473E+00
-4.	0.877E+00	0.441E+00

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.4380E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

X

Y	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.797E-08	0.267E-04	0.597E-03	0.770E-03	0.866E-03	0.966E-03	0.139E-02	0.161E-02	0.210E-02	0.220E-02
8.	0.175E-05	0.896E-01	0.214E+01	0.235E+01	0.242E+01	0.245E+01	0.228E+01	0.206E+01	0.128E+01	0.952E+00
0.	0.240E-05	0.238E+00	0.573E+01	0.614E+01	0.620E+01	0.616E+01	0.523E+01	0.444E+01	0.226E+01	0.154E+01
-4.	0.221E-05	0.204E+00	0.492E+01	0.527E+01	0.533E+01	0.530E+01	0.451E+01	0.384E+01	0.199E+01	0.137E+01

CONTINUE

X

Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.220E-02	0.199E-02
8.	0.859E+00	0.470E+00
0.	0.135E+01	0.660E+00
-4.	0.121E+01	0.606E+00

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.4818E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

X

Y	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.696E-08	0.163E-04	0.362E-03	0.474E-03	0.537E-03	0.604E-03	0.908E-03	0.108E-02	0.153E-02	0.168E-02
8.	0.224E-05	0.571E-01	0.133E+01	0.155E+01	0.165E+01	0.173E+01	0.188E+01	0.184E+01	0.140E+01	0.111E+01
0.	0.341E-05	0.153E+00	0.359E+01	0.413E+01	0.434E+01	0.450E+01	0.460E+01	0.433E+01	0.285E+01	0.209E+01
-4.	0.308E-05	0.132E+00	0.309E+01	0.355E+01	0.373E+01	0.386E+01	0.396E+01	0.373E+01	0.248E+01	0.183E+01

CONTINUE

X

Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.172E-02	0.173E-02
8.	0.102E+01	0.594E+00
0.	0.186E+01	0.931E+00
-4.	0.164E+01	0.837E+00

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.5256E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

	X									
Y	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.571E-08	0.995E-05	0.220E-03	0.291E-03	0.332E-03	0.376E-03	0.585E-03	0.708E-03	0.108E-02	0.124E-02
8.	0.273E-05	0.355E-01	0.812E+00	0.987E+00	0.107E+01	0.115E+01	0.140E+01	0.145E+01	0.133E+01	0.116E+01
0.	0.473E-05	0.957E-01	0.220E+01	0.264E+01	0.285E+01	0.304E+01	0.354E+01	0.358E+01	0.297E+01	0.242E+01
-4.	0.419E-05	0.822E-01	0.189E+01	0.227E+01	0.245E+01	0.261E+01	0.304E+01	0.309E+01	0.257E+01	0.210E+01

CONTINUE

	X	
Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.128E-02	0.141E-02
8.	0.109E+01	0.707E+00
0.	0.222E+01	0.126E+01
-4.	0.194E+01	0.111E+01

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.5694E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

	X									
Y	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.446E-08	0.608E-05	0.134E-03	0.179E-03	0.205E-03	0.233E-03	0.373E-03	0.459E-03	0.745E-03	0.885E-03
8.	0.302E-05	0.218E-01	0.493E+00	0.616E+00	0.680E+00	0.744E+00	0.977E+00	0.107E+01	0.114E+01	0.107E+01
0.	0.590E-05	0.589E-01	0.134E+01	0.166E+01	0.182E+01	0.198E+01	0.252E+01	0.270E+01	0.269E+01	0.241E+01
-4.	0.516E-05	0.506E-01	0.115E+01	0.142E+01	0.156E+01	0.170E+01	0.217E+01	0.233E+01	0.232E+01	0.208E+01

CONTINUE

	X	
Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.929E-03	0.111E-02
8.	0.104E+01	0.767E+00
0.	0.229E+01	0.151E+01
-4.	0.198E+01	0.132E+01

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.6132E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.336E-08	0.371E-05	0.816E-04	0.110E-03	0.126E-03	0.144E-03	0.236E-03	0.295E-03	0.504E-03	0.618E-03
8.	0.302E-05	0.133E-01	0.299E+00	0.381E+00	0.426E+00	0.472E+00	0.659E+00	0.747E+00	0.906E+00	0.910E+00
0.	0.638E-05	0.360E-01	0.811E+00	0.103E+01	0.114E+01	0.126E+01	0.172E+01	0.192E+01	0.221E+01	0.214E+01
-4.	0.555E-05	0.309E-01	0.697E+00	0.883E+00	0.982E+00	0.108E+01	0.148E+01	0.165E+01	0.190E+01	0.185E+01

CONTINUE

Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.655E-03	0.835E-03
8.	0.900E+00	0.757E+00
0.	0.209E+01	0.161E+01
-4.	0.180E+01	0.140E+01

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.6570E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.246E-08	0.227E-05	0.498E-04	0.673E-04	0.777E-04	0.894E-04	0.149E-03	0.189E-03	0.337E-03	0.424E-03
8.	0.276E-05	0.812E-02	0.181E+00	0.235E+00	0.265E+00	0.296E+00	0.434E+00	0.507E+00	0.679E+00	0.723E+00
0.	0.617E-05	0.220E-01	0.492E+00	0.634E+00	0.712E+00	0.794E+00	0.114E+01	0.132E+01	0.169E+01	0.175E+01
-4.	0.535E-05	0.189E-01	0.422E+00	0.545E+00	0.612E+00	0.682E+00	0.983E+00	0.113E+01	0.146E+01	0.151E+01

CONTINUE

Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.453E-03	0.612E-03
8.	0.729E+00	0.687E+00
0.	0.175E+01	0.154E+01
-4.	0.151E+01	0.133E+01

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7008E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.175E-08	0.139E-05	0.304E-04	0.413E-04	0.479E-04	0.553E-04	0.938E-04	0.120E-03	0.222E-03	0.286E-03
8.	0.235E-05	0.496E-02	0.110E+00	0.144E+00	0.164E+00	0.185E+00	0.281E+00	0.336E+00	0.490E+00	0.546E+00
0.	0.547E-05	0.134E-01	0.298E+00	0.390E+00	0.441E+00	0.496E+00	0.745E+00	0.882E+00	0.124E+01	0.135E+01

-4.	0.472E-05	0.115E-01	0.256E+00	0.335E+00	0.379E+00	0.427E+00	0.640E+00	0.758E+00	0.107E+01	0.117E+01

CONTINUE

X

Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.309E-03	0.439E-03
8.	0.560E+00	0.583E+00
0.	0.138E+01	0.136E+01
-4.	0.119E+01	0.117E+01

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7446E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

X

Y	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.123E-08	0.853E-06	0.186E-04	0.254E-04	0.295E-04	0.342E-04	0.589E-04	0.760E-04	0.146E-03	0.191E-03
8.	0.190E-05	0.303E-02	0.668E-01	0.886E-01	0.101E+00	0.115E+00	0.181E+00	0.220E+00	0.343E+00	0.398E+00
0.	0.454E-05	0.819E-02	0.181E+00	0.239E+00	0.273E+00	0.309E+00	0.479E+00	0.580E+00	0.878E+00	0.100E+01
-4.	0.392E-05	0.703E-02	0.156E+00	0.206E+00	0.234E+00	0.265E+00	0.412E+00	0.498E+00	0.755E+00	0.862E+00

CONTINUE

X

Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.208E-03	0.309E-03
8.	0.414E+00	0.469E+00
0.	0.103E+01	0.112E+01
-4.	0.891E+00	0.969E+00

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7884E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

X

Y	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.848E-09	0.523E-06	0.114E-04	0.156E-04	0.182E-04	0.211E-04	0.369E-04	0.479E-04	0.946E-04	0.126E-03
8.	0.146E-05	0.185E-02	0.407E-01	0.544E-01	0.624E-01	0.713E-01	0.115E+00	0.142E+00	0.235E+00	0.282E+00
0.	0.357E-05	0.500E-02	0.110E+00	0.147E+00	0.168E+00	0.192E+00	0.306E+00	0.376E+00	0.607E+00	0.718E+00
-4.	0.308E-05	0.429E-02	0.947E-01	0.126E+00	0.145E+00	0.165E+00	0.263E+00	0.323E+00	0.522E+00	0.618E+00

CONTINUE

X

Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.138E-03	0.214E-03
8.	0.297E+00	0.362E+00
0.	0.751E+00	0.885E+00
-4.	0.647E+00	0.763E+00

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8322E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.578E-09	0.321E-06	0.698E-05	0.961E-05	0.112E-04	0.130E-04	0.230E-04	0.302E-04	0.611E-04	0.830E-04
8.	0.109E-05	0.113E-02	0.248E-01	0.334E-01	0.385E-01	0.441E-01	0.727E-01	0.912E-01	0.158E+00	0.196E+00
0.	0.270E-05	0.305E-02	0.671E-01	0.901E-01	0.104E+00	0.119E+00	0.194E+00	0.242E+00	0.411E+00	0.502E+00
-4.	0.233E-05	0.262E-02	0.577E-01	0.775E-01	0.891E-01	0.102E+00	0.167E+00	0.208E+00	0.354E+00	0.432E+00

CONTINUE

Y \ X	38.	49.
76.	0.000E+00	0.000E+00
36.	0.913E-04	0.146E-03
8.	0.208E+00	0.271E+00
0.	0.532E+00	0.671E+00
-4.	0.458E+00	0.578E+00

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8760E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.385E-09	0.197E-06	0.428E-05	0.591E-05	0.691E-05	0.806E-05	0.144E-04	0.190E-04	0.393E-04	0.541E-04
8.	0.789E-06	0.691E-03	0.151E-01	0.205E-01	0.237E-01	0.273E-01	0.458E-01	0.582E-01	0.105E+00	0.133E+00
0.	0.199E-05	0.187E-02	0.409E-01	0.553E-01	0.639E-01	0.734E-01	0.122E+00	0.155E+00	0.275E+00	0.345E+00
-4.	0.171E-05	0.161E-02	0.352E-01	0.475E-01	0.549E-01	0.631E-01	0.105E+00	0.133E+00	0.236E+00	0.297E+00

CONTINUE

Y \ X	38.	49.
76.	0.000E+00	0.000E+00
36.	0.599E-04	0.990E-04
8.	0.143E+00	0.197E+00
0.	0.369E+00	0.494E+00
-4.	0.317E+00	0.425E+00

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.9198E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.256E-09	0.121E-06	0.263E-05	0.364E-05	0.426E-05	0.498E-05	0.897E-05	0.119E-04	0.252E-04	0.351E-04
8.	0.560E-06	0.423E-03	0.925E-02	0.126E-01	0.146E-01	0.169E-01	0.288E-01	0.369E-01	0.692E-01	0.897E-01
0.	0.142E-05	0.114E-02	0.250E-01	0.340E-01	0.394E-01	0.454E-01	0.770E-01	0.984E-01	0.182E+00	0.233E+00

-4.	0.123E-05	0.983E-03	0.215E-01	0.292E-01	0.338E-01	0.390E-01	0.662E-01	0.846E-01	0.156E+00	0.201E+00

CONTINUE

X

Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.390E-04	0.664E-04
8.	0.971E-01	0.140E+00
0.	0.251E+00	0.355E+00
-4.	0.216E+00	0.306E+00

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.9636E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

X

Y	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.166E-09	0.746E-07	0.161E-05	0.224E-05	0.263E-05	0.308E-05	0.559E-05	0.746E-05	0.161E-04	0.227E-04
8.	0.390E-06	0.260E-03	0.566E-02	0.774E-02	0.900E-02	0.104E-01	0.180E-01	0.234E-01	0.452E-01	0.597E-01
0.	0.100E-05	0.701E-03	0.153E-01	0.209E-01	0.243E-01	0.281E-01	0.483E-01	0.623E-01	0.119E+00	0.156E+00
-4.	0.861E-06	0.602E-03	0.131E-01	0.179E-01	0.208E-01	0.241E-01	0.415E-01	0.535E-01	0.102E+00	0.134E+00

CONTINUE

X

Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.253E-04	0.442E-04
8.	0.651E-01	0.980E-01
0.	0.169E+00	0.250E+00
-4.	0.146E+00	0.215E+00

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1007E+06 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

X

Y	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.108E-09	0.460E-07	0.993E-06	0.138E-05	0.162E-05	0.190E-05	0.348E-05	0.467E-05	0.102E-04	0.146E-04
8.	0.267E-06	0.159E-03	0.346E-02	0.476E-02	0.555E-02	0.644E-02	0.113E-01	0.147E-01	0.293E-01	0.394E-01
0.	0.688E-06	0.430E-03	0.936E-02	0.128E-01	0.149E-01	0.173E-01	0.302E-01	0.393E-01	0.774E-01	0.103E+00
-4.	0.592E-06	0.369E-03	0.804E-02	0.110E-01	0.128E-01	0.149E-01	0.260E-01	0.338E-01	0.665E-01	0.888E-01

CONTINUE

X

Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.163E-04	0.292E-04
8.	0.432E-01	0.676E-01
0.	0.113E+00	0.174E+00
-4.	0.970E-01	0.149E+00

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1051E+06 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

	X									
Y	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.689E-10	0.283E-07	0.611E-06	0.853E-06	0.100E-05	0.118E-05	0.217E-05	0.292E-05	0.651E-05	0.937E-05
8.	0.181E-06	0.978E-04	0.212E-02	0.293E-02	0.342E-02	0.398E-02	0.706E-02	0.927E-02	0.189E-01	0.258E-01
0.	0.471E-06	0.264E-03	0.573E-02	0.789E-02	0.921E-02	0.107E-01	0.189E-01	0.248E-01	0.500E-01	0.678E-01
-4.	0.405E-06	0.227E-03	0.493E-02	0.678E-02	0.792E-02	0.920E-02	0.162E-01	0.213E-01	0.430E-01	0.583E-01

CONTINUE

	X	
Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.105E-04	0.192E-04
8.	0.284E-01	0.461E-01
0.	0.746E-01	0.119E+00
-4.	0.641E-01	0.102E+00

STEADY STATE SOLUTION HAS NOT BEEN REACHED BEFORE FINAL SIMULATING TIME

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1095E+06 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

	X									
Y	-76.	-31.	0.	4.	6.	8.	15.	19.	31.	36.
76.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
36.	0.433E-10	0.175E-07	0.376E-06	0.526E-06	0.620E-06	0.728E-06	0.135E-05	0.182E-05	0.413E-05	0.599E-05
8.	0.121E-06	0.601E-04	0.130E-02	0.180E-02	0.211E-02	0.246E-02	0.440E-02	0.582E-02	0.122E-01	0.168E-01
0.	0.316E-06	0.162E-03	0.352E-02	0.486E-02	0.568E-02	0.662E-02	0.118E-01	0.156E-01	0.322E-01	0.443E-01
-4.	0.272E-06	0.139E-03	0.302E-02	0.417E-02	0.488E-02	0.569E-02	0.101E-01	0.134E-01	0.277E-01	0.381E-01

CONTINUE

	X	
Y	38.	49.
76.	0.000E+00	0.000E+00
36.	0.675E-05	0.126E-04
8.	0.186E-01	0.311E-01
0.	0.489E-01	0.806E-01
-4.	0.421E-01	0.693E-01

FATE AND TRANSPORT MODELING RESULTS FOR FORMER FUEL PIT 2E

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Table B.3. Natural Attenuation Modeling Results (Concentration vs. Distance) for the Former Fuel Pit 2E

Distance from the source (ft)	Distance from the source (m)	Predicted Maximum Benzene Concentration in Groundwater (µg/L)	Distance from the source (ft)	Distance from the source (m)	Predicted Maximum Benzene Concentration in Groundwater (µg/L)
0.0	0.0	260	131.2	40.0	52.9
6.6	2.0	220	213.3	65.0	23.6
16.4	5.0	193	237.5	72.4	18.6
23.0	7.0	180	325.1	99.1	8.16
31.2	9.5	160	337.6	102.9	7.32
49.2	15.0	129	387.5	118.1	4.64
65.6	20.0	104	450.1	137.2	2.64
98.4	30.0	74	656.2	200.0	0

Table B.4. Natural Attenuation Modeling Results (Concentration vs. Time) for the Former Fuel Pit 2E

Time (year)	Predicted Maximum Benzene Concentration in Groundwater (µg/L)
0.0	259
0.5	210
1.0	141
1.5	88.1
2.0	54
2.5	32.8
3.0	19.9
3.5	12.1
4.0	7.32
4.5	4.44
5.0	2.7
5.5	1.65

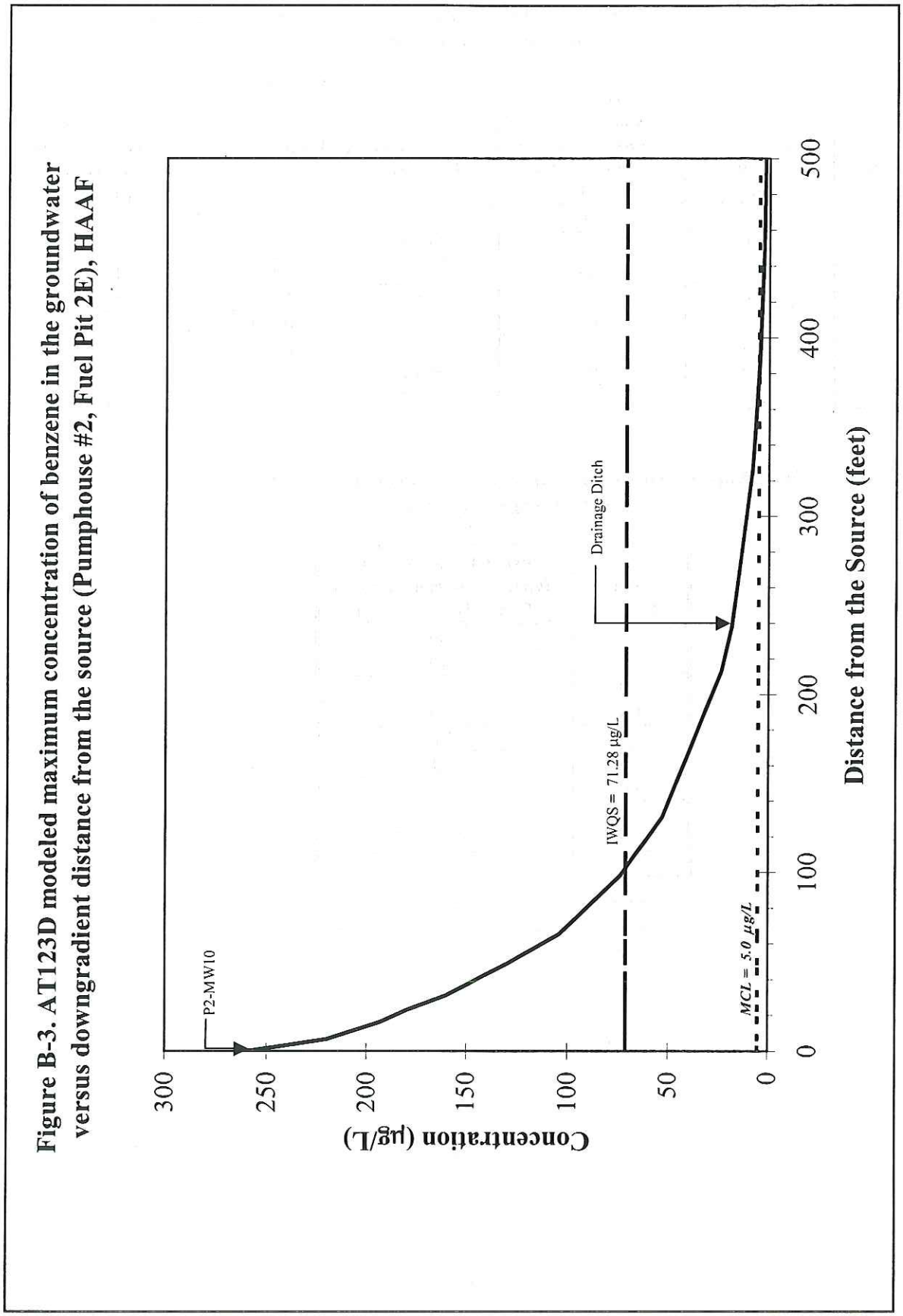


Figure B-3. AT123D modeled maximum concentration of benzene in the groundwater versus downgradient distance from the source (Pumphouse #2, Fuel Pit 2E), HAAF

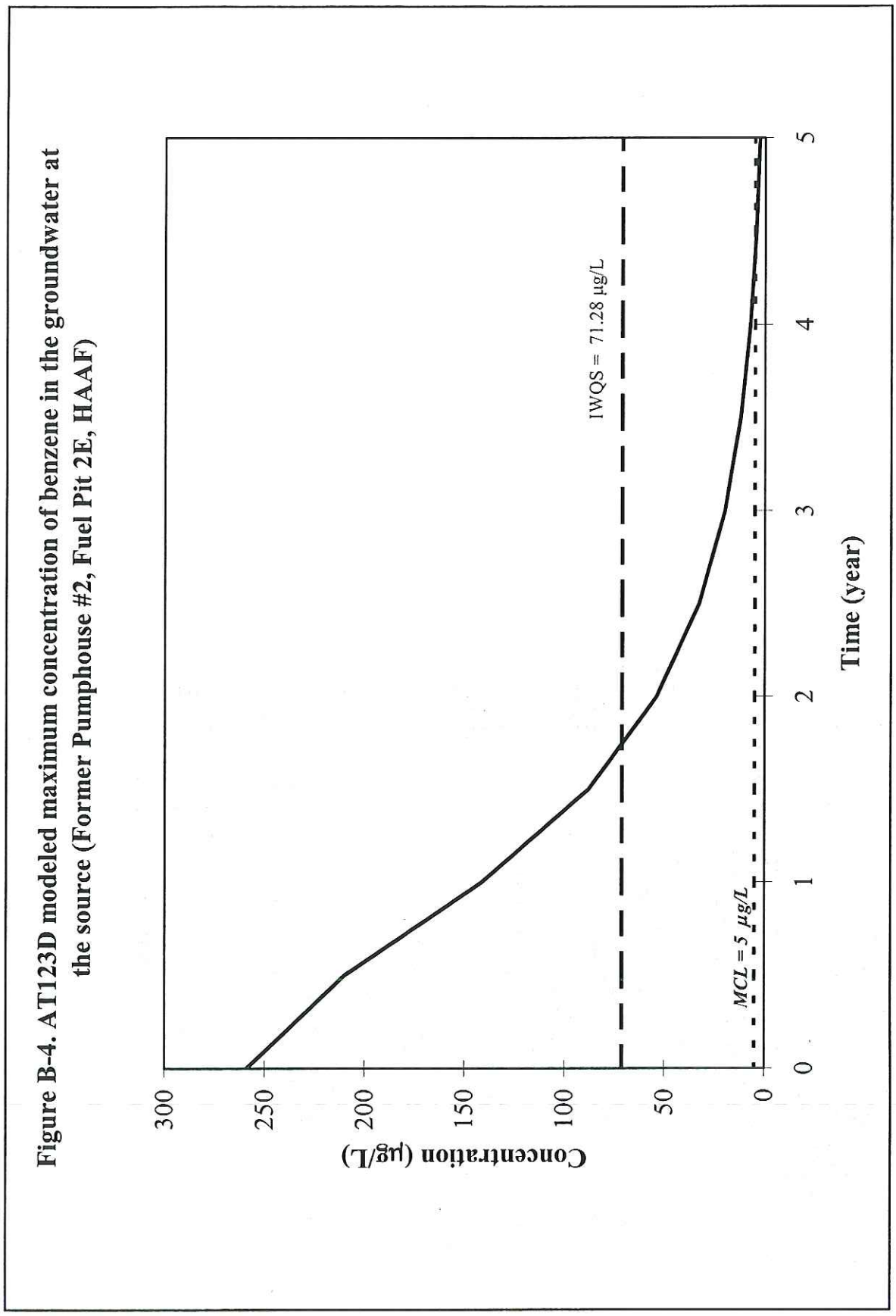


Figure B-4. AT123D modeled maximum concentration of benzene in the groundwater at the source (Former Pumphouse #2, Fuel Pit 2E, HAAF)

HAAF Former Pumphouse 2, Former Fuel Pit 2E, Benzene - CAP B Modeling

NO. OF POINTS IN X-DIRECTION	15
NO. OF POINTS IN Y-DIRECTION	2
NO. OF POINTS IN Z-DIRECTION	1
NO. OF ROOTS: NO. OF SERIES TERMS	400
NO. OF BEGINNING TIME STEP	49
NO. OF ENDING TIME STEP	157
NO. OF TIME INTERVALS FOR PRINTED OUT SOLUTION	6
INSTANTANEOUS SOURCE CONTROL = 0 FOR INSTANT SOURCE	1
SOURCE CONDITION CONTROL = 0 FOR STEADY SOURCE	0
INTERMITTENT OUTPUT CONTROL = 0 NO SUCH OUTPUT	1
CASE CONTROL =1 THERMAL, = 2 FOR CHEMICAL, = 3 RAD	2
AQUIFER DEPTH, = 0.0 FOR INFINITE DEEP (METERS)	0.1220E+02
AQUIFER WIDTH, = 0.0 FOR INFINITE WIDE (METERS)	0.0000E+00
BEGIN POINT OF X-SOURCE LOCATION (METERS)	-0.2134E+02
END POINT OF X-SOURCE LOCATION (METERS)	0.0000E+00
BEGIN POINT OF Y-SOURCE LOCATION (METERS)	-0.6100E+01
END POINT OF Y-SOURCE LOCATION (METERS)	0.6100E+01
BEGIN POINT OF Z-SOURCE LOCATION (METERS)	0.0000E+00
END POINT OF Z-SOURCE LOCATION (METERS)	0.0000E+00
POROSITY	0.1800E+00
HYDRAULIC CONDUCTIVITY (METER/HOUR)	0.4370E+00
HYDRAULIC GRADIENT	0.5000E-02
LONGITUDINAL DISPERSIVITY (METER)	0.5000E+01
LATERAL DISPERSIVITY (METER)	0.1600E+01
VERTICAL DISPERSIVITY (METER)	0.5000E+00
DISTRIBUTION COEFFICIENT, KD (M**3/KG)	0.9500E-03
HEAT EXCHANGE COEFFICIENT (KCAL/HR-M**2-DEGREE C)	0.0000E+00
MOLECULAR DIFFUSION MULTIPLY BY POROSITY (M**2/HR)	0.3530E-05
DECAY CONSTANT (PER HOUR)	0.4000E-04
BULK DENSITY OF THE SOIL (KG/M**3)	0.1540E+04
ACCURACY TOLERANCE FOR REACHING STEADY STATE	0.1000E-02
DENSITY OF WATER (KG/M**3)	0.1000E+04
TIME INTERVAL SIZE FOR THE DESIRED SOLUTION (HR)	0.7300E+03
DISCHARGE TIME (HR)	0.3504E+05
WASTE RELEASE RATE (KCAL/HR), (KG/HR), OR (CI/HR)	0.4957E-04
RETARDATION FACTOR	0.9128E+01
RETARDED DARCY VELOCITY (M/HR)	0.1330E-02
RETARDED LONGITUDINAL DISPERSION COEF. (M**2/HR)	0.6652E-02
RETARDED LATERAL DISPERSION COEFFICIENT (M**2/HR)	0.2130E-02
RETARDED VERTICAL DISPERSION COEFFICIENT (M**2/HR)	0.6671E-03

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.0000E+00 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y	X 0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
-23.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

CONTINUE

Y	X 72.	99.	103.	118.	137.
0.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
-23.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.3504E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y	X 0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.259E+00	0.220E+00	0.164E+00	0.137E+00	0.112E+00	0.751E-01	0.539E-01	0.287E-01	0.151E-01	0.213E-02
-23.	0.179E-02	0.195E-02	0.217E-02	0.229E-02	0.242E-02	0.257E-02	0.254E-02	0.214E-02	0.151E-02	0.307E-03

CONTINUE

Y	X 72.	99.	103.	118.	137.
0.	0.101E-02	0.351E-04	0.197E-04	0.151E-05	0.321E-07
-23.	0.153E-03	0.601E-05	0.341E-05	0.270E-06	0.590E-08

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.3942E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y	X 0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.210E+00	0.206E+00	0.193E+00	0.180E+00	0.160E+00	0.115E+00	0.805E-01	0.398E-01	0.207E-01	0.357E-02
-23.	0.110E-02	0.123E-02	0.141E-02	0.153E-02	0.166E-02	0.189E-02	0.201E-02	0.194E-02	0.156E-02	0.455E-03

CONTINUE

Y	X 72.	99.	103.	118.	137.
0.	0.187E-02	0.107E-03	0.658E-04	0.741E-05	0.279E-06
-23.	0.259E-03	0.175E-04	0.109E-04	0.128E-05	0.501E-07

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.4380E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.141E+00	0.147E+00	0.152E+00	0.152E+00	0.148E+00	0.129E+00	0.104E+00	0.574E-01	0.291E-01	0.540E-02
-23.	0.671E-03	0.757E-03	0.892E-03	0.983E-03	0.110E-02	0.132E-02	0.148E-02	0.161E-02	0.146E-02	0.584E-03

CONTINUE

Y \ X	72.	99.	103.	118.	137.
0.	0.304E-02	0.255E-03	0.167E-03	0.255E-04	0.150E-05
-23.	0.370E-03	0.391E-04	0.262E-04	0.423E-05	0.262E-06

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.4818E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.881E-01	0.954E-01	0.105E+00	0.109E+00	0.113E+00	0.113E+00	0.104E+00	0.716E-01	0.406E-01	0.777E-02
-23.	0.407E-03	0.464E-03	0.557E-03	0.622E-03	0.706E-03	0.892E-03	0.105E-02	0.125E-02	0.126E-02	0.671E-03

CONTINUE

Y \ X	72.	99.	103.	118.	137.
0.	0.456E-02	0.505E-03	0.349E-03	0.676E-04	0.572E-05
-23.	0.466E-03	0.715E-04	0.508E-04	0.107E-04	0.963E-06

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.5256E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.540E-01	0.598E-01	0.681E-01	0.732E-01	0.787E-01	0.866E-01	0.877E-01	0.740E-01	0.499E-01	0.110E-01
-23.	0.247E-03	0.284E-03	0.345E-03	0.390E-03	0.449E-03	0.587E-03	0.715E-03	0.931E-03	0.103E-02	0.702E-03

CONTINUE

Y \ X	72.	99.	103.	118.	137.
0.	0.657E-02	0.878E-03	0.632E-03	0.148E-03	0.168E-04
-23.	0.530E-03	0.112E-03	0.838E-04	0.219E-04	0.271E-05

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.5694E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.328E-01	0.369E-01	0.432E-01	0.473E-01	0.523E-01	0.616E-01	0.670E-01	0.663E-01	0.529E-01	0.152E-01
-23.	0.150E-03	0.174E-03	0.213E-03	0.243E-03	0.283E-03	0.380E-03	0.477E-03	0.666E-03	0.797E-03	0.681E-03

CONTINUE

Y \ X	72.	99.	103.	118.	137.
0.	0.927E-02	0.139E-02	0.104E-02	0.281E-03	0.406E-04
-23.	0.553E-03	0.155E-03	0.121E-03	0.384E-04	0.621E-05

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.6132E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.199E-01	0.226E-01	0.270E-01	0.300E-01	0.338E-01	0.420E-01	0.482E-01	0.541E-01	0.496E-01	0.194E-01
-23.	0.911E-04	0.106E-03	0.132E-03	0.151E-03	0.177E-03	0.244E-03	0.313E-03	0.464E-03	0.594E-03	0.619E-03

CONTINUE

Y \ X	72.	99.	103.	118.	137.
0.	0.125E-01	0.209E-02	0.159E-02	0.480E-03	0.842E-04
-23.	0.538E-03	0.195E-03	0.158E-03	0.590E-04	0.121E-04

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.6570E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.121E-01	0.138E-01	0.167E-01	0.188E-01	0.216E-01	0.278E-01	0.333E-01	0.413E-01	0.425E-01	0.224E-01
-23.	0.555E-04	0.648E-04	0.810E-04	0.933E-04	0.110E-03	0.155E-03	0.203E-03	0.316E-03	0.430E-03	0.534E-03

CONTINUE

Y \ X	72.	99.	103.	118.	137.
0.	0.156E-01	0.302E-02	0.232E-02	0.762E-03	0.155E-03
-23.	0.492E-03	0.224E-03	0.189E-03	0.816E-04	0.204E-04

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7008E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.732E-02	0.845E-02	0.103E-01	0.117E-01	0.136E-01	0.181E-01	0.224E-01	0.301E-01	0.341E-01	0.236E-01
-23.	0.338E-04	0.396E-04	0.498E-04	0.577E-04	0.687E-04	0.981E-04	0.131E-03	0.212E-03	0.304E-03	0.440E-03

CONTINUE

Y \ X	72.	99.	103.	118.	137.
0.	0.178E-01	0.418E-02	0.327E-02	0.115E-02	0.262E-03
-23.	0.429E-03	0.241E-03	0.209E-03	0.103E-03	0.310E-04

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7446E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.444E-02	0.516E-02	0.638E-02	0.729E-02	0.853E-02	0.116E-01	0.148E-01	0.212E-01	0.261E-01	0.229E-01
-23.	0.206E-04	0.243E-04	0.307E-04	0.356E-04	0.427E-04	0.618E-04	0.838E-04	0.141E-03	0.211E-03	0.350E-03

CONTINUE

Y \ X	72.	99.	103.	118.	137.
0.	0.186E-01	0.547E-02	0.437E-02	0.165E-02	0.414E-03
-23.	0.358E-03	0.243E-03	0.217E-03	0.121E-03	0.428E-04

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7884E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.270E-02	0.315E-02	0.393E-02	0.451E-02	0.533E-02	0.742E-02	0.965E-02	0.146E-01	0.192E-01	0.207E-01
-23.	0.126E-04	0.149E-04	0.189E-04	0.220E-04	0.265E-04	0.388E-04	0.533E-04	0.925E-04	0.144E-03	0.270E-03

CONTINUE

Y \ X	72.	99.	103.	118.	137.
0.	0.181E-01	0.669E-02	0.549E-02	0.226E-02	0.622E-03
-23.	0.288E-03	0.232E-03	0.213E-03	0.132E-03	0.546E-04

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8322E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y	X = 0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.165E-02	0.193E-02	0.242E-02	0.279E-02	0.332E-02	0.470E-02	0.623E-02	0.989E-02	0.137E-01	0.177E-01
-23.	0.772E-05	0.912E-05	0.116E-04	0.136E-04	0.164E-04	0.243E-04	0.338E-04	0.603E-04	0.969E-04	0.203E-03

CONTINUE

Y	X = 72.	99.	103.	118.	137.
0.	0.165E-01	0.762E-02	0.645E-02	0.294E-02	0.891E-03
-23.	0.226E-03	0.212E-03	0.199E-03	0.137E-03	0.649E-04

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8760E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y	X = 0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.100E-02	0.118E-02	0.149E-02	0.172E-02	0.206E-02	0.297E-02	0.399E-02	0.660E-02	0.962E-02	0.145E-01
-23.	0.473E-05	0.560E-05	0.715E-05	0.839E-05	0.102E-04	0.152E-04	0.213E-04	0.390E-04	0.647E-04	0.149E-03

CONTINUE

Y	X = 72.	99.	103.	118.	137.
0.	0.143E-01	0.813E-02	0.708E-02	0.360E-02	0.122E-02
-23.	0.172E-03	0.186E-03	0.179E-03	0.135E-03	0.726E-04

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.9198E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y	X = 0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.613E-03	0.722E-03	0.915E-03	0.107E-02	0.128E-02	0.186E-02	0.255E-02	0.435E-02	0.662E-02	0.115E-01
-23.	0.290E-05	0.344E-05	0.441E-05	0.518E-05	0.630E-05	0.950E-05	0.135E-04	0.251E-04	0.428E-04	0.108E-03

CONTINUE

Y	X = 72.	99.	103.	118.	137.
0.	0.118E-01	0.816E-02	0.732E-02	0.415E-02	0.158E-02
-23.	0.128E-03	0.158E-03	0.155E-03	0.128E-03	0.769E-04

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.9636E+05 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.375E-03	0.443E-03	0.563E-03	0.658E-03	0.793E-03	0.117E-02	0.162E-02	0.285E-02	0.449E-02	0.877E-02
-23.	0.178E-05	0.211E-05	0.272E-05	0.320E-05	0.390E-05	0.593E-05	0.846E-05	0.161E-04	0.281E-04	0.768E-04

CONTINUE

Y \ X	72.	99.	103.	118.	137.
0.	0.945E-02	0.778E-02	0.716E-02	0.451E-02	0.194E-02
-23.	0.940E-04	0.130E-03	0.130E-03	0.116E-03	0.779E-04

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1007E+06 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.230E-03	0.272E-03	0.347E-03	0.406E-03	0.491E-03	0.732E-03	0.102E-02	0.185E-02	0.301E-02	0.654E-02
-23.	0.109E-05	0.130E-05	0.167E-05	0.198E-05	0.242E-05	0.369E-05	0.531E-05	0.103E-04	0.184E-04	0.539E-04

CONTINUE

Y \ X	72.	99.	103.	118.	137.
0.	0.734E-02	0.708E-02	0.667E-02	0.464E-02	0.226E-02
-23.	0.677E-04	0.105E-03	0.107E-03	0.102E-03	0.756E-04

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1051E+06 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.141E-03	0.167E-03	0.214E-03	0.251E-03	0.304E-03	0.457E-03	0.645E-03	0.119E-02	0.200E-02	0.478E-02
-23.	0.671E-06	0.800E-06	0.103E-05	0.122E-05	0.150E-05	0.230E-05	0.333E-05	0.657E-05	0.120E-04	0.374E-04

CONTINUE

Y \ X	72.	99.	103.	118.	137.
0.	0.556E-02	0.619E-02	0.596E-02	0.455E-02	0.249E-02
-23.	0.481E-04	0.823E-04	0.850E-04	0.870E-04	0.707E-04

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1095E+06 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.863E-04	0.102E-03	0.132E-03	0.155E-03	0.189E-03	0.285E-03	0.406E-03	0.767E-03	0.132E-02	0.344E-02
-23.	0.413E-06	0.492E-06	0.638E-06	0.754E-06	0.927E-06	0.143E-05	0.209E-05	0.418E-05	0.774E-05	0.257E-04

CONTINUE

Y \ X	72.	99.	103.	118.	137.
0.	0.412E-02	0.523E-02	0.514E-02	0.428E-02	0.262E-02
-23.	0.338E-04	0.633E-04	0.664E-04	0.723E-04	0.640E-04

STEADY STATE SOLUTION HAS NOT BEEN REACHED BEFORE FINAL SIMULATING TIME

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1139E+06 HRS
(ADSORBED CHEMICAL CONC. = 0.9500E+00 * DISSOLVED CHEMICAL CONC.)
Z = 0.00

Y \ X	0.	2.	5.	7.	10.	15.	20.	30.	40.	65.
0.	0.530E-04	0.630E-04	0.811E-04	0.956E-04	0.117E-03	0.178E-03	0.255E-03	0.491E-03	0.865E-03	0.243E-02
-23.	0.254E-06	0.303E-06	0.394E-06	0.466E-06	0.574E-06	0.892E-06	0.131E-05	0.265E-05	0.499E-05	0.175E-04

CONTINUE

Y \ X	72.	99.	103.	118.	137.
0.	0.300E-02	0.428E-02	0.430E-02	0.387E-02	0.263E-02
-23.	0.235E-04	0.479E-04	0.509E-04	0.587E-04	0.563E-04

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ATTACHMENT C

NATURAL ATTENUATION EVALUATION

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C.0 Evaluation of Natural Attenuation at the Former Pumphouse #2 Site

Research into in situ bioremediation indicates that petroleum hydrocarbons observed in groundwater at Former Pumphouse #2, such as benzene, toluene, ethylbenzene, and xylenes (the BTEX compounds), are some of the most aerobically biodegradable found in the subsurface environment. Naturally occurring bioremediation occurs when a sufficient energy source, carbon source, electron acceptor concentration, and nutrient concentration are available to a native biological population. The rate of naturally occurring bioremediation of BTEX compounds is often limited by either the concentration of an appropriate electron acceptor or a nutrient needed during the transformation of the BTEX into a non-toxic compound. Typical electron acceptors utilized by microorganisms, in order of preference, are oxygen, nitrate, iron (III), sulfate, and carbon dioxide. This order is often termed the electron acceptor hierarchy.

In November 1999, M&E collected groundwater samples from seven wells (P2-MW04, P2-MW05, PW-MW06, PW-MW28, PW-MW30, PW-MW31, and PW-MW32) at the Former Pumphouse #2 site to determine if natural attenuation of hydrocarbons was occurring. Groundwater samples were analyzed for BTEX and natural attenuation parameter analyses. The natural attenuation parameters included oxygen reduction potential (ORP, also referred to as redox potential), total organic carbon (TOC), sulfate, nitrate, ferrous iron, methane/ethane/ethene, alkalinity, dissolved oxygen (DO), temperature, and pH. Their importance in assessing the potential for naturally occurring biodegradation of hydrocarbon compounds is discussed in Table C-1.

The seven groundwater samples were collected from within four "zones" across the hydrocarbon plume at the Former Pumphouse #2 site. Zone "A," located near the suspected hydrocarbon source (near P2-MW27), was an area where anaerobic biologic processes were anticipated as a result of depleted oxygen. Zone "B" was an area further from the source where anaerobic or perhaps hypoxic activity might be confirmed by evidence of reduced oxidation-reduction (redox) potential, reduced DO, and increased ferrous iron, etc. Zone "C" was located near the fringe of the plume in an area where increasing dissolved oxygen, increasing sulfate, and other geochemical indications of an aerobic fringe surrounding the anaerobic zone would be anticipated. Zone "D" was located outside the area of hydrocarbon impact; thereby representing background conditions. An illustration of the geochemical evaluation area is provided in Figure C-1.

C.1 Dissolved Oxygen Indicators of Natural Attenuation

Sufficient DO concentrations are present in the groundwater to support aerobic biodegradation. It is noteworthy that DO measurements were made during well purging activities where groundwater aeration was likely. Although depleted in some areas, particularly P2-MW06 and P2-MW32 (see Figure C-2), concentrations of DO are well above the 1.0 to 2.0 mg/L threshold commonly accepted as favorable for aerobic hydrocarbon degradation. Background DO levels (upgradient of the contaminant source) exceed levels in affected areas. The natural flow of groundwater will, therefore, supply DO to the contaminated area where aerobic degradation is probable. Well P2-MW04 contained no hydrocarbon contaminants in May 1997 and only trace concentrations (14 µg/L) in November 1999. This well and P2-MW31 (located cross-gradient and to the west of P2-MW06) are considered representative of background conditions.

Where aerobic biodegradation is occurring, an inverse relationship between DO concentration and constituent concentrations can be expected (i.e., DO levels increase as constituent levels decrease). This relationship is observed near the fringe of the contaminated area at Former Pumphouse #2 (P2-MW04, P2-MW30, and P2-MW31). The decreased DO levels downgradient of the source area in the downgradient reaches (P2-MW32) of the benzene plume suggest that anaerobic biodegradation processes may be at work in these areas.

C.2 Geotechnical Indicators of Natural Attenuation

Certain geochemical characteristics can also serve as indicators that natural attenuation, particularly aerobic biodegradation, is occurring. Aerobic biodegradation of petroleum products produces carbon dioxide and organic acids, both of which tend to cause a region of lower pH and increased alkalinity within the constituent plume. The highest concentrations of carbon dioxide in groundwater (Figure C-3) are found on the perimeter of the contaminant plume. Carbon dioxide is somewhat elevated near the contaminant source (near P2-WM05) with respect to background but not directly downgradient of the source at P2-MW06. Alkalinity (Figure C-4) is elevated at P2-MW05 further supporting the likelihood of aerobic biodegradation in this area. No significant trend was observed in pH measurements over the area.

C.3 Anaerobic Indicators of Natural Attenuation

Recent research has recognized the importance of anaerobic degradation of aromatic hydrocarbons. Research has shown degradation of aromatic hydrocarbons using nitrate, iron (III), and sulfate as electron acceptors (Baker 1994). For the BTEX compounds in particular, research has shown toluene, ethylbenzene, and some of the xylenes to degrade anaerobically, with toluene being the most anaerobically degradable. Anaerobic degradation of ethylbenzene and xylene appear to be most significant when they are co-metabolized with toluene. Evidence of anaerobic degradation of benzene, though, has been inconclusive. Iron (III) is preferentially used over sulfate (Chapelle and Lovley 1992) but research indicates that iron (III) utilization is inhibited by the presence of oxygen and nitrate.

Iron (III) reduction is evident by reduced benzene concentrations and increased levels of aqueous phase iron (II) at P2-MW06 and downgradient well P2-MW29 (see Figure C-5). Concentrations of DO (Figure C-2) are also reduced with respect to background in these areas, further suggesting that anaerobic degradation may be ongoing. Methanogenic contaminant reduction (i.e., using carbon dioxide as an electron acceptor to form methane gas) may also be occurring near the source area as indicated in Figure C-6. This anaerobic process proceeds at significantly slower rates than the other degradation processes (Vogel and Grbic-Galic 1986). The oxidation/reduction (redox) potential in groundwater (Figure C-7) indicates conditions are less favorable for anaerobic degradation near P2-MW29 as compared with upgradient locations (P2-MW05). The redox potential of groundwater is a measure of electron activity and is an indicator of the relative tendency of a solution to accept or transfer electrons. The redox potential of groundwater generally ranges from 800 mV to about -400 mV. The lower the redox potential, the more reducing and anaerobic the environment.

Anaerobic biodegradation rates for aromatic hydrocarbons are typically an order of magnitude or more less than aerobic rates. However, anaerobic biodegradation may still significantly influence substrate reduction due to longer reaction times (Wilson et al. 1986; Hutchins 1991). These longer reaction rates can be attributed to the inefficiency of anaerobes relative to aerobes (Zehnder and Stumm 1988) and the inhibitory effects of alternate electron acceptors present in the subsurface, especially oxygen (Hutchins 1991; Chang et al. 1993).

C.4 Chemical Indicators of Natural Attenuation

The trend of BTEX compounds over time often provides direct evidence demonstrating the effectiveness of natural attenuation of hydrocarbons in groundwater. Figure C-8 is an illustration of May 1997 and November 1999 benzene concentrations from Former Pumphouse #2 site wells. The figure suggests that concentrations near both the core of the plume and the plume fringe remain stable. No significant reduction of contaminant mass is evident over the 2.5 year sampling period. This is most likely due to the constant supply of hydrocarbons to the groundwater from free product in proximity to P2-MW27. Contaminant mass reduction by natural attenuation will be negligible where a SPH source is present.

C.5 Natural Attenuation Evaluation Summary

Ranges of geochemical, chemical, and physical parameters monitoring during preliminary screening for aerobic and anaerobic biodegradation processes suggest conditions are favorable for natural attenuation of aromatic hydrocarbons. Available groundwater data suggest that the Former Pumphouse #2 site exhibits primarily anaerobic behavior with respect to hydrocarbon biodegradation. Soluble iron (iron II) concentrations in the groundwater tend to increase immediately downgradient of the source area as the DO is depleted and conditions change to become anaerobic (i.e., reduced). The concentration of methane increased sharply in P2-MW05 (Figure C-6), another indication that anaerobic biodegradation is occurring. Iron (II) concentrations are most elevated in low DO areas indicating that iron (III) is being used as a primary electron acceptor. The increased DO observed near P2-MW04 and P2-MW31 is likely a result of natural recharge of oxygenated water to the shallow aquifer. Increased DO inhibits the iron (III) reduction process and may limit further reduction in dissolved hydrocarbon concentration in upgradient reaches of the benzene plume.

Elevated concentrations of ferrous iron and methane and decreased dissolved BTEX concentrations near the hydrocarbon source are indications that anaerobic biodegradation processes may be ongoing. However, the carbon dioxide concentrations near P2-MW05 are more indicative of aerobic conditions. A number of scenarios may be responsible for the distribution of natural attenuation indicators and contaminants at the Former Pumphouse #2 site. The continued presence of free product in P2-MW27 and nearby piezometers will limit the effectiveness of natural biologic processes in reducing hydrocarbon mass in groundwater. Benzene concentrations in groundwater have remained essentially unchanged over the May 1997 through November 1999 period (30 months) as illustrated in Figure C-8. The natural attenuation evaluation suggests that hydrocarbon contaminant levels in groundwater could be expected to decrease following the removal of the free product source. Anaerobic reduction processes are likely to be the dominant form of biodegradation taking place at the Former Pumphouse #2 site based on data collected during the CAP-Part B investigation.

C.6 References

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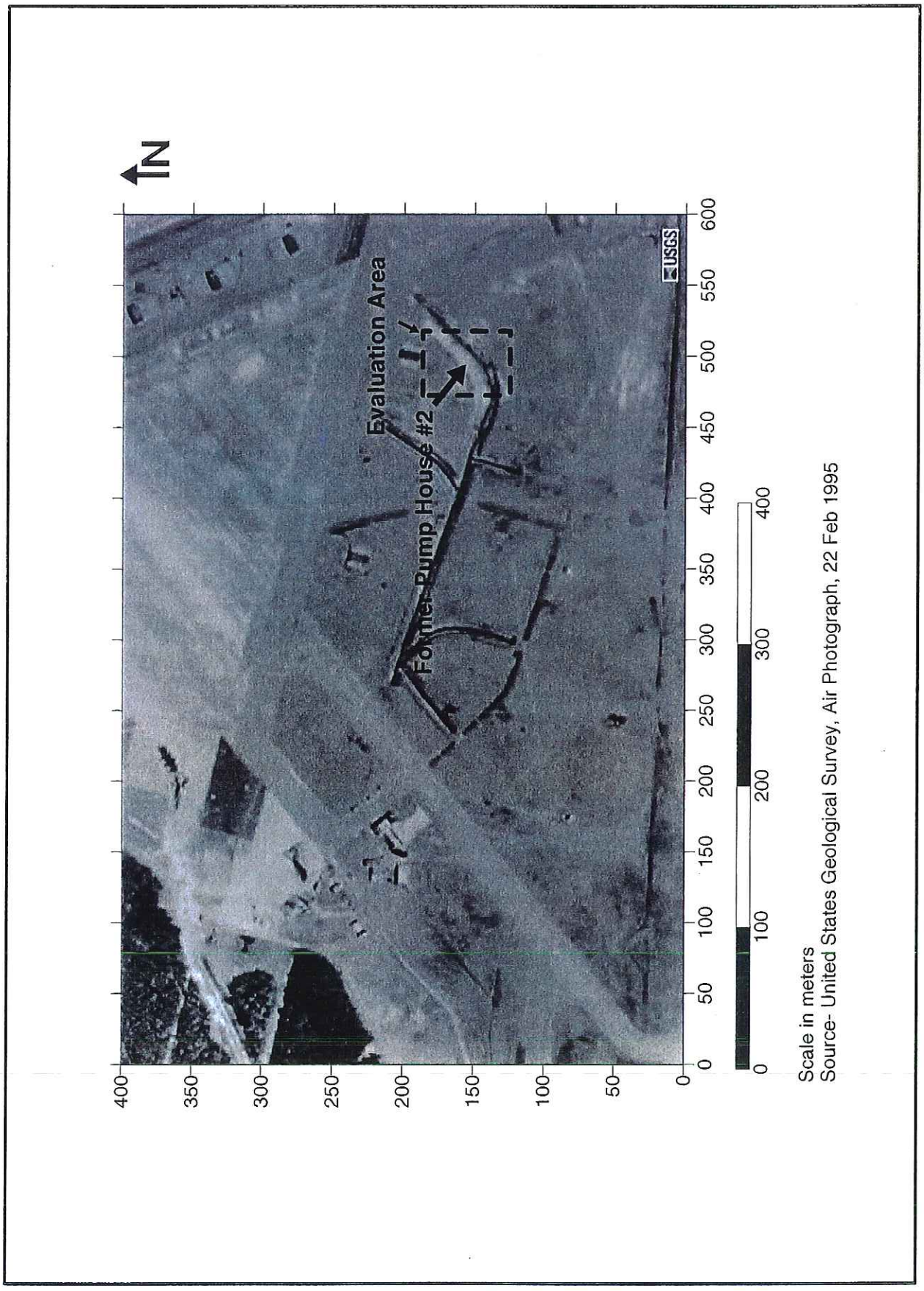
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Table C.1. Geochemical and Physical Indicators of Natural Biodegradation

Parameter	Description
Alkalinity	Provides an indication of the buffering capacity of the water and the amount of carbon dioxide dissolved in the water. Increases due to biodegradation of organic compounds.
pH	Microbial activity tend to be reduced outside of a pH range of 5 to 9, and many anaerobic bacteria are particularly sensitive to pH extremes.
Temperature	Affects rates of microbial metabolism. Slower biodegradation occurs at lower temperatures.
Dissolved Oxygen	Highest energy-yielding electron acceptor for biodegradation of organic constituents. Aerobic conditions typically exist at <1.0 to 2.0 mg/L.
ORP/Redox Potential	A measure of the oxidation-reduction potential of the environment. Ranges from +500 millivolts (mV) for aerobic conditions to -300 mV for methanogenic conditions.
Sulfate	Used as an electron acceptor in the biodegradation of organic constituents reduced to form sulfide.
Methane	Indicator of anaerobic conditions and methanogenic bacteria. Produced by the microbial reduction of carbon dioxide. Solubility limit 25 to 40 ppm.
Ethane/Ethene	Metabolic end product of reductive dehalogenation of halogenated ethenes and ethanes.
Total Organic Carbon	A measure of the total concentration of organic material in water that may be available for biological degradation.
Nitrate	Used as an electron acceptor. Consumed next after oxygen.
Iron (total, dissolved)	A product of bacterial iron reduction. Only the reduced form (ferrous) is soluble. The oxidized for (ferric) is used as an electron receptor.



C-1. Geochemical Evaluation Area

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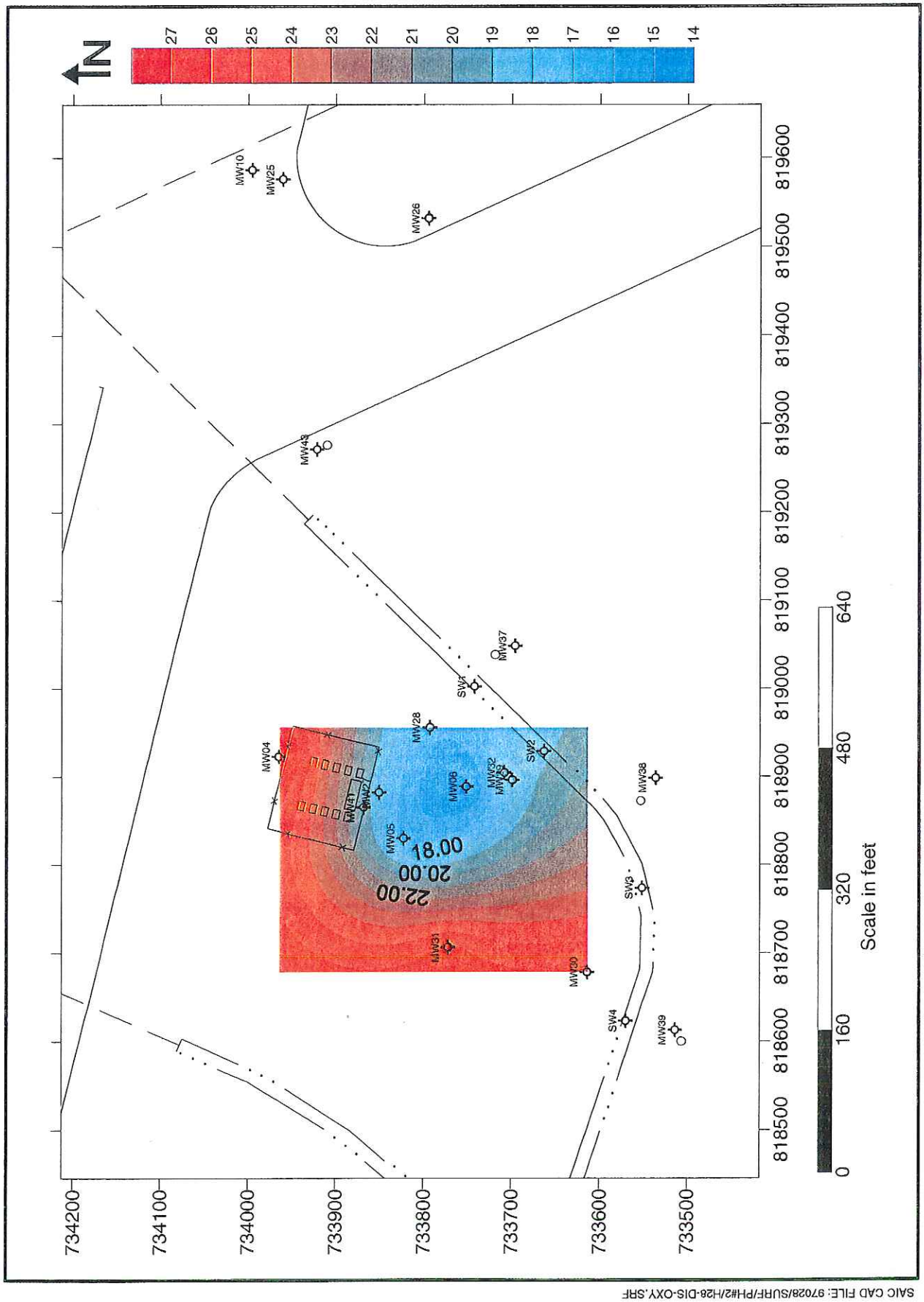


Figure C-2. Dissolved Oxygen in Groundwater (mg/L)

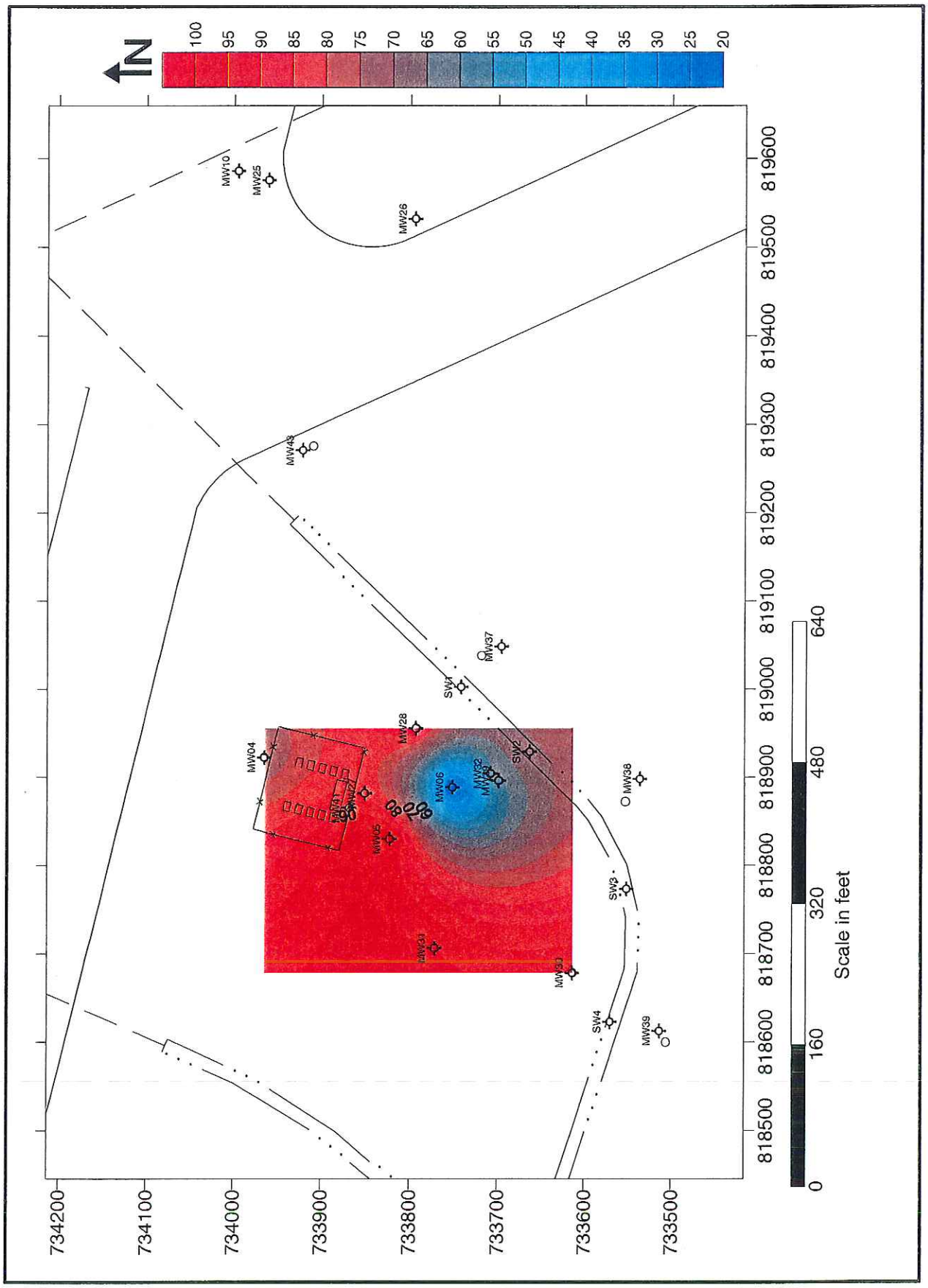


Figure C-3. Carbon Dioxide in Groundwater (mg/L)

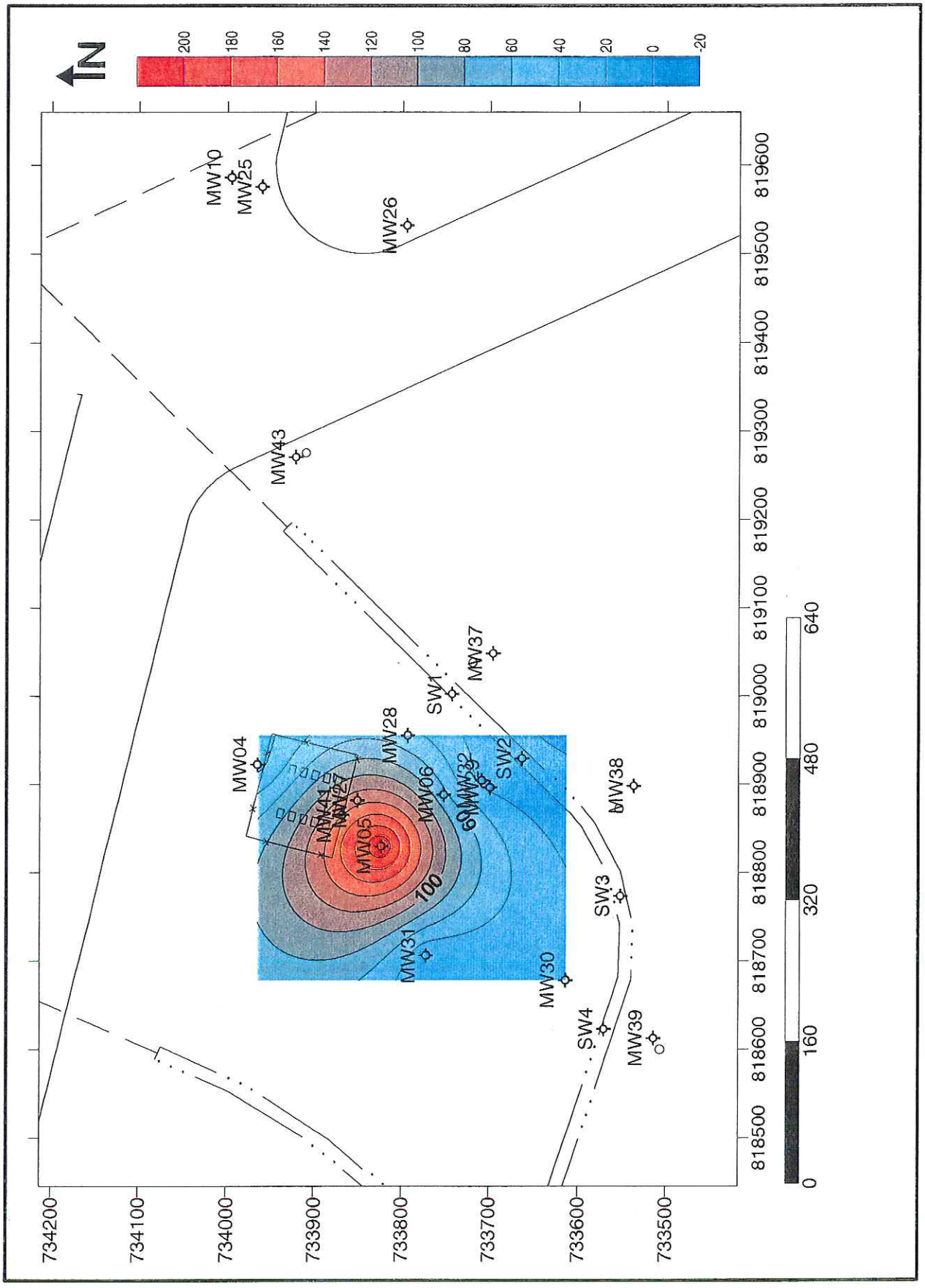
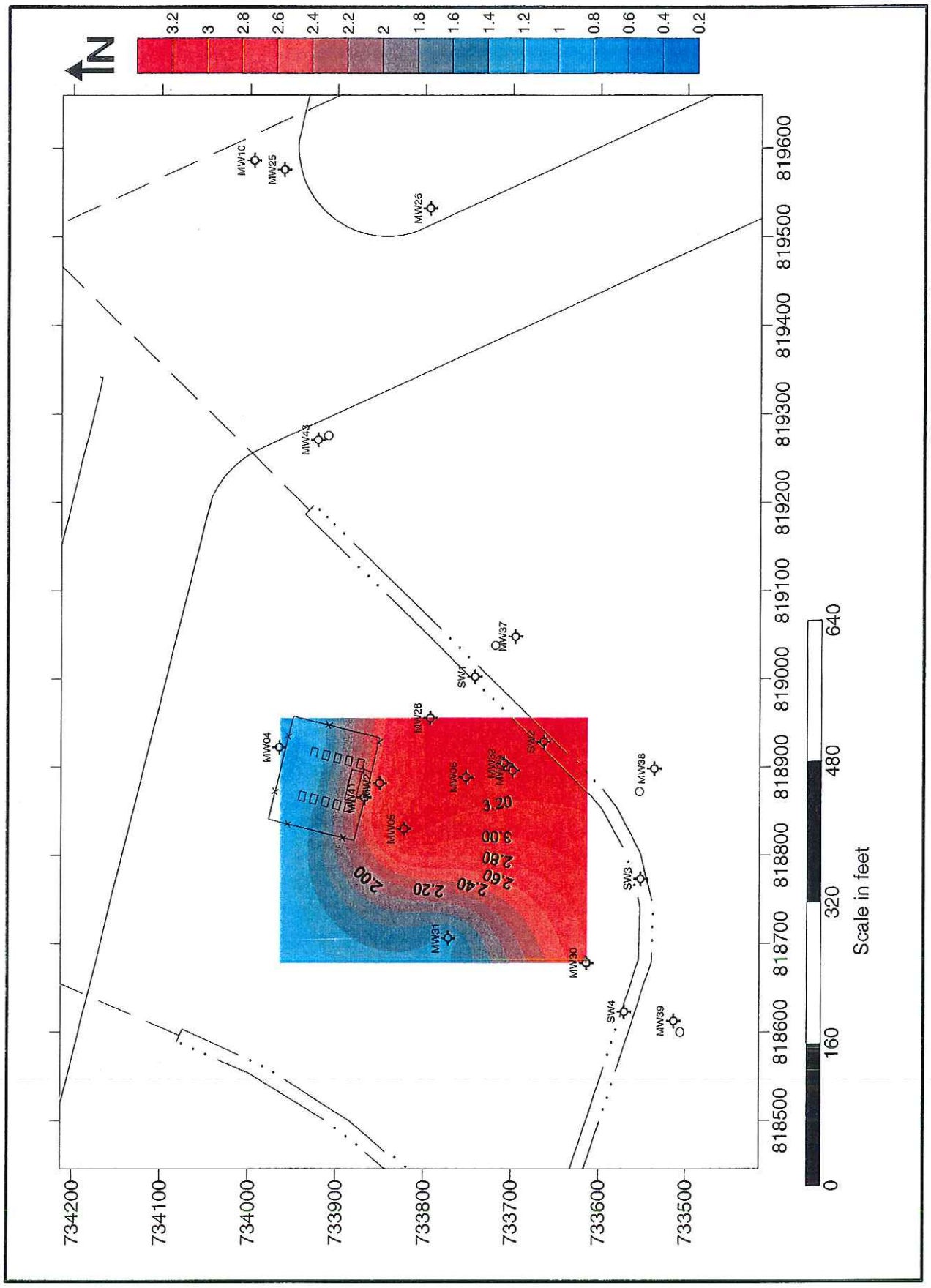


Figure C-4. Alkalinity in Groundwater (mg/L)



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Figure C-5. Ferrous Iron in Groundwater (mg/L)

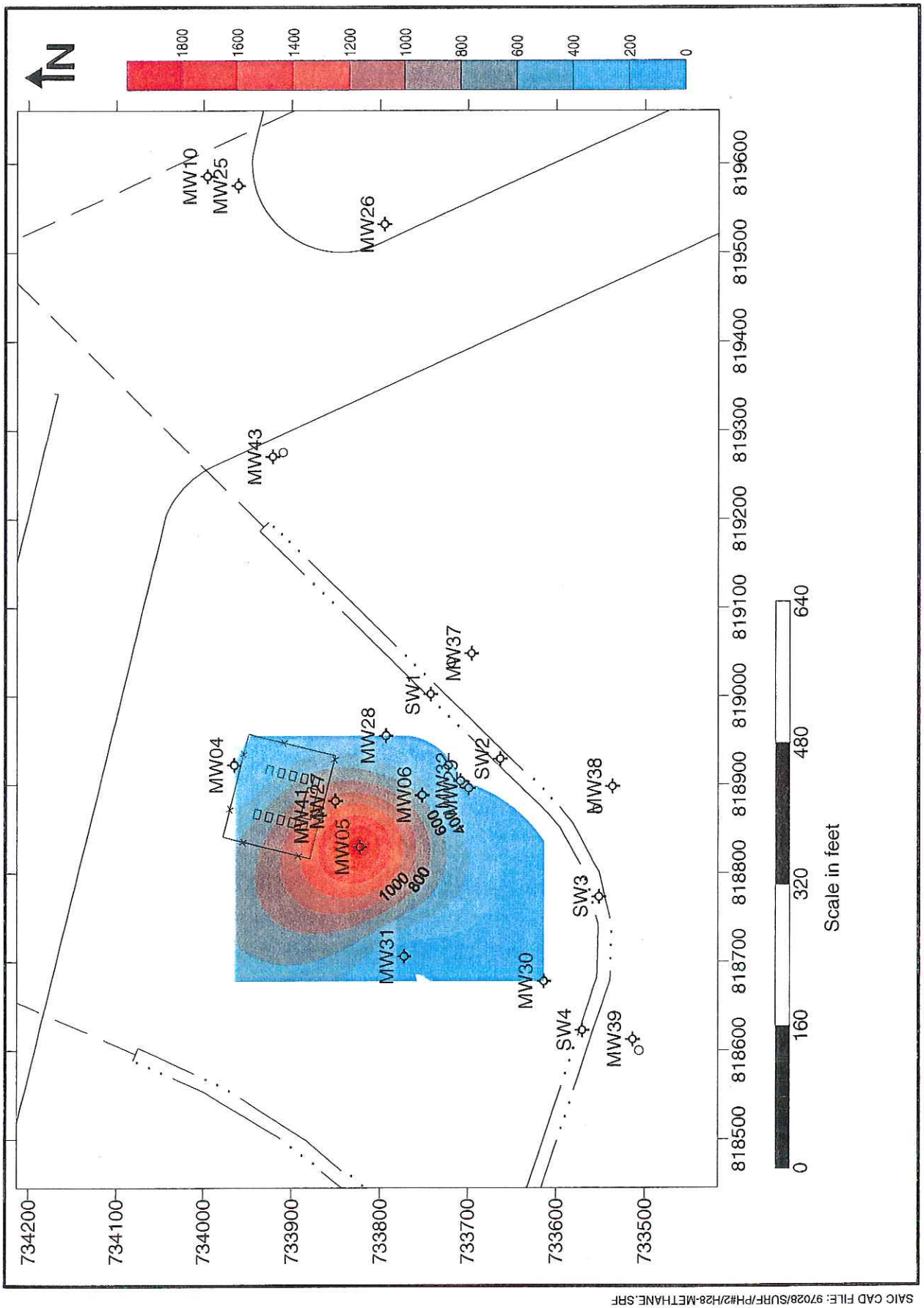


Figure C-6. Methane in Groundwater (mg/L)

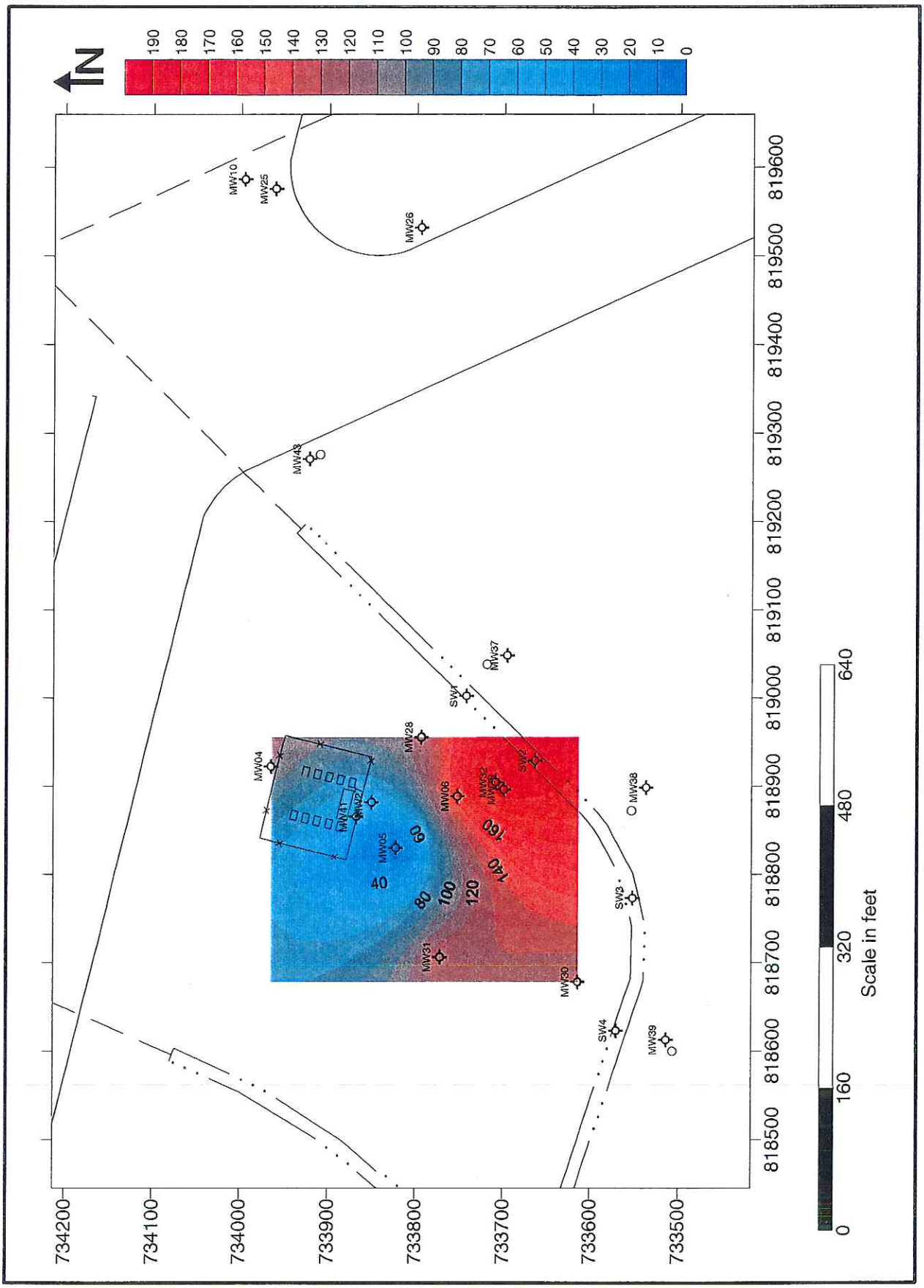


Figure C-7. REDOX Potential in Groundwater (mV)

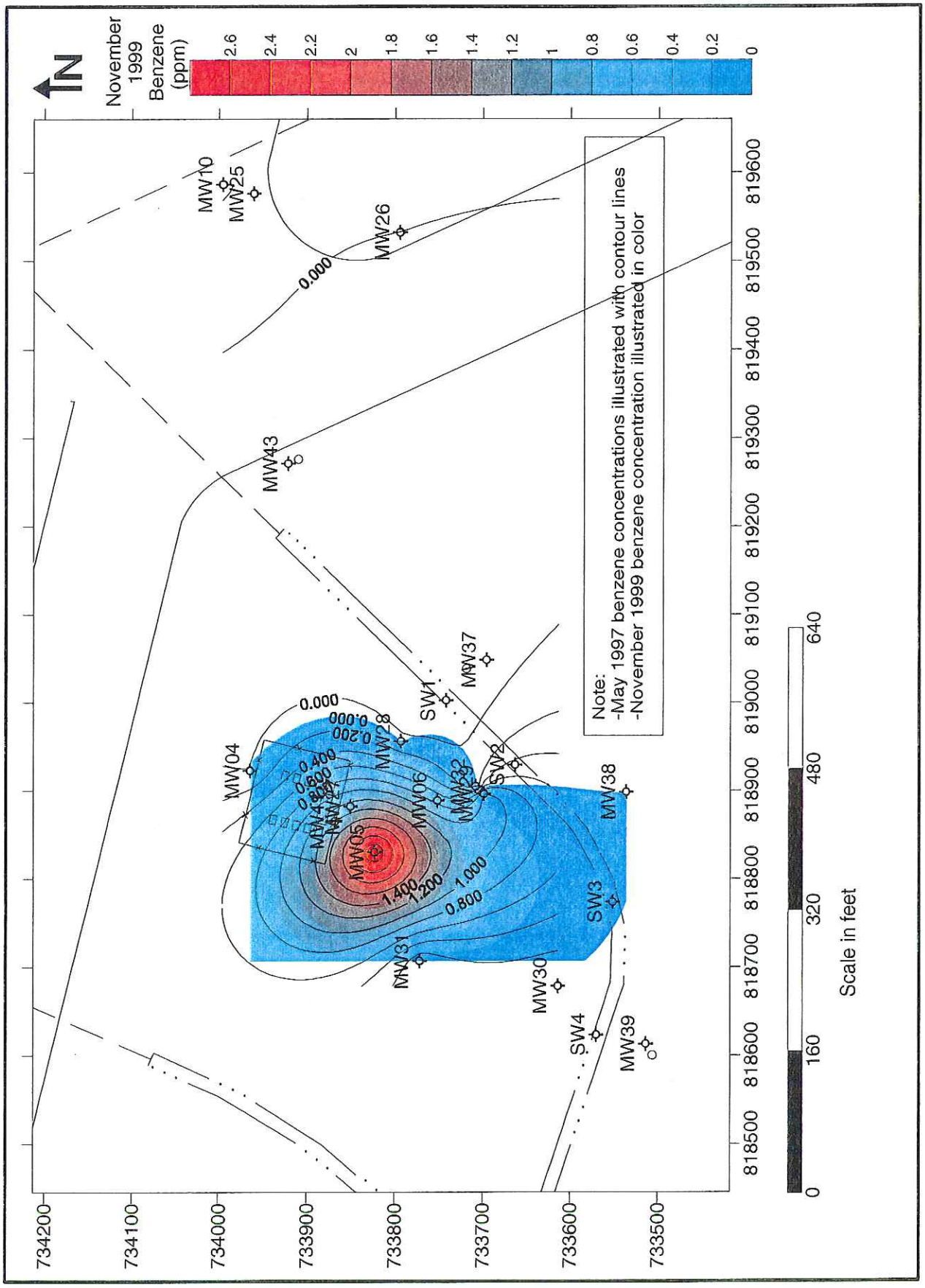


Figure C-8. Benzene in Groundwater Over Time