FINAL

FORSCOM

SECOND ANNUAL PROGRESS REPORT

3d Inf Div (Mech)

Former Building 728
Facility ID #9-025049
Hunter Army Airfield, Georgia

Prepared for

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT

Contract No. DACA21-95-D-0022
Delivery Order 0041

August 2001

SAIC®

DOCUMENT 9

FINAL

SECOND ANNUAL PILOT STUDY PROGRESS REPORT
FOR
FORMER BUILDING 728
FACILITY ID #9-025049
HUNTER ARMY AIRFIELD, GEORGIA

Prepared for
U.S. Army Corps of Engineers
Savannah District
Under Contract Number DACA21-95-D-0022
Delivery Order 0041

Prepared by
SCIENCE APPLICATIONS INTERNATIONAL CORPORATION
P.O. Box 2502
Oak Ridge, TN 37831

August 2001

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LIST OF ACRONYMS

ACL	alternate concentration limit
AMSL	above mean sea level
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CAP	Corrective Action Plan
DO	dissolved oxygen
GA EPD	Georgia Environmental Protection Division
GUST	Georgia Underground Storage Tank
HAAF	Hunter Army Airfield
IWQS	In-Stream Water Quality Standard
MCL	maximum contaminant level
Redox	oxygen-reduction potential
STL	soil threshold level
TPH	total petroleum hydrocarbons
UIC	Underground Injection Control

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PROGRESS REPORT

Submittal Date: August 2001 Monitoring Report Number: 2nd Annual

For Period Covering: July 2000 to June 2001

Facility Name: Former Building 728 Street Address: Douglas Street and Duncan Drive

Facility ID: 9-025049 City: Hunter Army Airfield County: Chatham Zip Code: 31409

Latitude: 32° 01′ 50″ Longitude: 81° 08′ 04″

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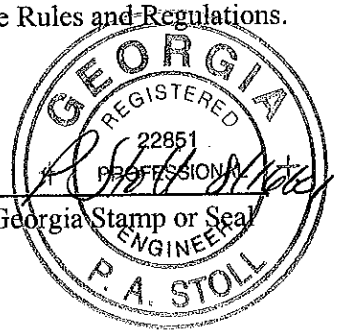
REGISTERED PROFESSIONAL ENGINEER OR PROFESSIONAL GEOLOGIST CERTIFICATION

I hereby certify that I have directed and supervised the fieldwork and preparation of this plan, in accordance with State Rules and Regulations. As a registered professional geologist and/or professional engineer, I certify that I am a qualified groundwater professional, as defined by the Georgia State Board of Professional Geologists. All of the information and laboratory data in this plan and in all of the attachments are true, accurate, complete, and in accordance with applicable State Rules and Regulations.

Name: Patricia A. Stoll

Signature: Patricia A Stoll

Date: 8/16/01



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1.0 INTRODUCTION

The Former Building 728 site is located at the southeast corner of Douglas Street and Duncan Drive within the confines of Hunter Army Airfield (HAAF), as illustrated in Figure 1. The Former Building 728 site is located within an average or higher groundwater pollution susceptibility area, is fewer than 500 feet from a withdrawal point, and is fewer 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 A, Column 1 of GUST Rules 291-5-15 because a withdrawal point is located fewer than 500 feet from the site and Table B, Column 1 of GUST Rules 391-5-15 because a surface water body is located fewer than 500 feet from the site. Thus, the Corrective Action Plan (CAP)–Part B Report (Metcalf & Eddy 1997) used the most conservative value for each compound as the applicable STL. The closest surface water body is a man-made, open-channel drainage ditch that is fed by an underground storm drain; therefore, the Georgia In-Stream Water Quality Standards (IWQSs) were used as screening criteria for groundwater.

The horizontal extent of the soil and groundwater contamination was determined during the CAP–Part B investigation. As part of the CAP–Part B Report, a corrective action was proposed to address the free product, soil contamination, and groundwater contamination. The corrective action consisted of a combination of free product removal, air sparging, and soil vapor extraction. The CAP–Part B Report was approved by the Georgia Environmental Protection Division (GA EPD) in correspondence dated September 4, 1998 (Coughlan 1998). Quarterly monitoring was initiated at the site in May 1998.

During a site visit by GA EPD on September 15, 1998, Fort Stewart proposed implementation of a pilot study consisting of oxygen injection across the entire groundwater plume to enhance the microbial biodegradation. During the oxygen injection, free product removal would continue in the product recovery wells. The CAP–Part B Addendum #1 and First Annual Pilot Study Progress Report was submitted to GA EPD in August 2000 (SAIC 2000). The report documented the changes to the corrective action proposed in the CAP–Part B Report and summarized the results of the remediation pilot study associated with the corrective action at the Northern Fuel Battery portion of the Former Building 728 site.

During the first year of the pilot study at the Northern Fuel Battery portion of the Former Building 728 site, the benzene concentrations and the plume area decreased. As a result, the oxygen injection and enhanced product recovery systems were retained as the corrective action at the site. Since the submittal of the CAP–Part B Addendum #1 and First Annual Pilot Study Progress Report in August 2000, site sampling has continued on a bimonthly basis. This Second Annual Progress Report documents the results of the corrective action from July 2000 to June 2001.

2.0 PRE-PILOT STUDY ACTIVITIES

The pre-pilot study activities in May 1999 consisted of installing five observation points, 24 injection points, and 24 product delineation points and conducting a vadose zone pilot test and baseline sampling for soil and groundwater conditions. The specifics regarding these activities were summarized in the CAP–Part B Addendum #1 and First Annual Pilot Study Progress Report (SAIC 2000) that was submitted to GA EPD in August 2000. The well construction details are summarized in Table 1.

During the baseline soil sampling in May 1999, one soil sample was collected from each of the five observation points and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) and total

petroleum hydrocarbons (TPH), and one soil sample was collected from each of the 24 product delineation points; however, only ten samples were analyzed for BTEX and TPH, while eight samples were analyzed for TPH only. The samples from the product delineation points that were submitted to the analytical laboratory were from the borings in the vicinity of MW8 and the free product plume identified during the CAP–Part B investigation. The baseline analytical results for soil are presented in Table 2.

During the baseline groundwater sampling in May 1999, 15 locations were sampled for BTEX. The original monitoring locations for determining the effectiveness of the pilot study were MW6, MW11, MW60, MW61, MW63, MW64, P1, P2, P3, P4, P5, D1, D3, D4, and D21. The baseline groundwater sampling that was preformed in May 1999 indicated that the area of groundwater contamination covered approximately 22,700 ft^2. Benzene was detected in all 15 samples at concentrations ranging from 2.1J µg/L to 2,600 µg/L. Thirteen of the concentrations exceeded the IWQS of 71.28 µg/L and the benzene alternate concentration limit (ACL) of 78 µg/L. The concentrations of toluene, ethylbenzene, and total xylenes did not exceed the IWQS of 200,000 µg/L; the IWQS of 28,718 µg/L; or the maximum contaminant level (MCL) of 10,000 µg/L, respectively. The baseline analytical results for groundwater are presented in Table 3 and Figure 3.

In May 1999, the groundwater flow direction was toward the northwest, and the groundwater average gradient was approximately 0.0105 foot/foot. Free product exceeding 1/8 inch (i.e., 0.01 foot) was observed in seven product delineation points (i.e., D7, D8, D10, D11, D12, D16, and D17). The area of free product was located north of MW59, extended toward MW8 and MW62, and covered an area of approximately 1,850 ft^2.

3.0 REMEDIAL ACTIVITIES

3.1 INITIAL FREE PRODUCT REMOVAL

From May 1999 through February 2000, the initial free product removal activities consisted of Ferret™ product recovery systems in wells MW59, MW62, MW8A, PR-1, PR-2, PR-3, PR-4, or PR-5. The details regarding the free product removal were described in the CAP–Part B Addendum #1 and First Annual Pilot Study Progress Report (SAIC 2000). The use of the Ferret™ product recovery systems was continued through August 2000, when it was determined that there was no longer any recoverable free product in recovery wells MW59, MW62, MW8A, PR-1, PR-2, PR-3, PR-4, and PR-5.

3.2 ENHANCED PRODUCT RECOVERY SYSTEM

In February 2000, an enhanced product recovery system that consisted of vacuum extraction in the product recovery wells (MW8A, MW59, PR-1 PR-2, PR-3, PR-4, and PR-5) and air injection into injection wells (A-1 through A-6 and B-1 through B-6) was implemented at the site. The six injection wells on the A manifold are generally located through the central axis of the delineated free product area. The injection wells on the B manifold are generally located on the hydraulically upgradient side of the delineated free product area. The extraction and air injection wells are configured in a manner that induces a pressure gradient in the subsurface toward the existing recovery wells to enhance the migration of the product toward those wells. The details regarding the enhanced product recovery system were described in the CAP–Part B Addendum #1 and First Annual Pilot Study Progress Report (SAIC 2000).

Due to the lack of recoverable free product in the existing product recovery wells and the fact that the area of product appeared to be located in the middle of the product recovery wells, two additional product recovery wells (PR-6 and PR-7) were installed in April 2001 to assist in recovering product. However, after the installation and development, no measurable free product was identified, and product recovery systems have not been installed in these wells. The vacuum extraction and air injection continue to assist in reducing the soil contaminant level.

3.3 OXYGEN INJECTION SYSTEM

The groundwater treatment system consists of an oxygen injection system that injects 98 percent pure oxygen into the groundwater via multiple injection points at low flow rates. The injection of pure oxygen into groundwater using oxygen generators is a patented remediation process developed by Matrix Environmental, Inc. The remediation system consists of an AirSep AS80 pressure-swing adsorption oxygen generator that produces oxygen at a rate of 80 standard cubic feet per hour. The oxygen is stored in a 120-gallon receiver tank and pulse-sparged to up to 12 injection points at approximately 30 standard cubic feet per minute per point. The details regarding the oxygen injection system were described in the CAP–Part B Addendum #1 and First Annual Pilot Study Progress Report (SAIC 2000).

3.4 SYSTEM MONITORING AND SAMPLING

The oxygen injection system described above was operational on May 19, 1999, with oxygen being injected into two rows of injectors. One row was located downgradient of the free product plume and consisted of injectors J9 through J13. The other row was located upgradient of the free product plume and consisted of injectors J14 through and J20. The injectors operating at any one time have changed periodically as plume conditions have changed. Three additional injector locations were installed in December 2000. Prior to injecting in these new locations, Science Applications International Corporation requested that the original Underground Injection Control (UIC) Permit #104 be amended to include the new injector locations. The oxygen was injected in accordance with the revised UIC Permit #104 for the Former Building 728 site. A copy of the UIC permit is provided in Appendix VII.

The results of the first year of monitoring (i.e., June 1999 through May 2000) are briefly summarized in the following sections, with additional details provided in the CAP–Part B Addendum #1 and First Annual Pilot Study Progress Report (SAIC 2000). A more detailed discussion on the results of the second year of monitoring (i.e., July 2000 through May 2001) follows the discussion of the results of the first year.

3.4.1 First Sampling Event – June 1999

The oxygen injection system had been in operation for 1 month when the first sampling event was conducted with oxygen being injected into two rows of injectors (J9 through J13 and J14 through J20). The monitoring locations to determine the effectiveness of the pilot study were MW6, MW11, MW60, MW61, MW63, MW64, P1, P2, P3, P4, P5, D1, D3, D4, and D21.

The groundwater sampling performed in June 1999 indicated that the area of groundwater contamination covered approximately 18,600 ft^2. Benzene was detected in all 15 samples at concentrations ranging 3J µg/L to 3,370 µg/L. Ten of the concentrations exceeded the IWQS of 71.28 µg/L and the benzene ACL of 78 µg/L. The concentrations of toluene, ethylbenzene, and total xylenes did not exceed the IWQS of 200,000 µg/L; the IWQS of 28,718 µg/L; or the MCL of 10,000 µg/L, respectively. The analytical results for groundwater are presented in Table 3.

In June 1999, the groundwater flow direction was toward the northwest, the groundwater gradient was approximately 0.0103 foot/foot, and the average groundwater elevation was 12.56 feet above mean sea level (AMSL). A list of the wells and corresponding water level depths and product depths is presented in Table 4. Free product exceeding 1/8 inch (i.e., >0.01 foot) was observed in five product delineation points (i.e., D6, D7, D10, D11, and D16). The area of free product was located north of MW59, extended toward MW8 and MW62, and covered an area of approximately 1,800 ft^2. Free product recovery in June 1999 consisted of Ferret™ product recovery systems in MW8A, MW59, and PR-2.

3.4.2 Second Sampling Event – July 1999

The oxygen injection system had been in operation for 2 months when the second sampling event was conducted with oxygen being injected into two rows of injectors (J9 through J13 and J14 through J20). The monitoring locations to determine the effectiveness of the pilot study were MW6, MW11, MW60, MW61, MW63, MW64, P1, P2, P3, P4, P5, D1, D3, D4, and D21.

The groundwater sampling performed in July 1999 indicated that the area of groundwater contamination covered approximately 17,050 ft^2. Benzene was detected in 13 of 15 samples at concentrations ranging 0.82J µg/L to 3,430 µg/L. Nine of the concentrations exceeded the IWQS of 71.28 µg/L and the benzene ACL of 78 µg/L. The concentrations of toluene, ethylbenzene, and total xylenes did not exceed the IWQS of 200,000 µg/L; the IWQS of 28,718 µg/L; or the MCL of 10,000 µg/L, respectively. The analytical results for groundwater are presented in Table 3.

In July 1999, the groundwater flow direction was toward the northwest, the groundwater gradient was approximately 0.0142 foot/foot, and the average groundwater elevation was 14.19 feet AMSL. Prior to the July 1999 sampling event, a 100-year rain event occurred during the first week of July. A list of the wells and corresponding water level depths and product depths is presented in Table 4. Free product exceeding 1/8 inch (i.e., >0.01 foot) was observed in seven product delineation points (i.e., D6, D8, D10, D11, D15, D16, and D17). The area of free product was located near MW59, extended toward MW8 and MW62, and was separated into two areas of approximately 2,375 ft^2 and 500 ft^2. Free product recovery in July 1999 consisted of Ferret™ product recovery systems in MW8A, MW59, and PR-2.

3.4.3 Third Sampling Event – August 1999

The oxygen injection system had been in operation for 3 months when the third sampling event was conducted with oxygen being injected into two rows of injectors (J9 through J13 and J14 through J20). The monitoring locations to determine the effectiveness of the pilot study were MW6, MW11, MW60, MW61, MW63, MW64, P1, P2, P3, P4, P5, D1, D3, D4, and D21.

The groundwater sampling performed in August 1999 indicated that the area of groundwater contamination covered approximately 18,000 ft^2. Benzene was detected in 12 of 15 samples at concentrations ranging 13.7 µg/L to 3,460 µg/L. Eight of the concentrations exceeded the IWQS of 71.28 µg/L and the benzene ACL of 78 µg/L. The concentrations of toluene, ethylbenzene, and total xylenes did not exceed the IWQS of 200,000 µg/L; the IWQS of 28,718 µg/L; or the MCL of 10,000 µg/L, respectively. The analytical results for groundwater are presented in Table 3.

In August 1999, the groundwater flow direction was toward the northwest, the groundwater gradient was approximately 0.0111 foot/foot, and the average groundwater elevation was 12.97 feet AMSL. A list of the wells and corresponding water level depths and product depths is presented in Table 4. Free product exceeding 1/8 inch (i.e., >0.01 foot) was observed in five product delineation points (i.e., D6, D9, D10, D11, D16). The area of free product was located near MW59, extended toward MW8, and covered an

area of approximately 1,950 ft^2. Free product recovery in August 1999 consisted of Ferret™ product recovery systems in MW8A, MW59, and PR-2.

3.4.4 Fourth Sampling Event – September 1999

The oxygen injection system had been in operation for 4 months when the fourth sampling event was conducted. The location of the oxygen injectors in operation was modified after the August 1999 sampling event to three rows of injectors (J2 through J4, J5 through J8, and J9 through J13). The monitoring locations to determine the effectiveness of the pilot study were MW6, MW11, MW60, MW61, MW63, MW64, P1, P2, P3, P4, P5, D1, D3, D4, and D21.

The groundwater sampling performed in September 1999 indicated that the area of groundwater contamination covered approximately 14,875 ft^2. Benzene was detected in 12 of 15 samples at concentrations ranging 2.4 µg/L to 3,710 µg/L. Seven of the concentrations exceeded the IWQS of 71.28 µg/L and the benzene ACL of 78 µg/L. The concentrations of toluene, ethylbenzene, and total xylenes did not exceed the IWQS of 200,000 µg/L; the IWQS of 28,718 µg/L; or the MCL of 10,000 µg/L, respectively. The analytical results for groundwater are presented in Table 3.

In September 1999, the groundwater flow direction was toward the northwest, the groundwater gradient was approximately 0.0103 foot/foot, and the average groundwater elevation was 13.93 feet AMSL. A list of the wells and corresponding water level depths and product depths is presented in Table 4. Free product exceeding 1/8 inch (i.e., >0.01 foot) was observed in six product delineation points (i.e., D6, D7, D10, D11, D16, and D17). The area of free product was located near MW59, extended toward MW8, and covered an area of approximately 2,225 ft^2. Free product recovery in September 1999 consisted of Ferret™ product recovery systems in MW8A, MW59, and PR-2.

3.4.5 Fifth Sampling Event – October 1999

The oxygen injection system had been in operation for 5 months when the fifth sampling event was conducted. The location of the oxygen injectors in operation was modified to three rows of injectors (J2 through J4, J5 through J8, and J9 through J13) in August 1999. The monitoring locations to determine the effectiveness of the pilot study were MW6, MW11, MW60, MW61, MW63, MW64, P1, P2, P3, P4, P5, D1, D3, D4, and D21.

The groundwater sampling that was performed in October 1999 indicated that the area of groundwater contamination covered approximately 15,475 ft^2. Benzene was detected in 14 of 15 samples at concentrations ranging 0.78J µg/L to 3,760 µg/L. Six of the concentrations exceeded the IWQS of 71.28 µg/L and the benzene ACL of 78 µg/L. The concentrations of toluene, ethylbenzene, and total xylenes did not exceed the IWQS of 200,000 µg/L; the IWQS of 28,718 µg/L; or the MCL of 10,000 µg/L, respectively. The analytical results for groundwater are presented in Table 3.

In October 1999, the groundwater flow direction was toward the northwest, the groundwater gradient was approximately 0.0125 foot/foot, and the average groundwater elevation was 13.27 feet AMSL. A list of the wells and corresponding water level depths and product depths is presented in Table 4. Free product exceeding 1/8 inch (i.e., >0.01 foot) was observed in eight product delineation points (i.e., D6, D7, D8, D10, D11, D15, D16, and D17). The area of free product was located near MW59, extended toward MW8 and MW62, and covered an area of approximately 2,850 ft^2. Free product recovery in October 1999 consisted of Ferret™ product recovery systems in MW8A, MW59, and PR-2. Prior to the fifth sampling event, three additional free product recovery wells (PR-3, PR-4, and PR-5) were installed at the site in October 1999 and equipped with Ferret™ product recovery systems.

3.4.6 Sixth Sampling Event – November/December 1999

The oxygen injection system had been in operation for 7 months when the sixth sampling event was conducted. The location of the oxygen injectors in operation was changed back to the original two rows of injectors (J9 through J13 and J14 through J20) in October 1999. The monitoring locations to determine the effectiveness of the pilot study were MW6, MW11, MW60, MW61, MW63, MW64, P1, P2, P3, P4, P5, D1, D3, D4, and D21.

The groundwater sampling performed in November/December 1999 indicated that the area of groundwater contamination covered approximately 8,575 ft^2. Benzene was detected in 15 of 15 samples at concentrations ranging 1J µg/L to 3,700 µg/L. Seven of the concentrations exceeded the IWQS of 71.28 µg/L and the benzene ACL of 78 µg/L. The concentrations of toluene, ethylbenzene, and total xylenes did not exceed the IWQS of 200,000 µg/L; the IWQS of 28,718 µg/L; or the MCL of 10,000 µg/L, respectively. The analytical results for groundwater are presented in Table 3.

In December 1999, the groundwater flow direction was toward the northwest, the groundwater gradient was approximately 0.0106 foot/foot, and the average groundwater elevation was 12.18 feet AMSL. A list of the wells and corresponding water level depths and product depths is presented in Table 4. Free product exceeding 1/8 inch (i.e., >0.01 foot) was observed in seven product delineation points (i.e., D6, D9, D10, D11, D15, D16, and D17). The area of free product had separated into two areas. The largest area was located near MW59, extended toward MW8, and covered an area of approximately 1,500 ft^2. The smaller area covered an area of approximately 340 ft^2. Free product recovery in December 1999 consisted of Ferret™ product recovery systems in MW8A, MW59, PR-2, PR-3, PR-4, and PR-5.

3.4.7 Seventh Sampling Event – January 2000

The oxygen injection system had been in operation for 8 months when the seventh sampling event was conducted. The location of the oxygen injectors in operation was changed back to the original two rows of injectors (J9 through J13 and J14 through J20) in October 1999. The monitoring locations to determine the effectiveness of the pilot study were MW6, MW11, MW60, MW61, MW63, MW64, P1, P2, P3, P4, P5, D1, D3, D4, and D21.

The groundwater sampling that was performed in January 2000 indicated that the area of groundwater contamination covered approximately 10,650 ft^2. Benzene was detected in 15 of 15 samples at concentrations ranging 0.2J µg/L to 2,210J µg/L. Seven of the concentrations exceeded the IWQS of 71.28 µg/L and the benzene ACL of 78 µg/L. The concentrations of toluene, ethylbenzene, and total xylenes did not exceed the IWQS of 200,000 µg/L; the IWQS of 28,718 µg/L; or the MCL of 10,000 µg/L, respectively. The analytical results for groundwater are presented in Table 3.

In January 2000, the groundwater flow direction was toward the northwest, the groundwater gradient was approximately 0.0111 foot/foot, and the average groundwater elevation was 12.38 feet AMSL. A list of the wells and corresponding water level depths and product depths is presented in Table 4. Free product exceeding 1/8 inch (i.e., >0.01 foot) was observed in six product delineation points (i.e., D6, D8, D10, D11, D16, and D17). The area of free product has separated into two areas. The largest area was located near MW59, extended toward MW8, and covered an area of approximately 1,770 ft^2. The second smaller area covered an area of approximately 100 ft^2 and was located near MW62. Free product recovery in January 2000 consisted of Ferret™ product recovery systems in MW8A, MW59, PR-2, PR-3, PR-4, and PR-5.

In February 2000, an enhanced product recovery system consisting of air injection with vacuum extraction to induce a pressure gradient in the subsurface to enhance the migration of the product toward the recovery wells was brought on line at the site.

3.4.8 Eighth Sampling Event – March 2000

The oxygen injection system had been in operation for 10 months when the eighth sampling event was conducted. The location of the oxygen injectors in operation was modified in January 2000. The row of oxygen injectors (J9 through J13) downgradient of the free product remained in operation. The oxygen injection locations (J2 through J4, J7, and J18 through J20) were spread throughout the long, thin plume running parallel to the storm drain. Monitoring locations MW64, P5, and D21 were dropped from the monitoring program in lieu of D6, D10, and D17. The monitoring locations to determine the effectiveness of the pilot study were MW6, MW11, MW60, MW61, MW63, P1, P2, P3, P4, D1, D3, D4, D6, D10, and D17.

The groundwater sampling performed in March 2000 indicated that the area of groundwater contamination had separated into two plumes. One was long and thin and ran parallel to the storm drain, while the other was in the vicinity of the free product. The areas of contamination were approximately 6,450 ft^2 and 3,000 ft^2. Benzene was detected in 12 of 15 samples at concentrations ranging 2.4 µg/L to 1,820 µg/L. Nine of the concentrations exceeded the IWQS of 71.28 µg/L and the benzene ACL of 78 µg/L. The concentrations of toluene, ethylbenzene, and total xylenes did not exceed the IWQS of 200,000 µg/L; the IWQS of 28,718 µg/L; or the MCL of 10,000 µg/L, respectively. The analytical results for groundwater are presented in Table 3.

In March 2000, the groundwater flow direction was toward the north and northwest, the groundwater gradient was approximately 0.0227 foot/foot, and the average groundwater elevation was 13.05 feet AMSL. A list of the wells and corresponding water level depths and product depths is presented in Table 4. Free product exceeding 1/8 inch (i.e., >0.01 foot) was observed in four product delineation points (i.e., D6, D10, D11, and D24). The area of free product had separated into two areas. The largest area was located near MW59, extended toward MW8, and covered an area of approximately 580 ft^2. The second, smaller area covered an area of approximately 213 ft^2 and was located near D24. Free product recovery in March 2000 consisted of Ferret™ product recovery systems in MW8A, MW59, PR-2, PR-3, PR-4, and PR-5 in conjunction with the enhanced product removal system implemented in February 2000.

3.4.9 Ninth Sampling Event – May 2000

The oxygen injection system had been in operation for 12 months (i.e., 1 year) when the ninth sampling event was conducted. The location of the oxygen injectors in operation (J2 through J4, J7, J9 through J13, and J18 through J20) was last modified in January 2000. The monitoring locations to determine the effectiveness of the pilot study were MW6, MW11, MW60, MW61, MW63, P1, P2, P3, P4, D1, D3, D4, D6, D10, and D17.

The groundwater sampling performed in May 2000 indicated that the area of groundwater contamination continued to be separated into two plumes. One was long and thin and ran parallel to the storm drain, while the other was in the vicinity of the free product. The areas of contamination were approximately 6,550 ft^2 and 2,665 ft^2. Benzene was detected in 13 of 15 samples at concentrations ranging 2.3 µg/L to 2,010J µg/L. Eight of the concentrations exceeded the IWQS of 71.28 µg/L and the benzene ACL of 78 µg/L. The concentrations of toluene, ethylbenzene, and total xylenes did not exceed the IWQS of 200,000 µg/L; the IWQS of 28,718 µg/L; or the MCL of 10,000 µg/L, respectively. The analytical results for groundwater are presented in Table 3.

In May 2000, the groundwater flow direction was toward the northwest, the groundwater gradient was approximately 0.0095 foot/foot, and the average groundwater elevation was 12.54 feet AMSL. A list of the wells and corresponding water level depths and product depths is presented in Table 4. Free product exceeding 1/8 inch (i.e., >0.01 foot) was observed in two product delineation points (i.e., D10 and D18). The area of free product had separated into two areas. One area was located near MW59, extended toward MW8, and covered an area of approximately 188 ft^2. The second area covered an area of approximately 271 ft^2 and was located near D18. Free product recovery in May 2000 consisted of Ferret™ product recovery systems in MW8A, MW59, PR-2, PR-3, PR-4, and PR-5 in conjunction with the enhanced product removal system implemented in February 2000.

3.4.10 Tenth Sampling Event – July 2000

The oxygen injection system had been in operation for 14 months (i.e., 1.2 years) when the tenth sampling event was conducted. The location of the oxygen injectors in operation was last modified in January 2000 as shown in Figure 4. The row of oxygen injectors (J9, J10, J11, J12, and J13) downgradient of the free product remained in operation. The oxygen injection locations (J2, J3, J4, J7, J18, J19, and J20) were spread throughout the long, thin plume running parallel to the storm drain. The monitoring locations to determine the effectiveness of the pilot study were MW6, MW11, MW60, MW61, MW63, P1, P2, P3, P4, D1, D3, D4, D6, D10, and D17.

Fifteen monitoring locations were sampled for BTEX on July 19, 2000. Analytical results for groundwater sampling are summarized in Table 3 and presented in Figure 4. The laboratory results of the July 2000 sampling event are provided in Appendix V and summarized below.

- Benzene was detected in 14 of 15 samples at concentrations ranging from 1.6 µg/L to 912 µg/L. Six of the concentrations exceeded the IWQS of 71.28 µg/L and the benzene ACL of 78 µg/L.

- Toluene was detected in 13 of 15 samples at concentrations ranging from 0.43J µg/L to 3,930 µg/L. None of the concentrations exceeded the toluene IWQS of 200,000 µg/L.

- Ethylbenzene was detected in 13 of 15 samples at concentrations ranging from 1.1 µg/L to 565 µg/L. None of the concentrations exceeded the ethylbenzene IWQS of 28,718 µg/L.

- Total xylenes were detected in 15 of 15 samples at concentrations ranging from 1.6J µg/L to 8,490 µg/L. A Georgia IWQS for xylenes does not exist, and none of the concentrations exceeded the MCL of 10,000 µg/L.

As shown in Figure 4, the area of groundwater contamination continued to be separated into two plumes. One was long and thin and ran parallel to the storm drain, while the other was in the vicinity of the free product. The areas of contamination were approximately 5,250 ft^2 and 2,550 ft^2, as indicated in Table 5. Of the 15 wells sampled in July 2000, six wells exceeded the IWQS for benzene, as compared to nine during the previous sampling event. Within the long, thin plume, there was one well (i.e., MW61) at which the benzene concentration exceeded 500 µg/L. This area of highest benzene contamination was located north of MW8. The concentration of benzene in MW11, located at the leading edge of the plume, was below the IWQS. Within the area of free product plume, the highest benzene concentration was 335 µg/L in D10. The concentrations of benzene in MW60 and D1, which are located downgradient of the free product, were below the IWQS.

Groundwater elevations were measured in the monitoring wells on July 19, 2000, to determine the groundwater flow direction. A list of the wells and corresponding water level elevations is presented in

Table 4. The potentiometric surface map generated from the water level measurements is presented in Figure 5. In July 2000, the groundwater flow direction was toward the northwest, the groundwater gradient was approximately 0.013 foot/foot, and the average groundwater elevation was 12.03 feet AMSL.

Depth to free product and free product thickness are presented in Table 4. In July 2000, free product exceeding 1/8 inch (i.e., >0.01 foot) was observed in two product delineation points (i.e., D10 and D11). As shown in Figure 4, there was only one area of free product. The area was located near PR-2, extended toward PR-4, and covered an area of approximately 679 ft^2. On July 23, 2000, the Ferret™ product recovery systems were removed from MW8A, MW59, PR-2, PR-3, PR-4, and PR-5, and the enhanced product removal system was shut down. On July 25, 2000, wells PR-2 and MW59 contained 0.01 foot and 0.08 foot, respectively, of free product. None of the other product recovery wells contained any measurable free product. Well MW59 was the only well to have a Ferret™ product recovery system reinstalled. The enhanced product removal system was operational again on July 25, 2000. Neither the oxygen injection locations nor the monitoring locations were changed for the next sampling event in September 2000.

3.4.11 Eleventh Sampling Event – September 2000

The oxygen injection system had been in operation for 16 months (i.e., 1.3 years) when the eleventh sampling event was conducted. The location of the oxygen injectors in operation was last modified in January 2000, as shown in Figure 6. The row of oxygen injectors (J9, J10, J11, J12, and J13) downgradient of the free product remained in operation. The oxygen injection locations (J2, J3, J4, J7, J18, J19, and J20) were spread throughout the long, thin plume running parallel to the storm drain. The monitoring locations to determine the effectiveness of the pilot study were MW6, MW11, MW60, MW61, MW63, P1, P2, P3, P4, D1, D3, D4, D6, D10, and D17.

Fifteen monitoring locations were sampled for BTEX on September 26, 2000. Analytical results for groundwater sampling are summarized in Table 3 and presented in Figure 6. The laboratory results of the September 2000 sampling event are provided in Appendix V and summarized below.

- Benzene was detected in 15 of 15 samples (including an elevated detection limit of 2,500 µg/L in D10) at concentrations ranging from 0.3J µg/L to <2,500 µg/L. Five of the concentrations exceeded the IWQS of 71.28 µg/L and the benzene ACL of 78 µg/L.

- Toluene was detected in five of 15 samples at concentrations ranging from 13.2 µg/L to 99,900 µg/L. None of the concentrations exceeded the toluene IWQS of 200,000 µg/L.

- Ethylbenzene was detected in 14 of 15 samples at concentrations ranging from 0.4J µg/L to 60,000 µg/L. The concentration in D10 exceeded the ethylbenzene IWQS of 28,718 µg/L.

- Total xylenes were detected in 15 of 15 samples at concentrations ranging from 0.15J µg/L to 617,000 µg/L. A Georgia IWQS for xylenes does not exist. The concentration in D10 exceeded the MCL of 10,000 µg/L.

As shown in Figure 6, the area of groundwater contamination continued to be separated into two plumes. One was long and thin and located downgradient of the free product area, while the other was in the vicinity of the free product. The areas of contamination were approximately 6,750 ft^2 and 2,350 ft^2, as indicated in Table 5. Of the 15 wells sampled in September 2000, five wells exceeded the IWQS for benzene, as compared to six during the previous sampling event. The long, thin plume was located on the

downgradient edge of the site and extended from P2 to P1. The benzene concentrations in this plume area were below the IWQS. The plume in the area of the free product was roughly circular and extended from D19 north to MW61 and from D4 southwest to PR-3. Within this plume area, there were four wells (i.e., D3, D4, D6, and D10) at which the benzene concentrations exceeded 500 µg/L. The concentrations of benzene in MW60, P4, and D1, which are located downgradient of the free product, were below the IWQS.

Groundwater elevations were measured in the monitoring wells on September 25, 2000, to determine the groundwater flow direction. A list of the wells and corresponding water level elevations is presented in Table 4. The potentiometric surface map generated from the water level measurements is presented in Figure 7. In September 2000, the groundwater flow direction was toward the northwest, the groundwater gradient was approximately 0.011 foot/foot, and the average groundwater elevation was 13.91 feet AMSL.

Depth to free product and free product thickness are presented in Table 4. In September 2000, free product exceeding 1/8 inch (i.e., >0.01 foot) was observed in three product delineation points (i.e., D10, D11, and D17). As shown in Figure 6, there was only one area of free product that was located between product recovery wells MW59, PR-2, PR-3, and PR-4. This area covered approximately 669 ft^2. The Ferret™ product recovery system in MW59 was shut off on August 22, 2000, because there was not any significant product recovery. On November 2, 2000, the Ferret™ system was removed from MW59, and there was no measurable free product observed in MW8A, MW59, PR-2, PR-3, PR-4, and PR-5. As of November, no Ferret™ product recovery systems were installed in any of the recovery wells at the site; however, the enhanced product recovery system continued to operate during this time period.

In August 2000, the Matrix system had power problems, and the circuit breakers were tripped. The system was off for approximately 1 to 2 weeks. Representatives from the compressor manufacturer indicated that the system had a "ronk add-a-phase" problem, and as a result, the three-phase converter was rebalanced in October 2000. In addition, the air injection portion of the enhanced recovery system seized up and needed to be replaced. The vacuum extraction portion of the system continued to operate uninterrupted.

Due to the changing plume boundaries, sample locations MW6, MW11, P3, and D1 were removed from the monitoring plan following the September 2000 sampling event. Locations D7, D9, D12, D14, and D19 were added to provide additional monitoring coverage of the plume in the vicinity of the free product area. The oxygen injection locations were not changed for the next sampling event in November/December 2000.

3.4.12 Twelfth Sampling Event – November/December 2000

The oxygen injection system had been in operation for 18 months (i.e., 1.5 years) when the twelfth sampling event was conducted. The location of the oxygen injectors in operation was last modified in January 2000 as shown in Figure 8. The row of oxygen injectors (J9, J10, J11, J12, and J13) downgradient of the free product remained in operation. The oxygen injection locations (J2, J3, J4, J7, J18, J19, and J20) were spread throughout the long, thin plume running parallel to the storm drain. The monitoring locations to determine the effectiveness of the pilot study were MW60, MW61, MW63, P1, P2, P4, D3, D4, D6, D7, D9, D10, D12, D14, D17, and D19.

Sixteen monitoring locations were sampled for BTEX on December 1, 2000. Analytical results for groundwater sampling are summarized in Table 3 and presented in Figure 8. The laboratory results of the November/December 2000 sampling event are provided in Appendix V and summarized below.

- Benzene was detected in 16 of 16 samples at concentrations ranging from 0.56J µg/L to 1,140 µg/L. Seven of the concentrations exceeded the IWQS of 71.28 µg/L and the benzene ACL of 78 µg/L.

- Toluene was detected in 10 of 16 samples at concentrations ranging from 0.70J µg/L to 985 µg/L. None of the concentrations exceeded the toluene IWQS of 200,000 µg/L.

- Ethylbenzene was detected in 15 of 16 samples at concentrations ranging from 0.18J µg/L to 870 µg/L. None of the concentrations exceeded the ethylbenzene IWQS of 28,718 µg/L.

- Total xylenes were detected in 16 of 16 samples at concentrations ranging from 0.38J µg/L to 7,570 µg/L. A Georgia IWQS for xylenes does not exist, and none of the concentrations exceeded the MCL of 10,000 µg/L.

The thin plume running parallel to the storm drain has dissipated to concentrations less than 10 µg/L. As shown in Figure 8, the plume in the vicinity of the free product area was roughly circular in shape and extended from D19 north to MW61 and from D9 west to P4. The area of contamination was approximately 7,600 ft^2, as indicated in Table 5. Of the 16 wells sampled in November/December 2000, six wells exceeded the IWQS for benzene, as compared to five during the previous sampling event. Within the plume area, there were four wells (i.e., D4, D6, D7, and D9) at which the benzene concentration exceeded 500 µg/L. The concentrations of benzene in MW60, MW61, P2, and P4, which are located downgradient of the groundwater plume, were below the IWQS.

Groundwater elevations were measured in the monitoring wells on November 28, 2000, to determine the groundwater flow direction. A list of the wells and corresponding water level elevations is presented in Table 4. The potentiometric surface map generated from the water level measurements is presented in Figure 9. In November/December 2000, the groundwater flow direction was toward the northwest, the groundwater gradient was approximately 0.0097 foot/foot, and the average groundwater elevation was 12.09 feet AMSL.

Depth to free product and free product thickness are presented in Table 4. In November/December 2000, free product exceeding 1/8 inch (i.e., >0.01 foot) was observed in one product delineation point (i.e., D10). As shown in Figure 8, there was only one area of free product located near PR-4, which covered an area of approximately 205 ft^2. Free product recovery in November/December 2000 consisted of operation of the enhanced product removal system. Due to the lack of recoverable free product, the Ferret™ product recovery systems were not installed in any of the product recovery wells.

The air injection portion of the enhanced recovery system remained shut down until the blower/compressor was replaced in November 2000 and a new motor was installed in December 2000. The air injection system was restarted in December 2000. The coupling joint between the motor and the blower/compressor was replaced in January 2001. In addition, the glass liquid level tube on the vacuum condensate tank froze in January 2001 and was replaced in February 2001.

On January 10, 2001, the downgradient injectors J2, J3, and J4 were turned off because the benzene concentrations in this area of the site had decreased below 10 µg/L. Injectors J5, J6, and J8 were turned on to form the row of injectors located on the leading edge of the groundwater plume. The monitoring locations were not changed for the next sampling event in February 2001.

3.4.13 Thirteenth Sampling Event – February 2001

The oxygen injection system had been in operation for 21 months (i.e., 1.8 years) when the thirteenth sampling event was conducted. The location of the oxygen injectors in operation was last modified in January 2001, as shown in Figure 10. The row of oxygen injectors (J5, J6, J7, and J8) downgradient of the

groundwater plume was put into operation. The oxygen injection locations (J9 through J13 and J18 through J20) were located within the groundwater plume. The monitoring locations to determine the effectiveness of the pilot study were MW60, MW61, MW63, P1, P2, P4, D3, D4, D6, D7, D9, D10, D12, D14, D17, and D19.

Sixteen monitoring locations were sampled for BTEX on February 1, 2001. Analytical results for groundwater sampling are summarized in Table 3 and presented in Figure 10. The laboratory results of the February 2001 sampling event are provided in Appendix V and summarized below.

- Benzene was detected in 16 of 16 samples at concentrations ranging from 0.28J µg/L to 1,180 µg/L. Five of the concentrations exceeded the IWQS of 71.28 µg/L, and four of the concentrations exceeded the benzene ACL of 78 µg/L.

- Toluene was detected in seven of 16 samples at concentrations ranging from 11.5 µg/L to 2,280 µg/L. None of the concentrations exceeded the toluene IWQS of 200,000 µg/L.

- Ethylbenzene was detected in 16 of 16 samples at concentrations ranging from 0.19J µg/L to 1,010J µg/L. None of the concentrations exceeded the ethylbenzene IWQS of 28,718 µg/L.

- Total xylenes were detected in 16 of 16 samples at concentrations ranging from 0.50J µg/L to 7,950 µg/L. A Georgia IWQS for xylenes does not exist, and none of the concentrations exceeded the MCL of 10,000 µg/L.

As shown in Figure 10, the plume was roughly circular in shape and extended from D19 north to MW61 and from D9 west to P4. The area of contamination was approximately 7,500 ft^2, as indicated in Table 5. Of the 16 wells sampled in February 2001, five wells exceeded the IWQS for benzene, as compared to six during the previous sampling event. Within the plume area, there were two wells (i.e., D7 and D9) at which the benzene concentration exceeded 500 µg/L. The concentrations of benzene in MW60, MW61, P2, and P4, which are located downgradient of the groundwater plume, were below the IWQS.

Groundwater elevations were measured in the monitoring wells on February 1, 2001, to determine the groundwater flow direction. A list of the wells and corresponding water level elevations is presented in Table 4. The potentiometric surface map generated from the water level measurements is presented in Figure 11. In February 2001, the groundwater flow direction was toward the northwest, the groundwater gradient was approximately 0.012 foot/foot, and the average groundwater elevation was 12.14 feet AMSL.

Depth to free product and free product thickness are presented in Table 4. In February 2001, free product exceeding 1/8 inch (i.e., >0.01 foot) was observed in four product delineation points (i.e., D3, D6, D10 and D11). As shown in Figure 12, two areas of free product were observed. One area was located between product recovery wells PR-2, PR-4, and PR-5 and covered an area of approximately 745 ft^2. The second area covered an area of approximately 65 ft^2 and was located near D3. Free product recovery in February 2001 consisted of operation of the enhanced product removal system. Due to the lack of recoverable free product, the Ferret™ product recovery systems were not installed in any of the product recovery wells during this time period.

On January 31, 2001, the Matrix system was not maintaining pressure in the oxygen tank. Representatives from Matrix fixed the problem on February 21, 2001. On March 13, 2001, injector J8 was turned off because the benzene concentrations in this area of the site were less than 10 µg/L. Injector J27, which was

installed to provide additional coverage within the middle of the groundwater plume, was turned on. The monitoring locations were not changed for the next sampling event in April 2001.

3.4.14 Fourteenth Sampling Event – April 2001

The oxygen injection system had been in operation for 23 months (i.e., 1.9 years) when the fourteenth sampling event was conducted. The location of the oxygen injectors in operation was last modified in January 2001, as shown in Figure 12. The row of oxygen injectors (J5, J6, and J7) downgradient of the groundwater plume was put into operation. The oxygen injection locations (J9 through J13, J18 through J20, and J27) were located within the groundwater plume. The monitoring locations to determine the effectiveness of the pilot study were MW60, MW61, MW63, P1, P2, P4, D3, D4, D6, D7, D9, D10, D12, D14, D17, and D19.

Fifteen monitoring locations were sampled for BTEX on April 7 and 8, 2000. Analytical results for groundwater sampling are summarized in Table 3 and presented in Figure 12. The laboratory results of the April 2001 sampling event are provided in Appendix V and summarized below.

- Benzene was detected in 15 of 16 samples at concentrations ranging from 0.27J µg/L to 476 µg/L. Five of the concentrations exceeded the IWQS of 71.28 µg/L and the benzene ACL of 78 µg/L.

- Toluene was detected in 14 of 16 samples at concentrations ranging from 0.28J µg/L to 1,440 µg/L. None of the concentrations exceeded the toluene IWQS of 200,000 µg/L.

- Ethylbenzene was detected in 12 of 16 samples at concentrations ranging from 0.26J µg/L to 500 µg/L. None of the concentrations exceeded the ethylbenzene IWQS of 28,718 µg/L.

- Total xylenes were detected in 13 of 16 samples at concentrations ranging from 0.93J µg/L to 14,700 µg/L. A Georgia IWQS for xylenes does not exist. The concentration in D10 exceeded the MCL of 10,000 µg/L.

As shown in Figure 12, the plume was roughly circular in shape and extended from D19 north to MW61 and from D9 west to P4. The area of contamination was approximately 7,100 ft^2, as indicated in Table 5. Of the 16 wells sampled in April 2001, five wells exceeded the IWQS for benzene, as compared to four during the previous sampling event. Within the plume area, there were no wells at which the benzene concentration exceeded 500 µg/L. The concentrations of benzene in MW60, MW61, P2, and P4, which are located downgradient of the groundwater plume, were below the IWQS.

Groundwater elevations were measured in the monitoring wells on April 7, 2001, to determine the groundwater flow direction. A list of the wells and corresponding water level elevations is presented in Table 4. The potentiometric surface map generated from the water level measurements is presented in Figure 13. In April 2001, the groundwater flow direction was toward the northwest, the groundwater gradient was approximately 0.013 foot/foot, and the average groundwater elevation was 12.49 feet AMSL.

Depth to free product and free product thickness are presented in Table 4. In April 2001, free product exceeding 1/8 inch (i.e., >0.01 foot) was observed in one product delineation point (i.e., D11). As shown in Figure 12, the area of free product was located between PR-2 and PR-4 and covered an area of approximately 182 ft^2.

Prior to the fourteenth sampling event, two additional free product recovery wells (PR-6 and PR-7) were installed at the site in April 2001. Product delineation point D3 was overdrilled for the installation of well PR-6, and well PR-7 was drilled in the vicinity of product delineation point D10. Boring logs are provided in Appendix III, and well construction diagrams are provided in Appendix IV. No measurable free product was observed in these wells following well development activities. Free product recovery in April 2001 consisted of operation of the enhanced product removal system. Due to the lack of recoverable free product, the Ferret™ product recovery systems were not installed in any of the product recovery wells during this time period.

In April 2001, the condensate pump in the condensate tank was not working. New floats were installed in the tank, and the system was restarted. In addition, the main electrical box was replaced on the Matrix system, and the discharge piping of the vacuum extraction system was cleaned out. Neither the oxygen injection locations nor the monitoring locations were changed for the next sampling event in June 2001.

3.4.15 Fifteenth Sampling Event – June 2001

The oxygen injection system had been in operation for 25 months (i.e., 2.1 years) when the fifteenth sampling event was conducted. The location of the oxygen injectors in operation was last modified in January 2001, as shown in Figure 14. The row of oxygen injectors (J5, J6, and J78) downgradient of the groundwater plume was put into operation. The oxygen injection locations (J9 through J13, J18 through J20, and J27) were located within the groundwater plume. The monitoring locations to determine the effectiveness of the pilot study were MW60, MW61, MW63, P1, P2, P4, D3, D4, D6, D7, D9, D10, D12, D14, D17, and D19.

Sixteen monitoring locations were sampled for BTEX on June 7, 2001. Analytical results for groundwater sampling are summarized in Table 3 and presented in Figure 14. The laboratory results of the June 2001 sampling event are provided in Appendix V and summarized below.

- Benzene was detected in 14 of 16 samples at concentrations ranging from 0.35J µg/L to 988 µg/L. Six of the concentrations exceeded the IWQS of 71.28 µg/L and the benzene ACL of 78 µg/L.

- Toluene was not detected in any of the 16 samples.

- Ethylbenzene was detected in 12 of 16 samples at concentrations ranging from 0.16J µg/L to 688 µg/L. None of the concentrations exceeded the ethylbenzene IWQS of 28,718 µg/L.

- Total xylenes were detected in 12 of 16 samples at concentrations ranging from 0.60J µg/L to 2,540 µg/L. A Georgia IWQS for xylenes does not exist, and none of the concentrations exceeded the MCL of 10,000 µg/L.

As shown in Figure 14, the plume was roughly circular in shape and extended from D19 north to MW61 and from D9 west to P4. The area of contamination was approximately 5,350 ft^2, as indicated in Table 5. Of the 16 wells sampled in June 2001, six wells exceeded the IWQS for benzene, as compared to five during the previous sampling event. Within the plume area, there was one well (i.e., D9) at which the benzene concentration exceeded 500 µg/L. The concentrations of benzene in MW60, MW61, P2, P4, D3/PR-6, and D20, which are located downgradient of the groundwater plume, were below the IWQS.

Groundwater elevations were measured in the monitoring wells on June 8, 2001, to determine the groundwater flow direction. A list of the wells and corresponding water level elevations is presented in Table 4. The potentiometric surface map generated from the water level measurements is presented in

Figure 15. In June 2001, the groundwater flow direction was toward the northwest, the groundwater gradient was approximately 0.011 foot/foot, and the average groundwater elevation was 12.09 feet AMSL.

Depth to free product and free product thickness are presented in Table 4. In June 2001, free product exceeding 1/8 inch (i.e., >0.01 foot) was not observed in any of the product delineation points. Free product recovery in June 2001 consisted of operation of the enhanced product removal system. Due to the lack of recoverable free product, the Ferret™ product recovery systems were not installed in any of the product recovery wells during this time period. Neither the oxygen injection locations nor the monitoring locations were changed for the next sampling event in August 2001.

4.0 ANALYSIS OF TRENDS

4.1 AREAS OF PLUME AND FREE PRODUCT

During the first year of oxygen injection (i.e., May 1999 through May 2000), the area of benzene contamination in groundwater decreased from 22,700 ft^2 in May 1999 to 8,815 ft^2 in May 2000. During the first year of remediation, the area of the dissolved benzene plume was reduced by 61 percent. The area of the plume is highly dependent on the wells that have continually been added to the monitoring program to better track the progress of the oxygen injection.

As shown in the groundwater quality maps, the area of benzene contamination in groundwater has continued to decrease in size during the second year of oxygen injection. The area of the dissolved benzene plume was 7,800 ft^2 in July 2000 and 5,350 ft^2 in June 2001, representing a reduction of 31 percent. The total decrease in the plume area has been 76 percent since the initiation of the corrective action.

During the pilot study activities in 1999, the area of free product ranged in size from approximately 1,850 ft^2 to 2,875 ft^2, with limited recovery of free product. The area of free product did not show a significant decrease in area until additional free product recovery measures were implemented in February 2000. As a result of the enhanced product recovery system, consisting of vacuum extraction and air injection, that was installed in February 2000, the area of free product had been reduced by 90 percent to approximately 182 ft^2 in April 2001, although there was a very small amount of recoverable free product. In June 2001, there was no measurable free product present at the site.

4.2 BENZENE CONCENTRATIONS IN GROUNDWATER

During the first year of oxygen injection, wells P1, P3, MW11, and MW63 were located on the west side, or downgradient edge, of the dissolved groundwater plume. At the end of the second year of oxygen injection, wells D1, P2, P4, MW60, and MW61, which were located in the middle of the plume during the first year of remediation, are now located on the downgradient edge of the dissolved groundwater plume. As shown in Figure 16a, the benzene concentrations in these nine wells were well below the IWQS of 71.28 µg/L and ACL of 78 µg/L in June 2001.

Wells D3, D4, D6, D7, D9, D10, D12, D14, and D17 are located within the plume. Wells D3 and D4 have been in the monitoring plan since May 1999. As the area of the plume continued to change, wells D6, D10, and D17 were added to the monitoring plan in March 2000, and wells D7, D9, D12, and D14 were added to the monitoring plan in December 2000. As shown in Figure 16b, the benzene concentrations in

wells D3, D10, and D17, which are located at the plume perimeter, have been steadily decreasing since September 2000 and are now well below the IWQS of 71.28 µg/L and the ACL of 78 µg/L in June 2001. The benzene concentrations in wells D4, D6, D7, and D9 continue to remain above the remedial levels; however, the benzene concentrations in these wells have been reduced by 60 percent to 80 percent during operation of the remediation system. Since wells D12 and D14 were added to the monitoring plan, the benzene concentrations have been fluctuating with no discernable trend. Five wells within the plume have benzene concentrations that exceed the ACL of 78 µg/L and the IWQS of 71.28 µg/L.

Wells MW6, P5, D17, and D19 are located on the east side, or upgradient edge, of the groundwater plume. As shown in Figure 16c, the benzene concentrations have remained below the ACL of 78 µg/L and the IWQS of 71.28 µg/L since the first sampling event after the injection of oxygen began. As a result P5 and D21 were dropped from the monitoring program after the January 2000 sampling event in lieu of other wells located in the free product area. MW6 contains low concentrations of benzene, probably because it is located between the two rows of former underground storage tanks that were located in the Northern Fuel Battery. Well D19 was added to the monitoring plan in December 2000 to monitor the upgradient edge of the groundwater plume. The benzene concentrations in D19 have decreased by 8 percent since the well was added to the monitoring plan.

4.3 BIODEGRADATION PARAMETERS

In addition to the analytical samples collected during the pilot study sampling events, the groundwater was analyzed in the field for pH, dissolved oxygen (DO), oxygen-reduction potential (Redox), conductivity, and temperature. Microbial activity tends to be reduced outside a pH range of 5 to 9, and many of the anaerobic bacteria are particularly sensitive to pH extremes. DO is the highest energy-yielding electron acceptor for biodegradation of organic constituents, and aerobic conditions typically exist when the DO is greater than 1 mg/L to 2 mg/L. Redox is a measure of the type of microbial environment, which ranges from +500 mV for aerobic conditions to -300 mV for methanogenic conditions. Temperature affects the rates of microbial metabolism, and slower biodegradation rates occur at lower temperatures.

The average DO concentration at the site prior to initiation of oxygen injection was 2 mg/L, with an elevated area near D1, indicating that site conditions were favorable for aerobic hydrocarbon degradation. DO concentration maps for selected sampling events during the second year of oxygen injection are presented in Figure 17. As expected the DO concentration maps show that the oxygen injection is increasing the DO in the vicinity of the operating injector locations. As the locations of the injectors in operation change, the DO concentrations across the site increase in the newly injected areas and decrease where oxygen is no longer being injected. Following the injection of oxygen into the groundwater at the site, the average DO concentrations ranged from 3 mg/L to 20 mg/L during the first year of oxygen injection. During the second year of oxygen injection, the average DO concentrations were similar, ranging from 5 mg/L to 12 mg/L.

The average Redox potential at the site prior to initiation of oxygen injection was 95 mV, with an elevated area near D1, indicating that site conditions were somewhat favorable for aerobic hydrocarbon degradation. Redox potential maps for selected sampling events during the second year of oxygen injection are presented in Figure 18. As expected the Redox potential maps show that the oxygen injection is increasing the Redox in the vicinity of the operating injector locations. As the locations of the injectors in operation change, the Redox potential across the site increase in the newly injected areas and decrease where oxygen is no longer being injected. Following the injection of oxygen into the groundwater at the site, the average Redox potential ranged from 110 mV to 250 mV during the first year

of oxygen injection. During the second year of oxygen injection, the average Redox potential were similar, ranging from 79 mV to 294 mV.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The oxygen injection corrective action has produced positive results by reducing the area of the dissolved hydrocarbon plume so that it no longer impacts the underground storm drain at concentrations above the IWQS. The benzene concentrations continue to decrease at the site, and the corrective action should be continued at the site until benzene concentration levels are below the ACL of 78 µg/L. After 24 months of oxygen injection (i.e., July 2001), the site ranking score is 3,500 (Appendix VI). At the end of the first year of oxygen injection, the site ranking score was 51,000.

Bimonthly (i.e., every other month) groundwater sampling of wells MW60, MW61, MW63, P1, P2, P4, D3, D4, D6, D7, D9, D10, D12, D14, D17, and D19 for BTEX should continue until the benzene ACL is achieved. The wells sampled as part of the monitoring program may be changed based on the analytical results to better track the changes in the groundwater plume. Once the benzene ACL is achieved, confirmatory soil and groundwater sampling will be conducted. As indicated in the CAP–Part B Addendum #1 and First Annual Pilot Study Progress Report, confirmatory soil sampling will consist of the installation of 15 soil borings, with soil samples being collected for BTEX, polynuclear aromatic hydrocarbons, and TPH (SAIC 2000).

The enhanced free product recovery system that was implemented in February 2000 appears to have removed the majority of the recoverable free product; however, pockets of free product may be tied up in the vadose zone. The combination of air injection and vacuum extraction should remain in operation in conjunction with the oxygen injection.

A third annual progress report will be submitted to GA EPD in August 2002 and will summarize the corrective action measures and results from August 2001 to June 2002.

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APPENDIX I

FIGURES

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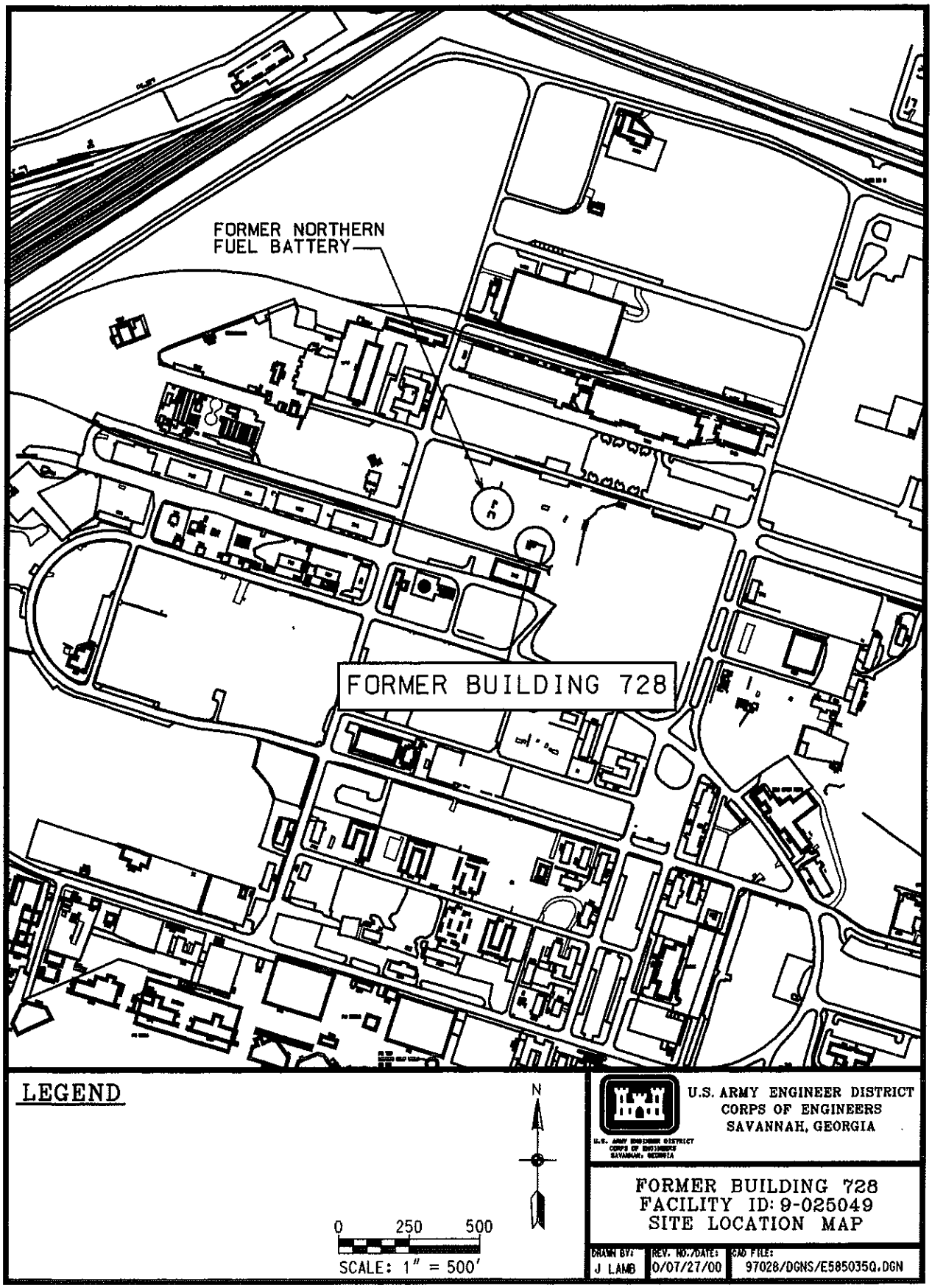

Figure 1. Location Map for the Former Building 728 Site, Facility ID #9-025049

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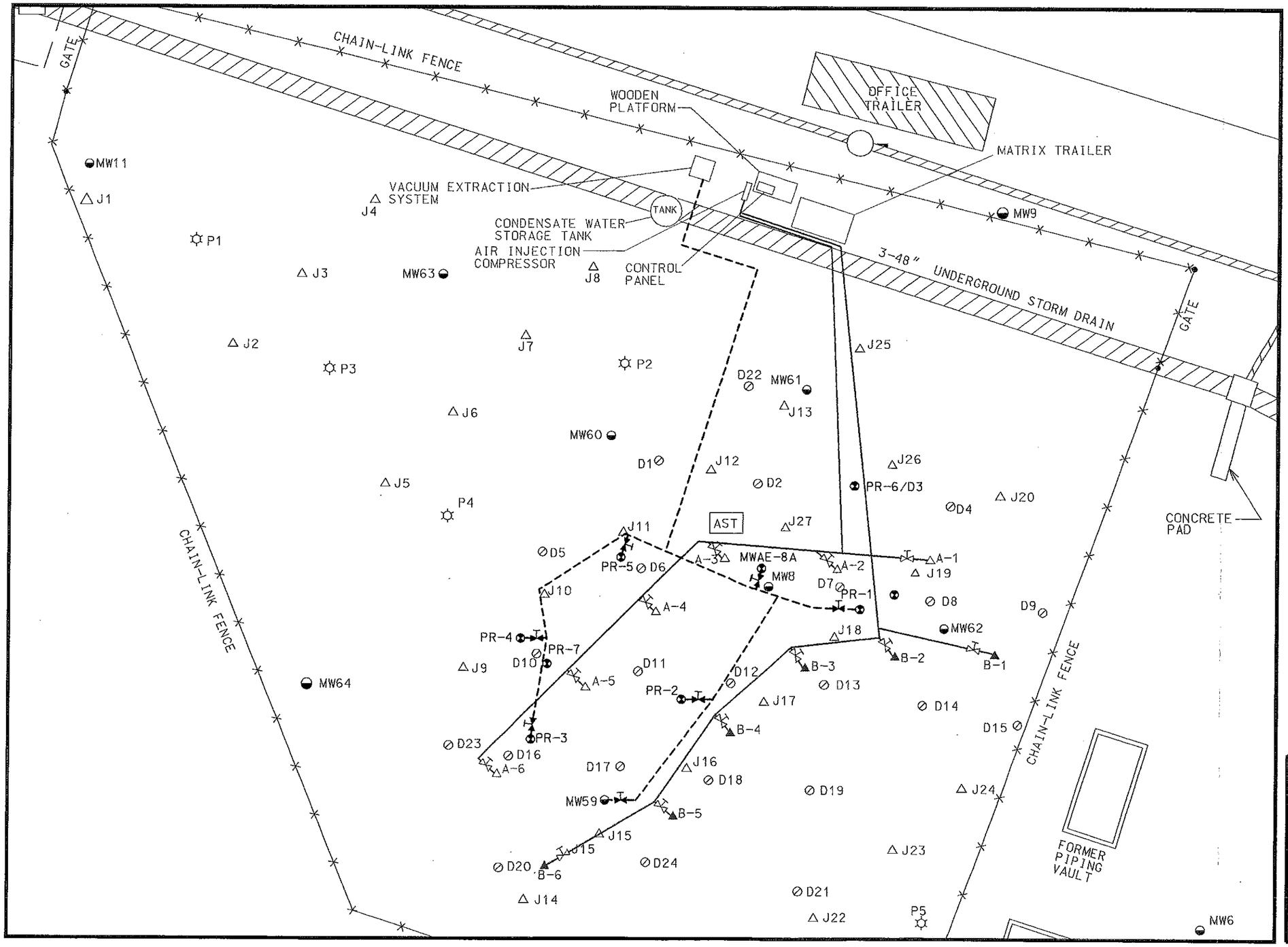

- CAP-PART B MONITORING WELLS
- OBSERVATION POINTS
- PRODUCT RECOVERY & VACUUM EXTRACTION WELL
- FLOW ADJUST VALVE & VACUUM GAUGE
- 2" DIA. PIPE
- AIR INJECTION WELL (A MANIFOLD)
- AIR INJECTION WELL (B MANIFOLD)
- FLOW ADJUST VALVE & PRESSURE GAUGE
- 1" DIA. PIPE
- OXYGEN INJECTION POINTS
- PRODUCT DELINEATION POINTS

NOTES:

1. OXYGEN INJECTION POINTS J25, J26, & J27 WERE INSTALLED IN DECEMBER 2000. ALL OTHER OXYGEN INJECTION POINTS WERE INSTALLED IN MAY 1999.
2. PRODUCT RECOVERY WELLS PR-6 AND PR-7 WERE INSTALLED IN APRIL 2001. ALL OTHER PRODUCT RECOVERY WELLS WERE INSTALLED IN OCTOBER 1999.

N

0 5 10 20 40

SCALE: 1" = 20'

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FORMER BUILDING 728
FACILITY ID: 9-025049
OXYGEN INJECTION/PRODUCT
RECOVERY SITE LOCATION PLAN
(JUNE 2001)

DRAWN BY:	REV. NO./DATE:	CAD FILE:
J.LAMB	0/06/15/00	97028/DGNS/E585035P.DGN

Figure 2. Site Location Map of the Former Building 728 Site, Facility ID #9-025049

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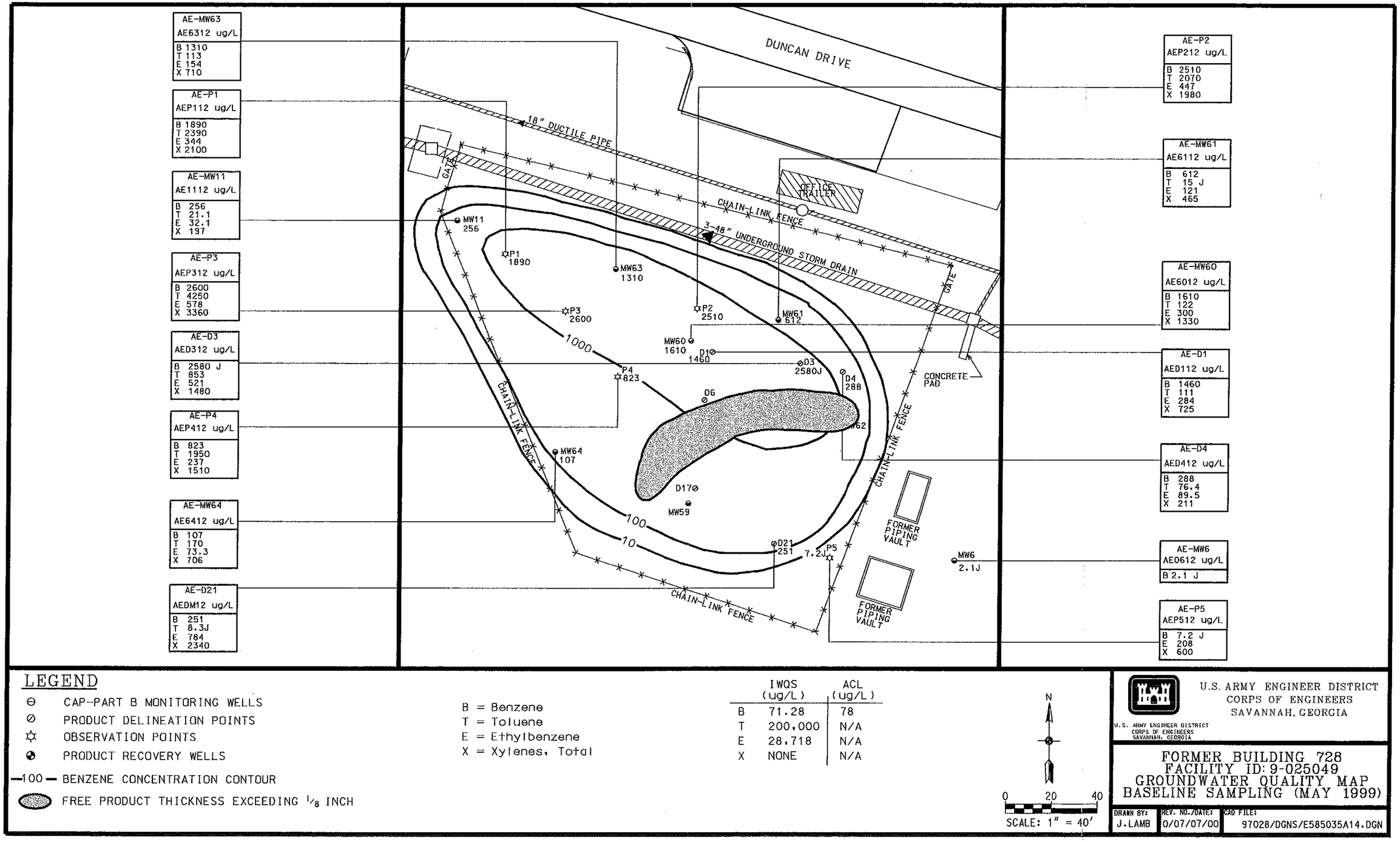

LEGEND

- ⊖ CAP-PART B MONITORING WELLS
- ⊘ PRODUCT DELINEATION POINTS
- ☼ OBSERVATION POINTS
- ◕ PRODUCT RECOVERY WELLS
- —100— BENZENE CONCENTRATION CONTOUR
- FREE PRODUCT THICKNESS EXCEEDING 1/8 INCH

B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes, Total

	IWQS (ug/L)	ACL (ug/L)
B	71.28	78
T	200,000	N/A
E	28,718	N/A
X	NONE	N/A

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FORMER BUILDING 728
FACILITY ID: 9-025049
GROUNDWATER QUALITY MAP
BASELINE SAMPLING (MAY 1999)

DRAWN BY:	REV. NO./DATE:	CAD FILE:
J.LAMB	0/07/07/00	97028/DGNS/E585035A14.DGN

Figure 3. Baseline Groundwater Analytical Results (May 1999) at the Former Building 728 Site, Facility ID #9-025049

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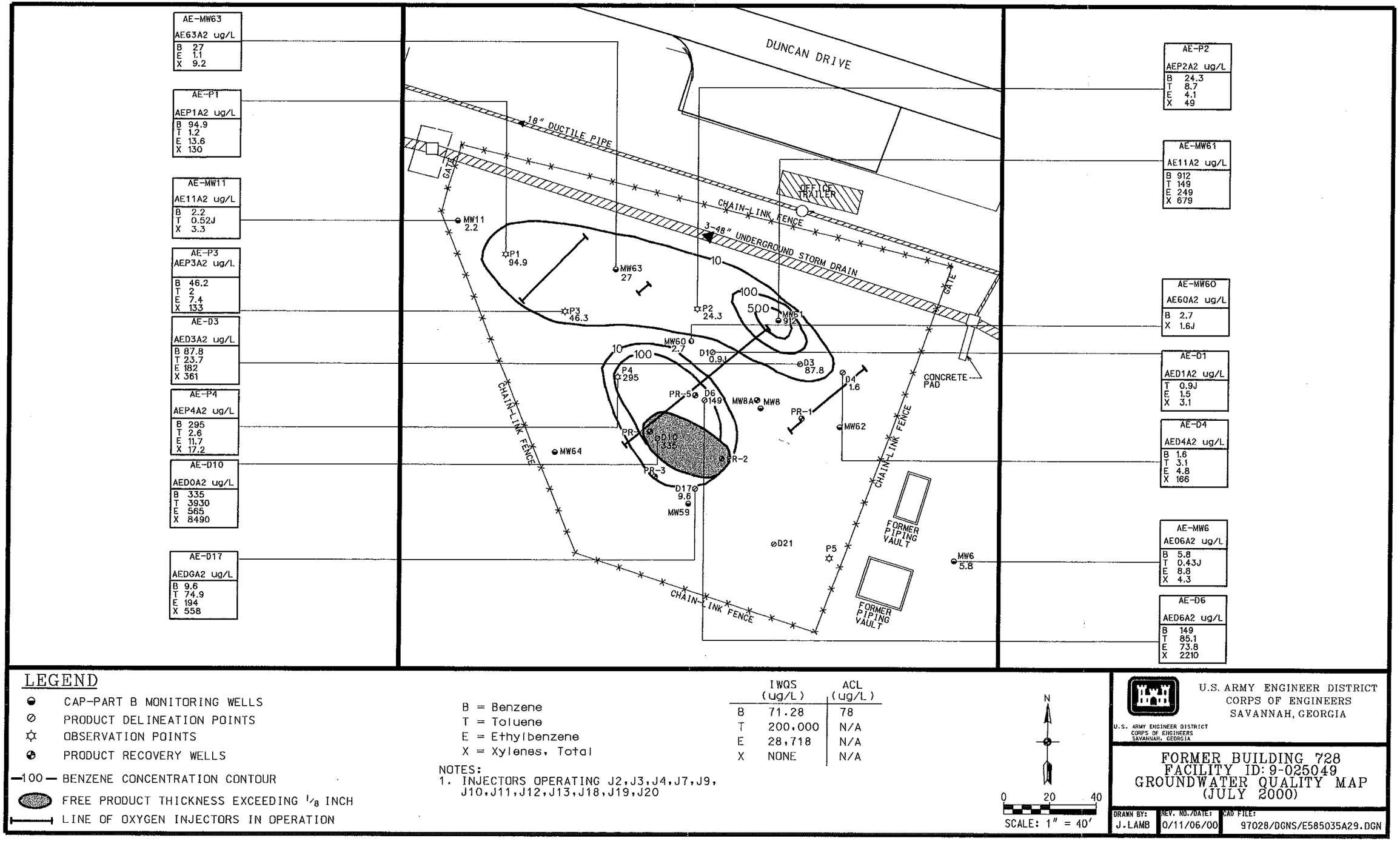

Figure 4. Groundwater Analytical Results (July 2000) at the Former Building 728 Site, Facility ID #9-025049

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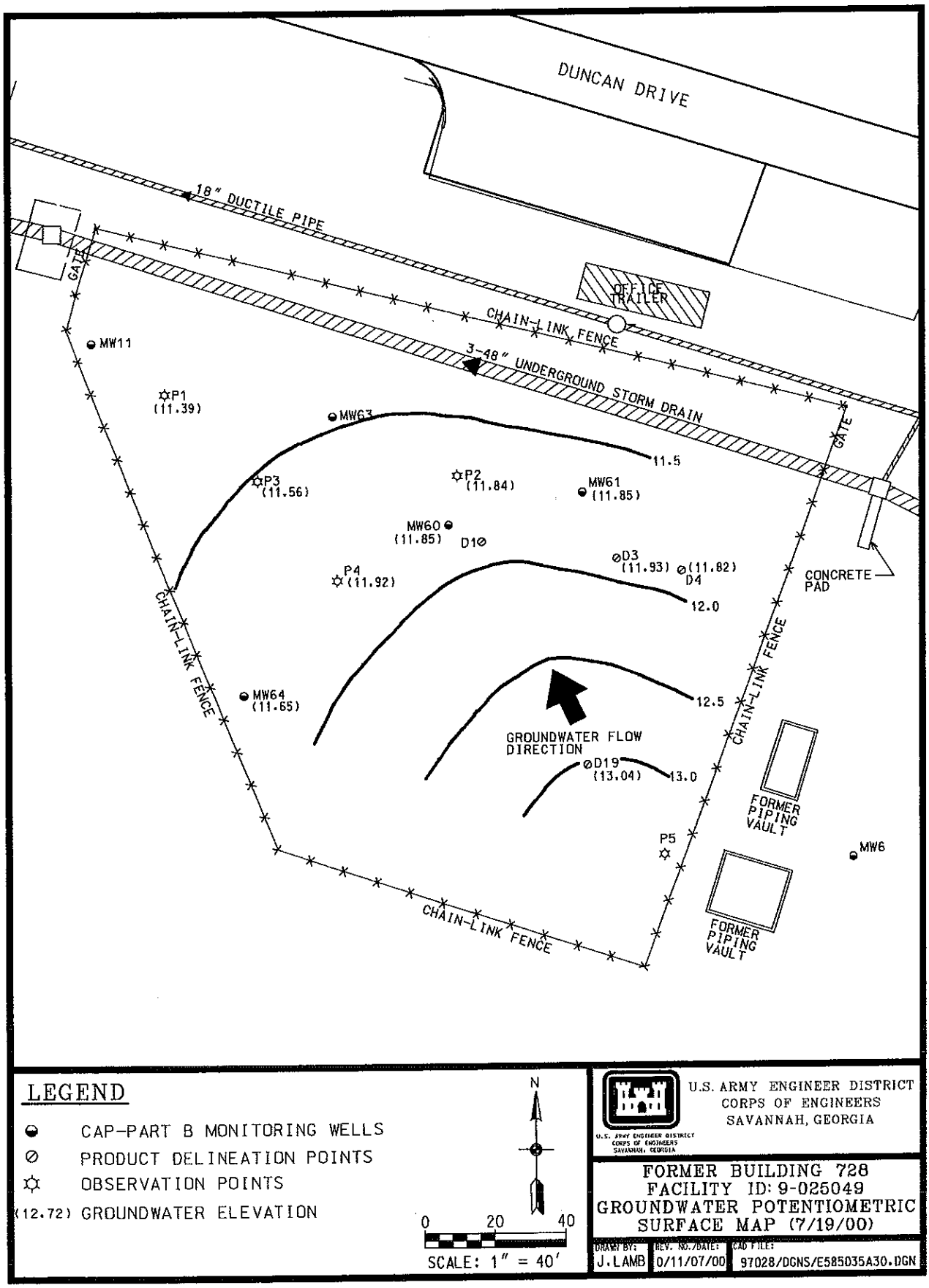

Figure 5. Groundwater Potentiometric Surface Map (July 2000) at the Former Building 728 Site, Facility ID #9-025049

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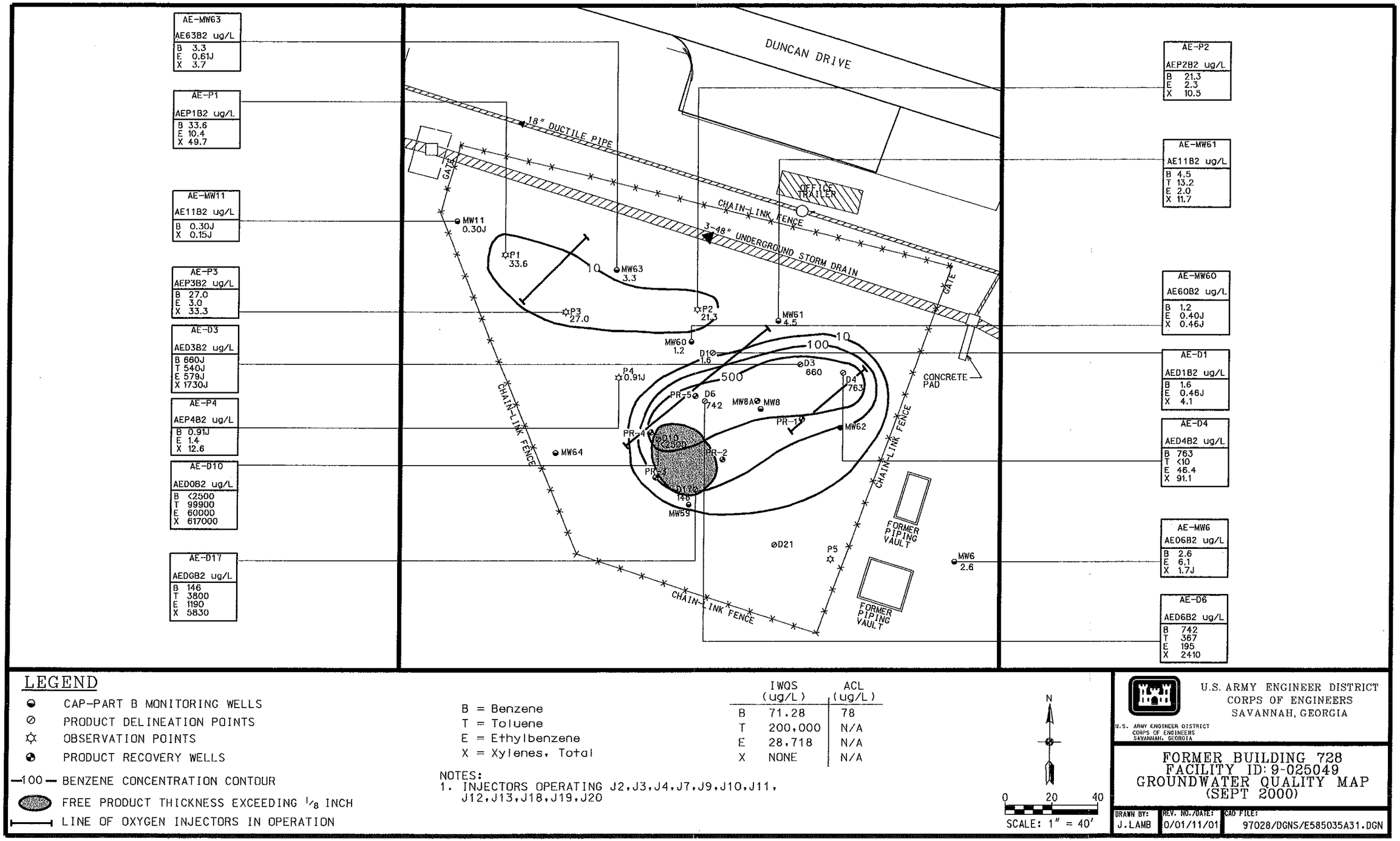

Figure 6. Groundwater Analytical Results (September 2000) at the Former Building 728 Site, Facility ID #9-025049

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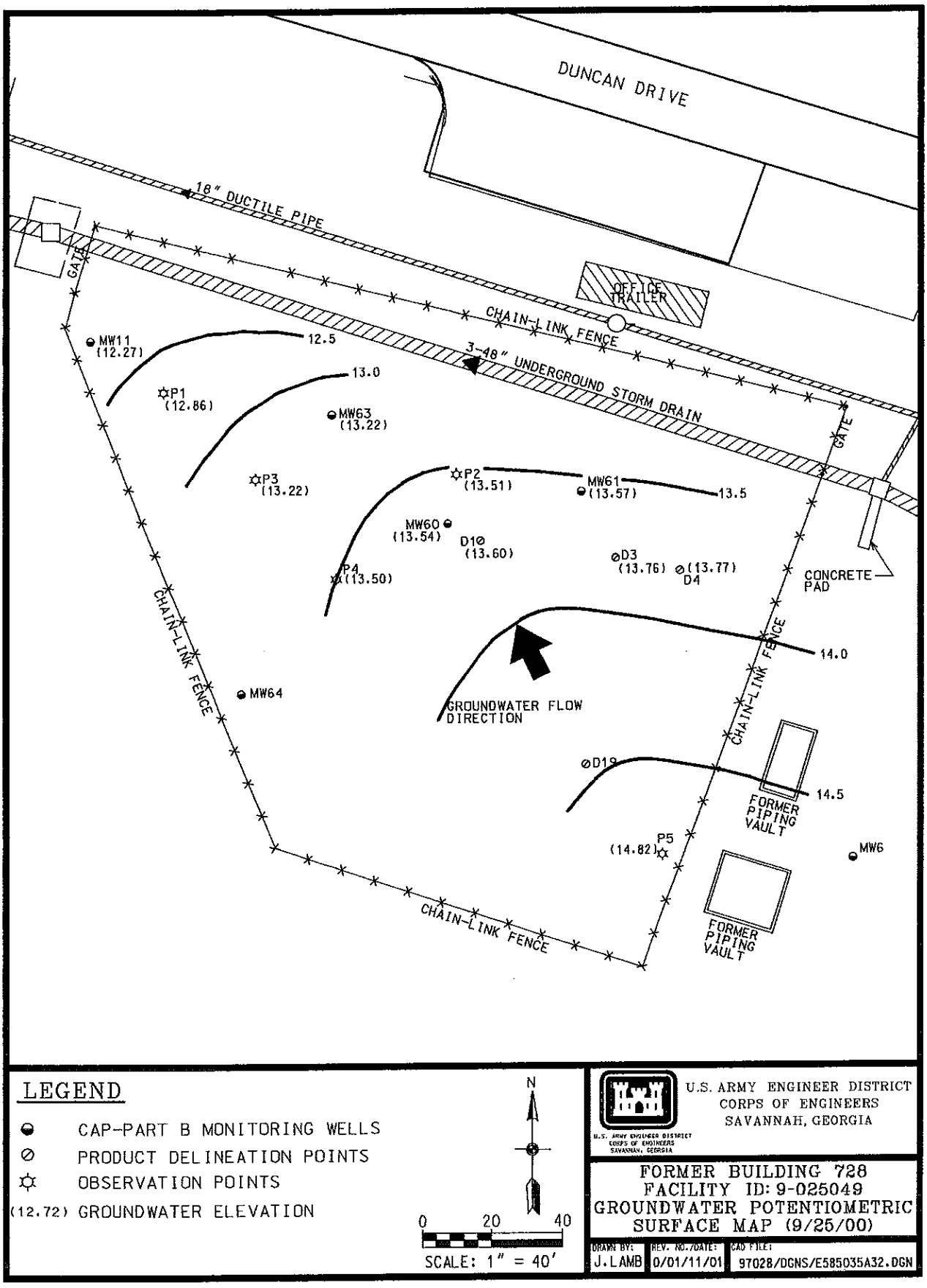

Figure 7. Groundwater Potentiometric Surface Map (September 2000) at the Former Building 728 Site, Facility ID #9-025049

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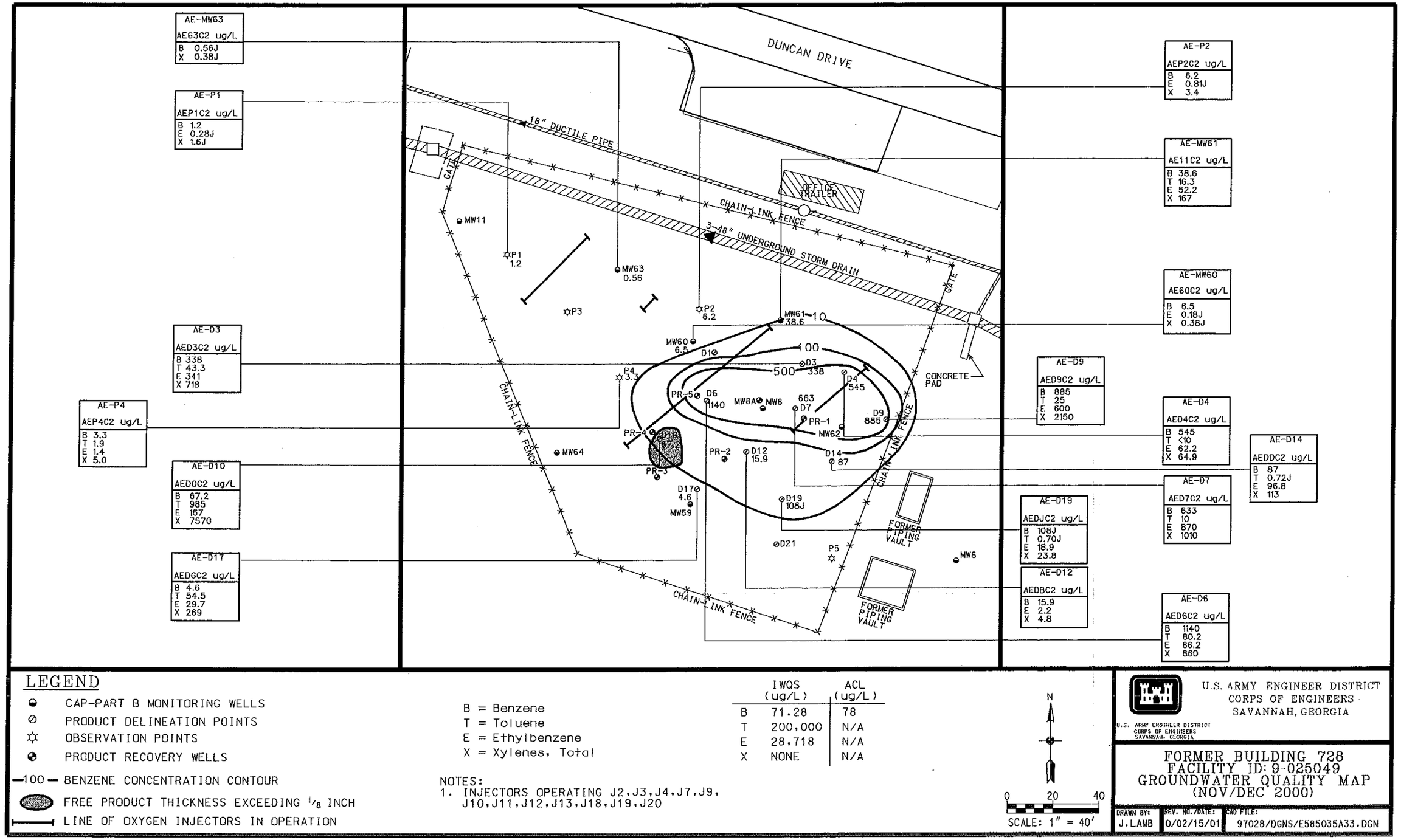

Figure 8. Groundwater Analytical Results (November/December 2000) at the Former Building 728 Site, Facility ID #9-025049

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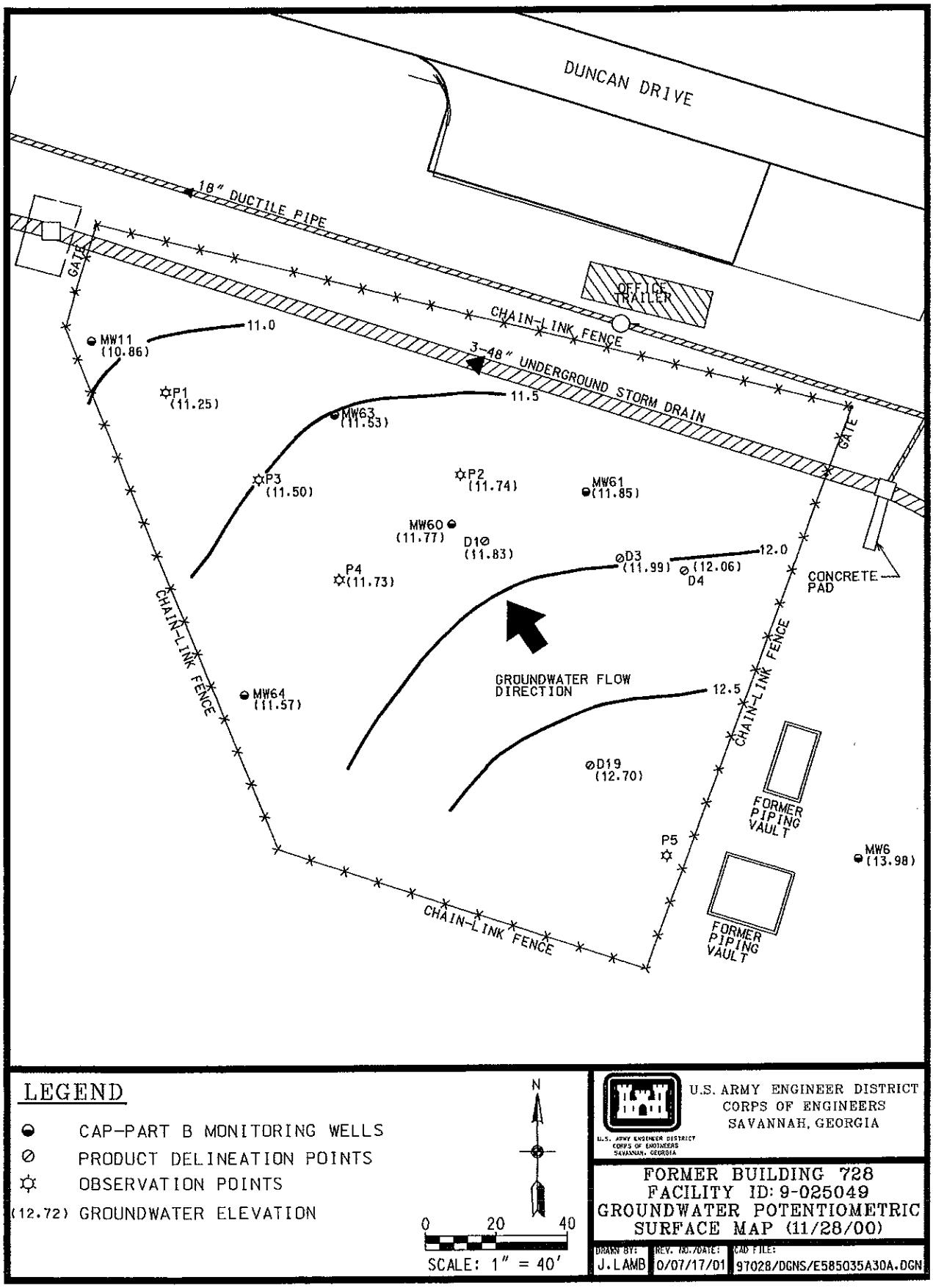

Figure 9. Groundwater Potentiometric Surface Map (November/December 2000) at the Former Building 728 Site, Facility ID #9-025049

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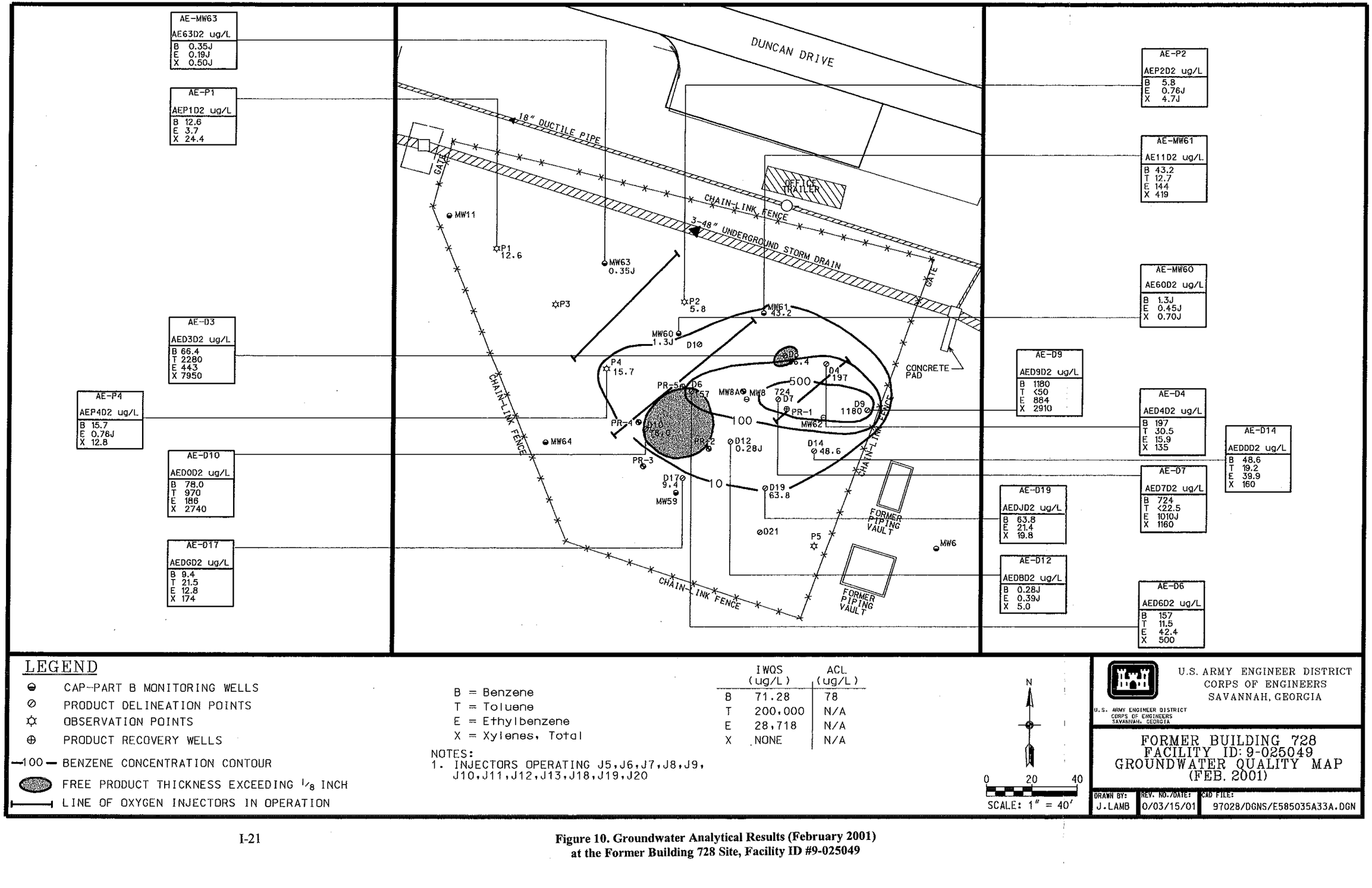

LEGEND

- CAP-PART B MONITORING WELLS
- PRODUCT DELINEATION POINTS
- OBSERVATION POINTS
- PRODUCT RECOVERY WELLS
- —100— BENZENE CONCENTRATION CONTOUR
- FREE PRODUCT THICKNESS EXCEEDING 1/8 INCH
- LINE OF OXYGEN INJECTORS IN OPERATION

B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes, Total

	IWQS (ug/L)	ACL (ug/L)
B	71.28	78
T	200,000	N/A
E	28,718	N/A
X	NONE	N/A

NOTES:
1. INJECTORS OPERATING J5,J6,J7,J8,J9, J10,J11,J12,J13,J18,J19,J20

N

0 20 40
SCALE: 1" = 40'

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FORMER BUILDING 728
FACILITY ID: 9-025049
GROUNDWATER QUALITY MAP
(FEB. 2001)

DRAWN BY:	REV. NO./DATE:	CAD FILE:
J.LAMB	0/03/15/01	97028/DGNS/E585035A33A.DGN

Figure 10. Groundwater Analytical Results (February 2001) at the Former Building 728 Site, Facility ID #9-025049

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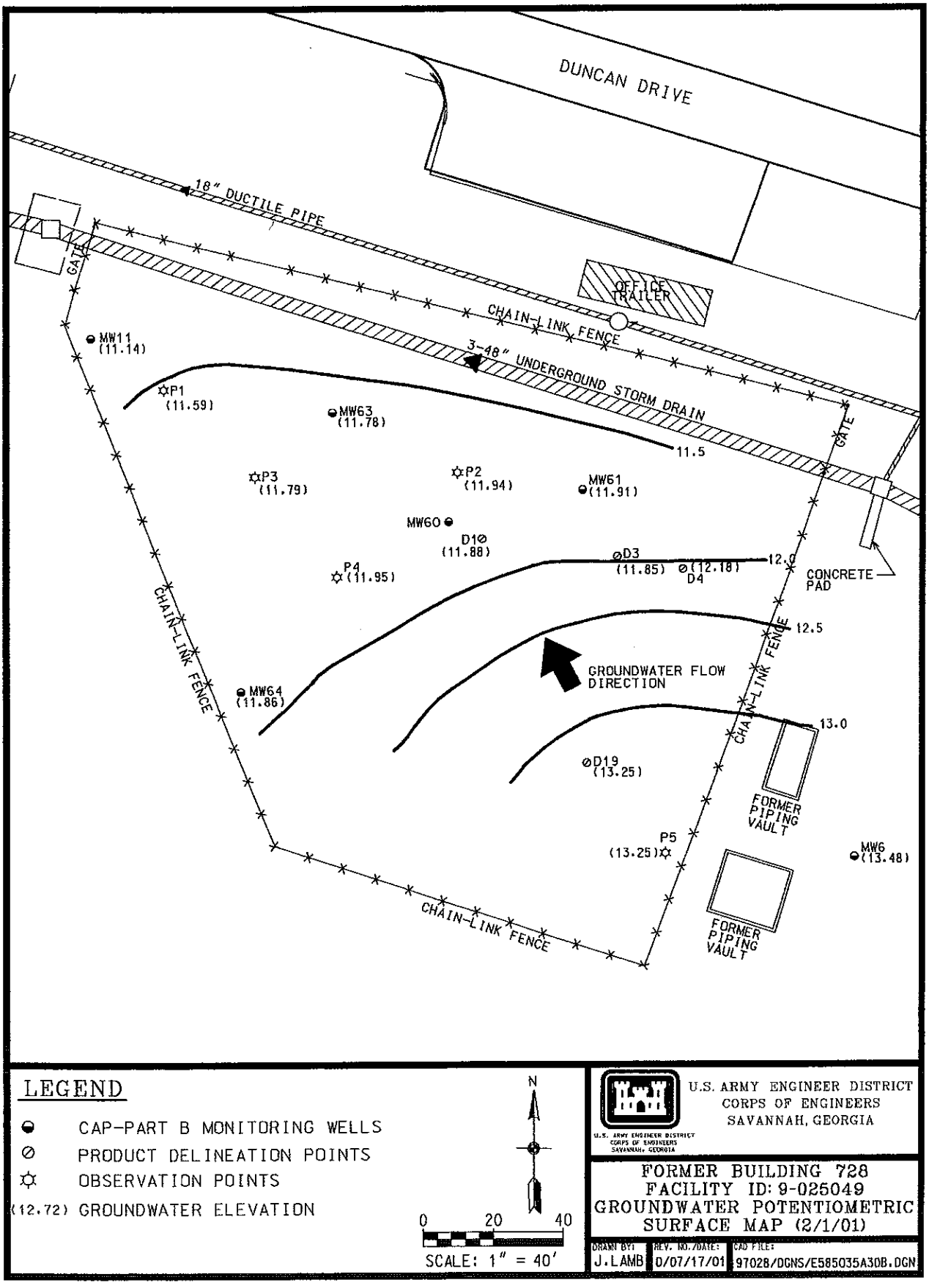

Figure 11. Groundwater Potentiometric Surface Map (February 2001) at the Former Building 728 Site, Facility ID #9-025049

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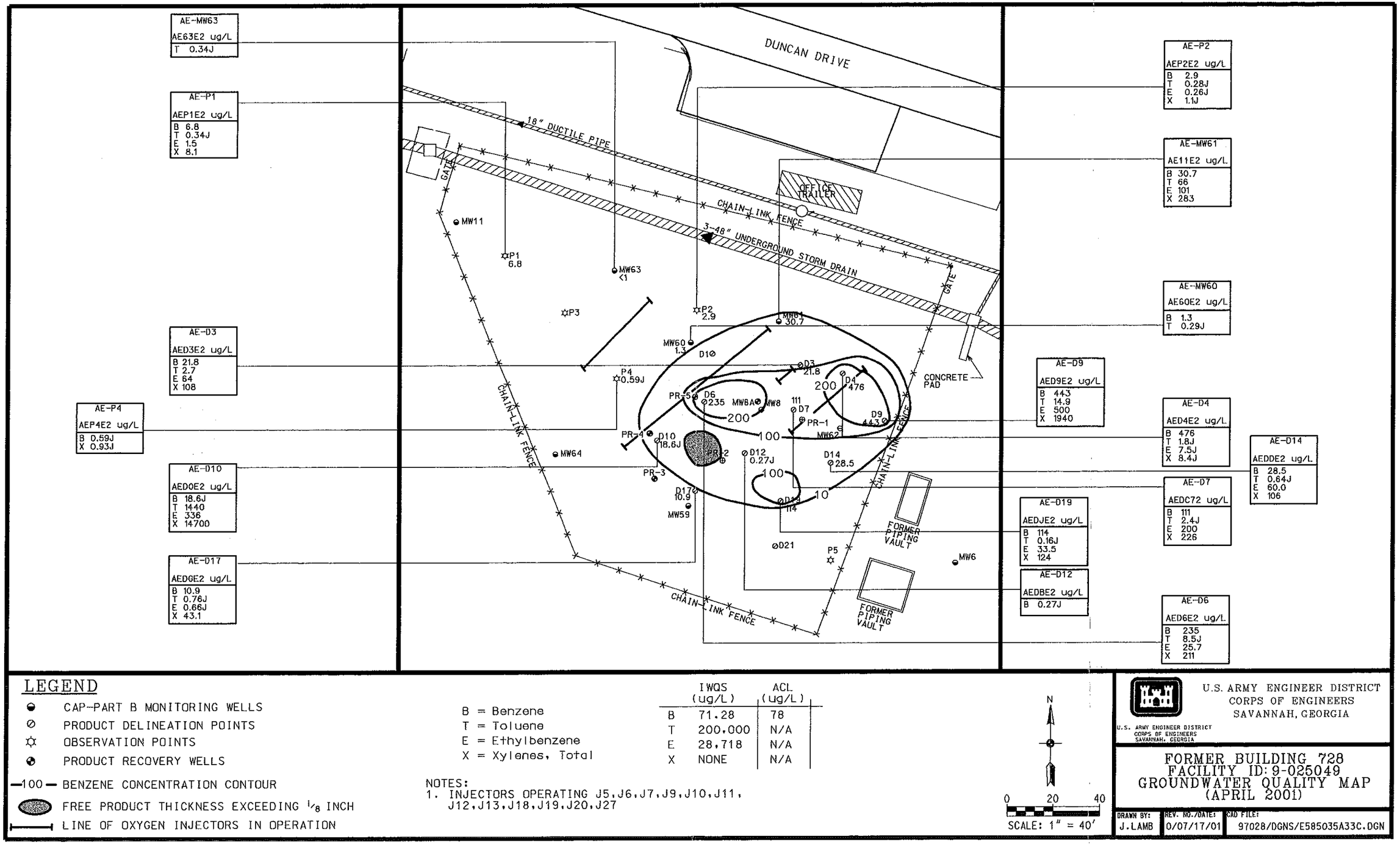

Figure 12. Groundwater Analytical Results (April 2001) at the Former Building 728 Site, Facility ID #9-025049

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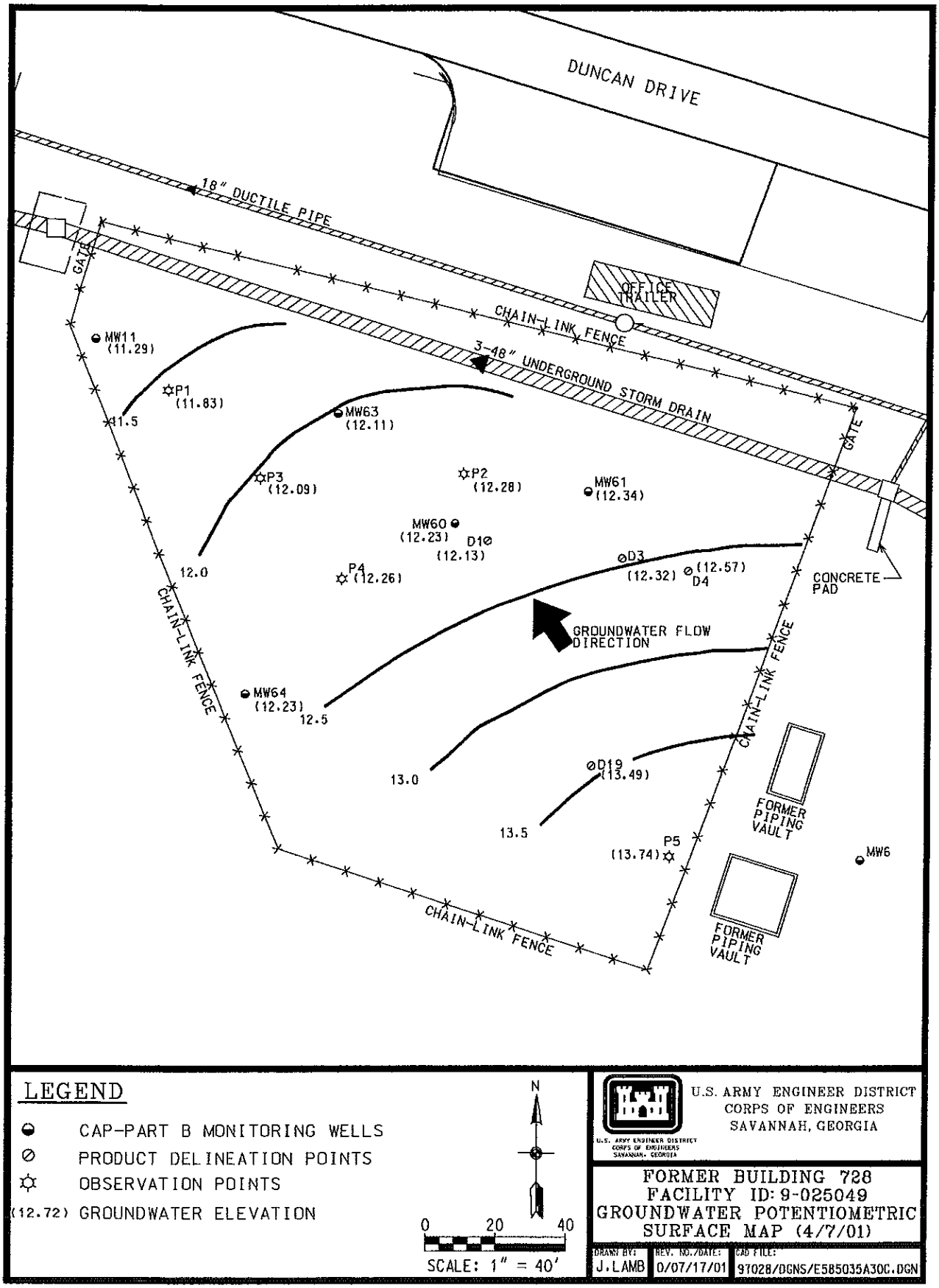

Figure 13. Groundwater Potentiometric Surface Map (April 2001) at the Former Building 728 Site, Facility ID #9-025049

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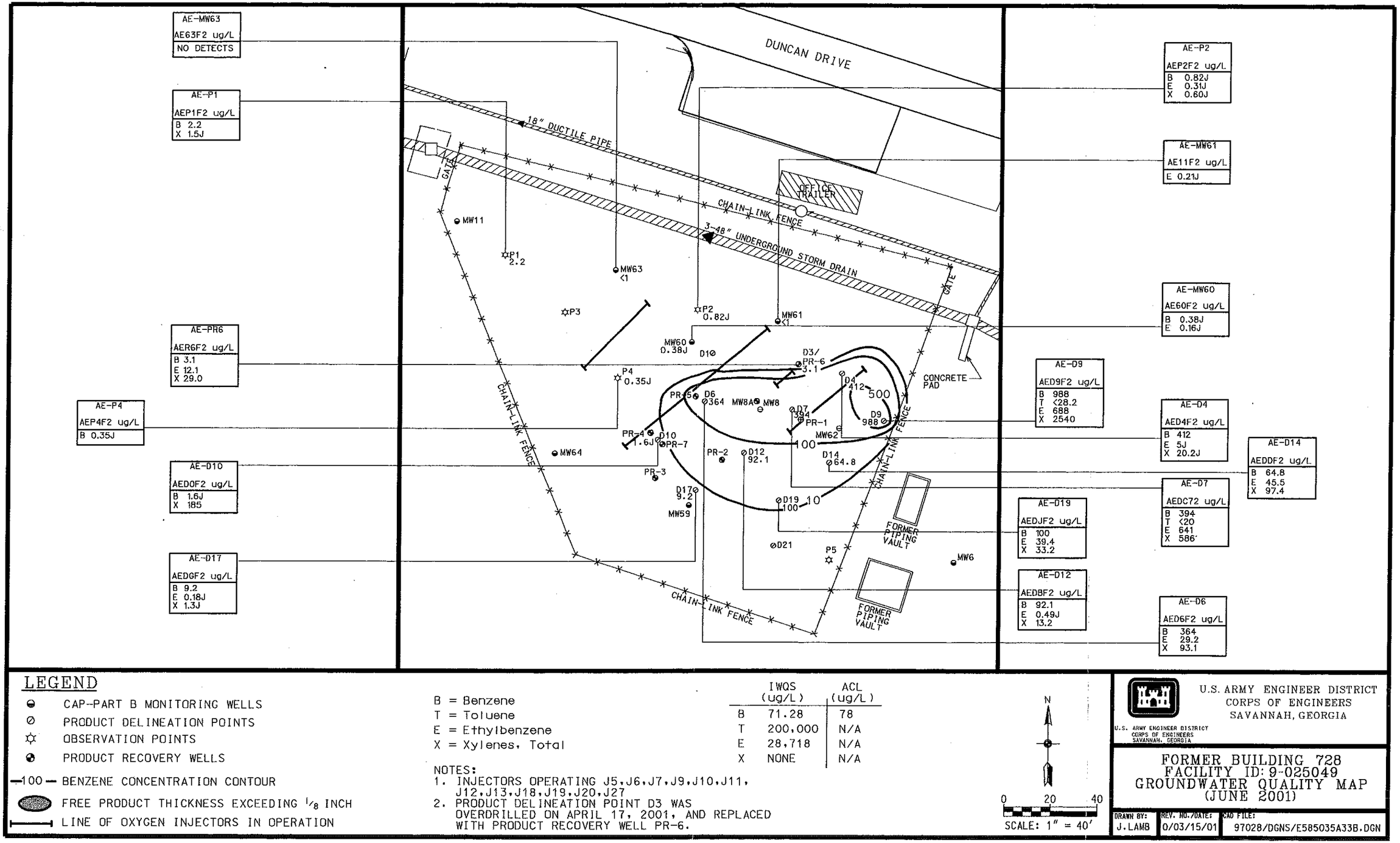

LEGEND

- CAP-PART B MONITORING WELLS
- PRODUCT DELINEATION POINTS
- OBSERVATION POINTS
- PRODUCT RECOVERY WELLS
- —100— BENZENE CONCENTRATION CONTOUR
- FREE PRODUCT THICKNESS EXCEEDING 1/8 INCH
- LINE OF OXYGEN INJECTORS IN OPERATION

B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes, Total

	IWQS (ug/L)	ACL (ug/L)
B	71.28	78
T	200,000	N/A
E	28,718	N/A
X	NONE	N/A

NOTES:
1. INJECTORS OPERATING J5,J6,J7,J9,J10,J11, J12,J13,J18,J19,J20,J27
2. PRODUCT DELINEATION POINT D3 WAS OVERDRILLED ON APRIL 17, 2001, AND REPLACED WITH PRODUCT RECOVERY WELL PR-6.

N

0 20 40

SCALE: 1" = 40'

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FORMER BUILDING 728
FACILITY ID: 9-025049
GROUNDWATER QUALITY MAP
(JUNE 2001)

DRAWN BY:	REV. NO./DATE:	CAD FILE:
J.LAMB	0/03/15/01	97028/DGNS/E585035A33B.DGN

Figure 14. Groundwater Analytical Results (June 2001) at the Former Building 728 Site, Facility ID #9-025049

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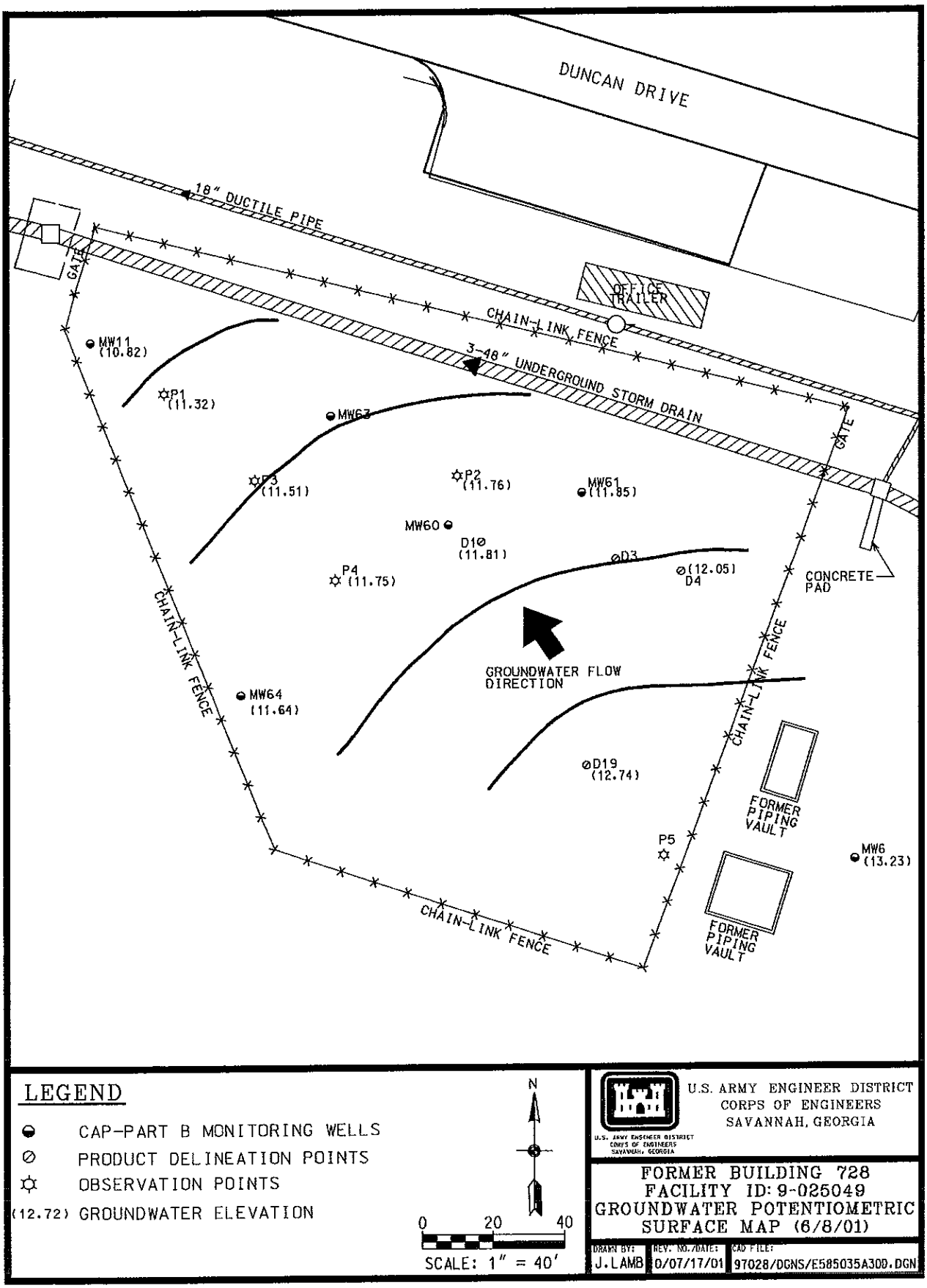

Figure 15. Groundwater Potentiometric Surface Map (June 2001) at the Former Building 728 Site, Facility ID #9-025049

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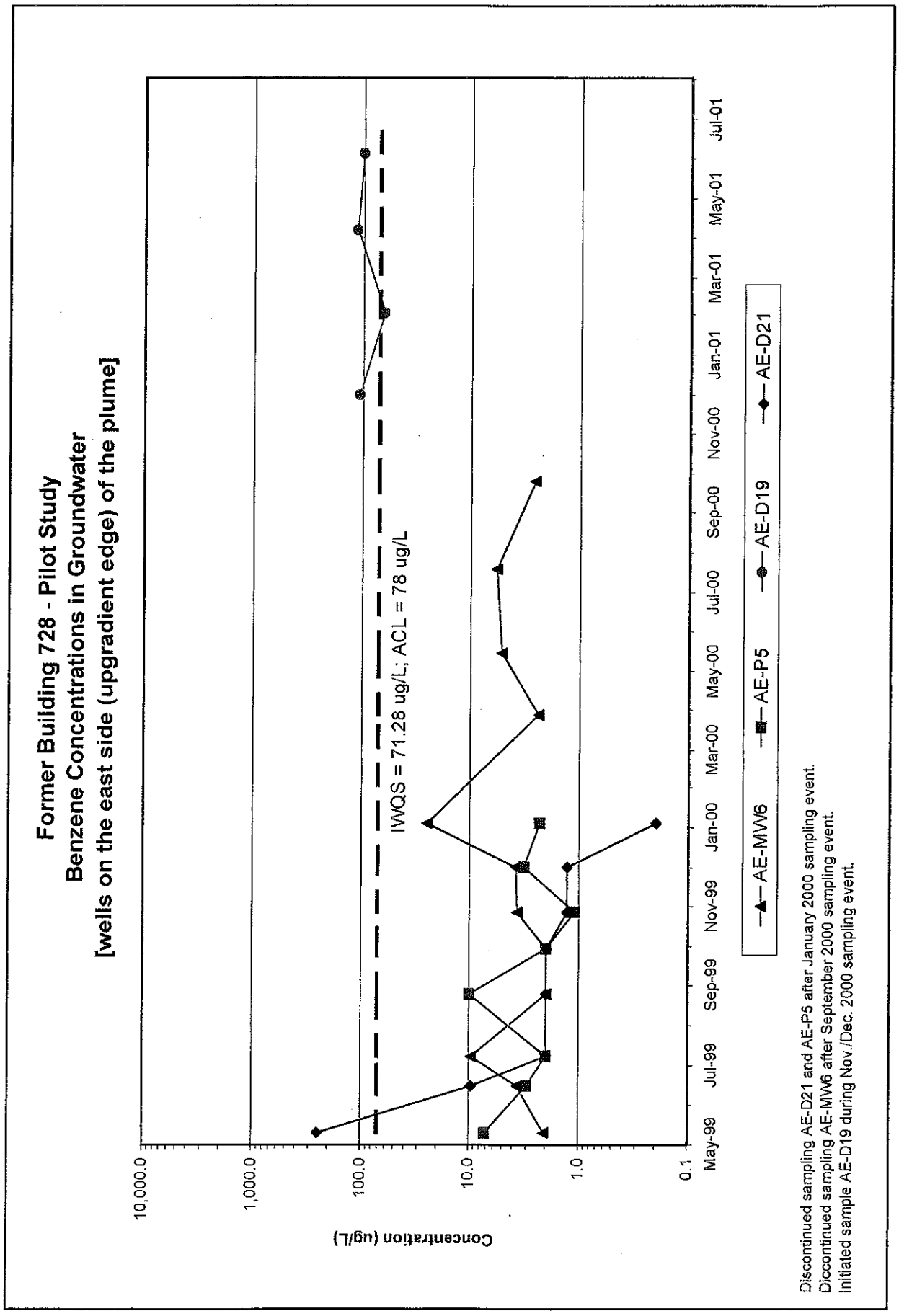

Figure 16a. Trend of Benzene Concentrations in Groundwater at the Former Building 728 Site, Facility ID #9-025049

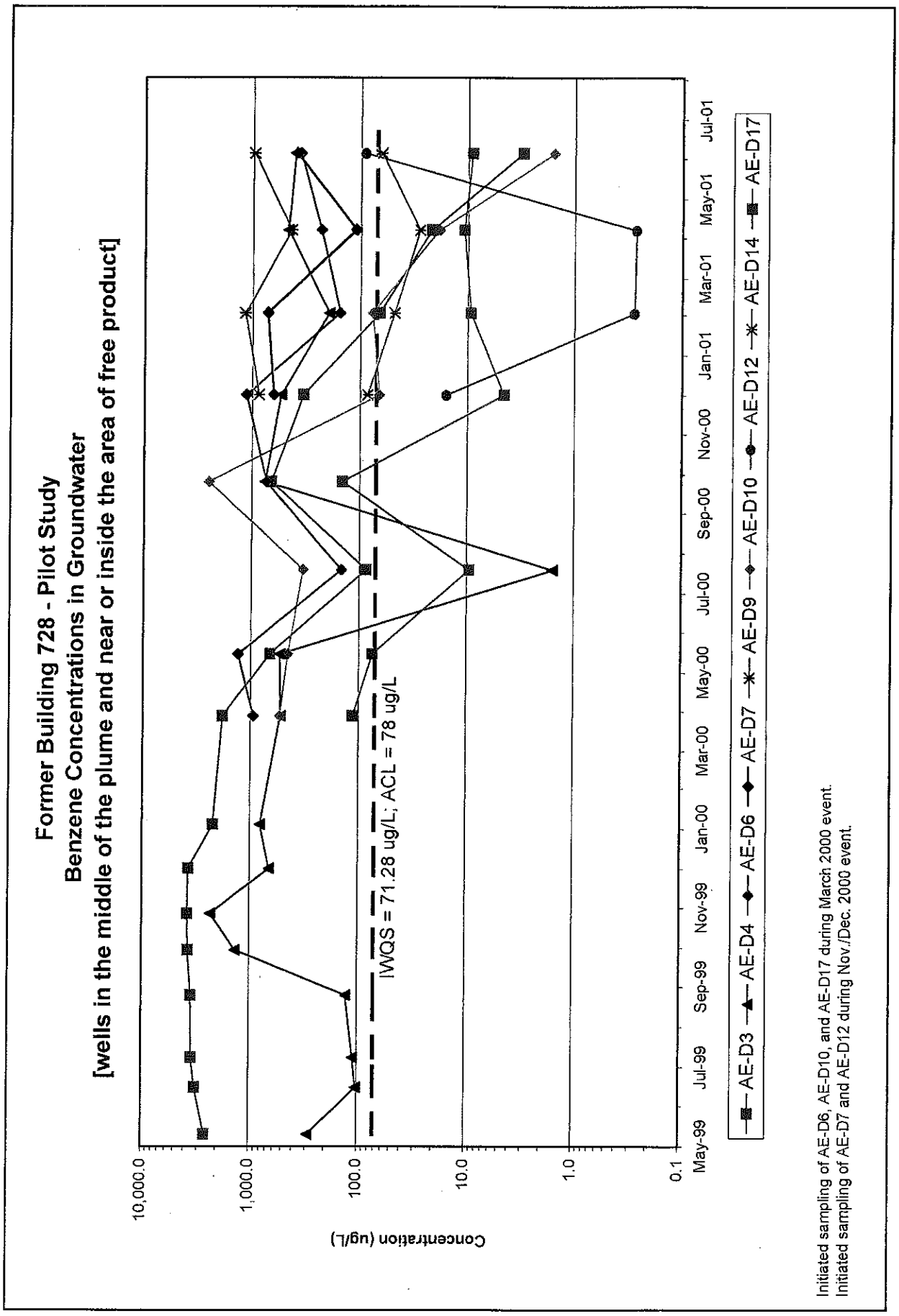

Figure 16b. Trend of Benzene Concentrations in Groundwater at the Former Building 728 Site, Facility ID #9-025049

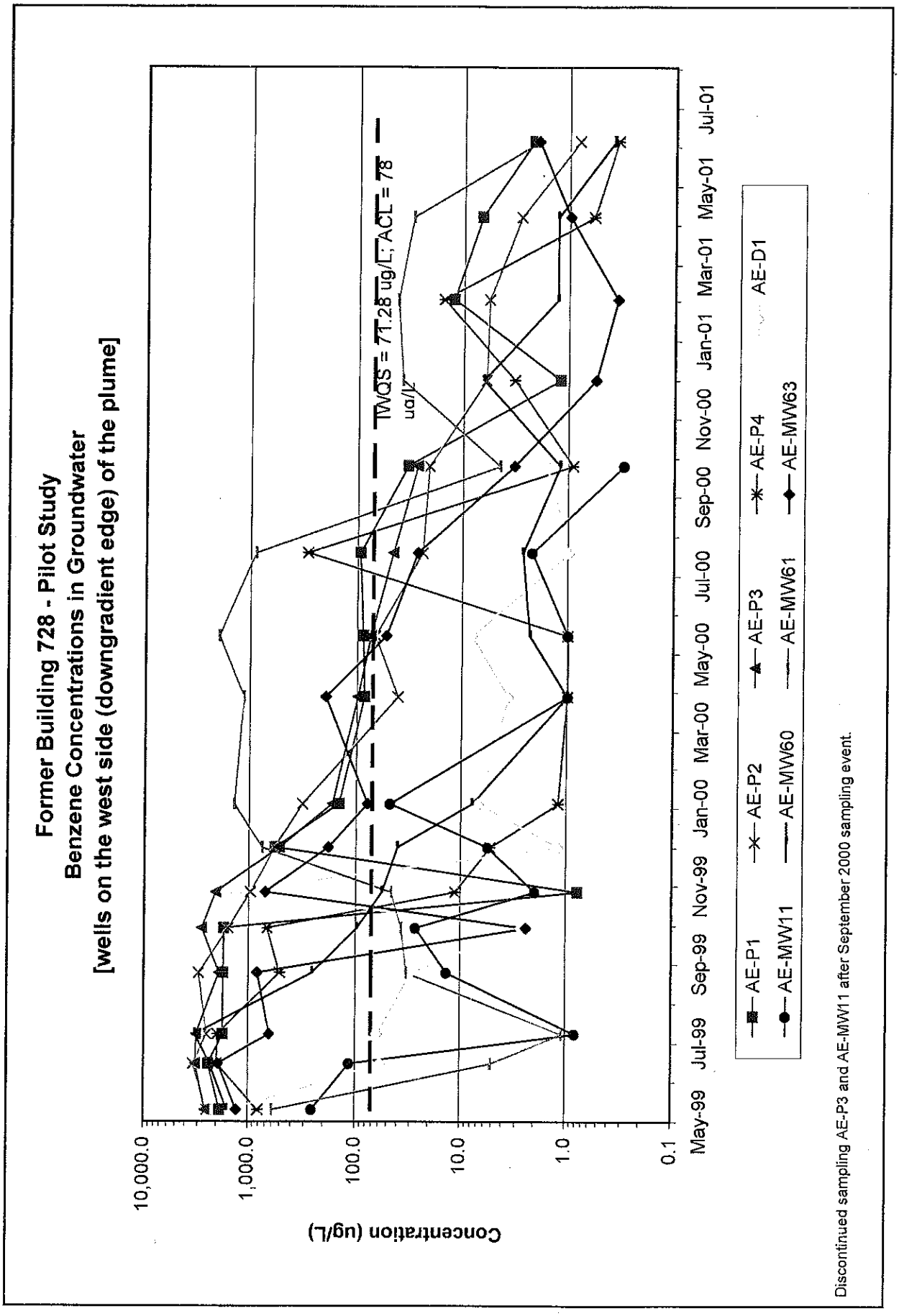

Figure 16c. Trend of Benzene Concentrations in Groundwater at the Former Building 728 Site, Facility ID #9-025049

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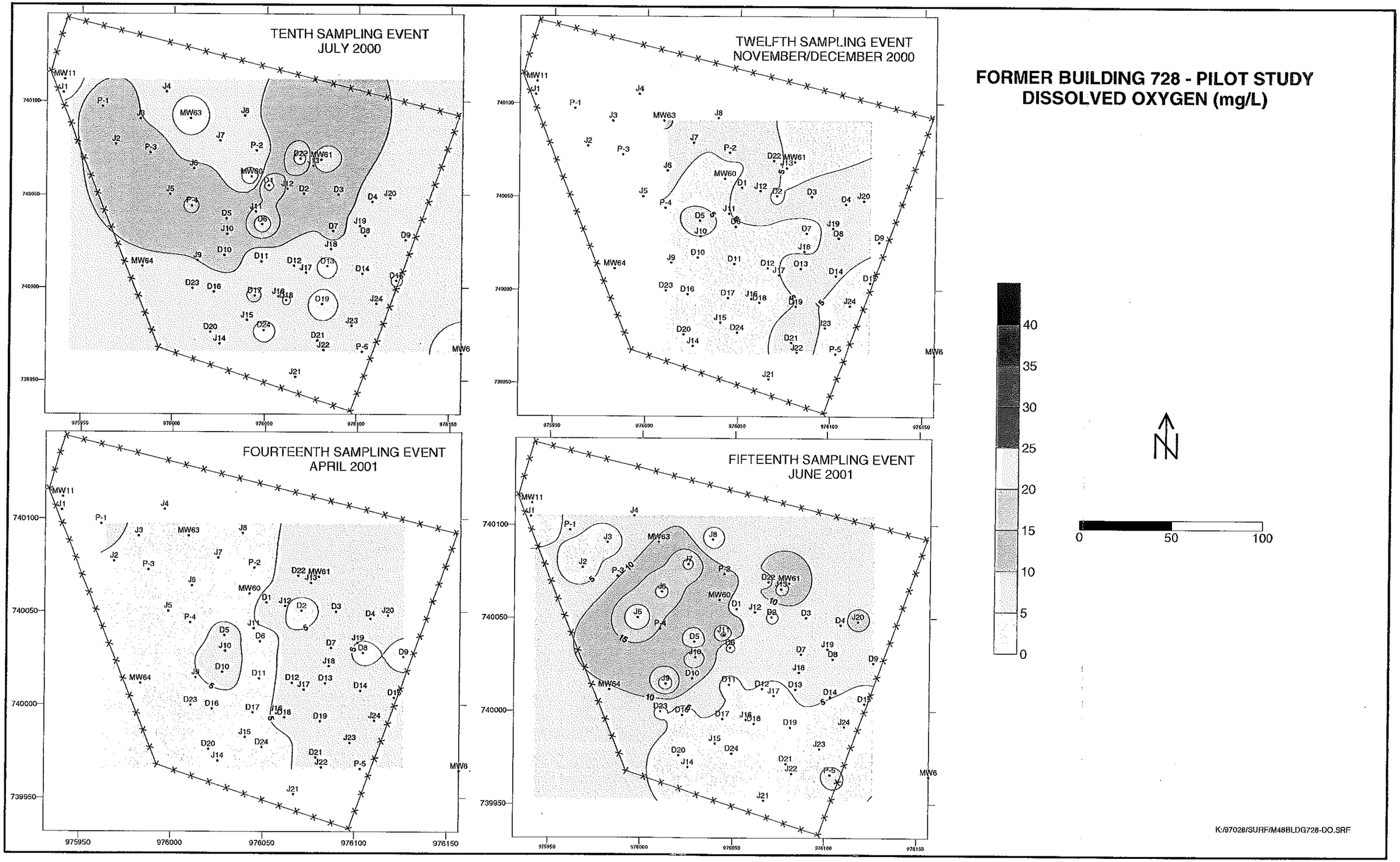

Figure 17. Dissolved Oxygen in Groundwater at the Former Building 728 Site, Facility ID #9-025049

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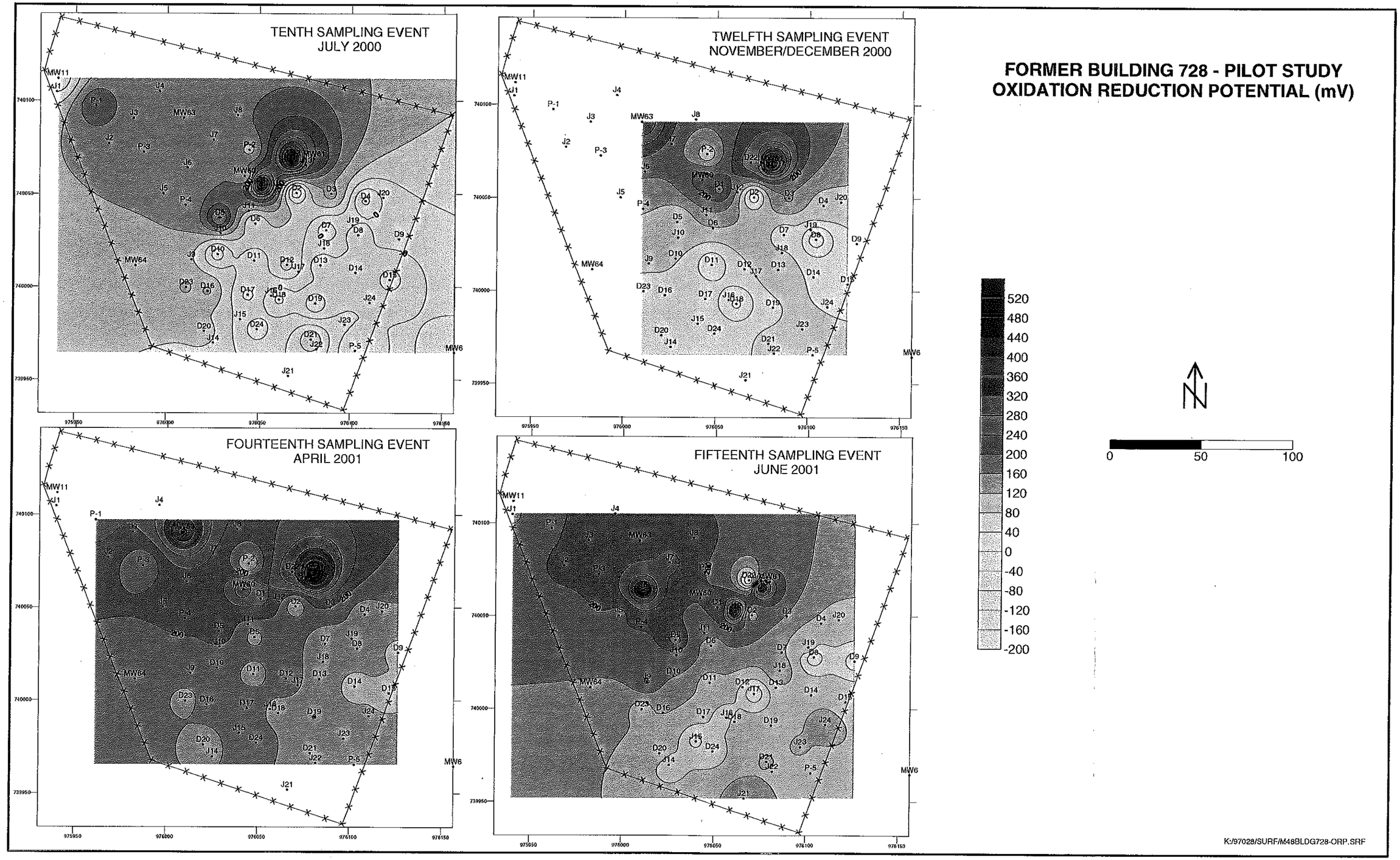

Figure 18. Oxidation Reduction Potential in Groundwater at the Former Building 728 Site, Facility ID #9-025049

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APPENDIX II

TABLES

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Table 1. Well Construction Details

Boring Number	Date Installed	Boring Depth (feet BGS)	Screened Interval (feet BGS)	Type of Completion	Coordinates (NAD 83)		Elevation (NAVD 88)	
					Northing	Easting	Ground Surface	Top of Casing
Product Delineation Points								
D1	05/06/99	12.5	2.0 – 12.0	3/4-inch PVC	740054.93	976051.27	19.7	20.07
D2	05/06/99	12.5	2.0 – 12.0	3/4-inch PVC	740050.53	976070.34	19.3	19.60
D3	05/06/99	12.5	2.0 – 12.0	3/4-inch PVC	740050.07	976089.18	19.4	19.69
D4	05/06/99	12.5	2.0 – 12.0	3/4-inch PVC	740046.22	976107.88	19.4	19.66
D5	05/06/99	12.5	2.0 – 12.0	3/4-inch PVC	740037.25	976028.69	19.5	19.88
D6	05/06/99	12.5	2.0 – 12.0	3/4-inch PVC	740034.06	976047.99	19.3	19.66
D7	05/05/99	13.0	2.0 – 12.0	3/4-inch PVC	740030.52	976086.58	19.0	19.35
D8	05/05/99	13.0	2.0 – 12.0	3/4-inch PVC	740027.93	976103.98	19.3	19.60
D9	05/06/99	12.5	2.0 – 12.0	3/4-inch PVC	740025.75	976125.99	19.7	20.02
D10	05/06/99	12.5	2.0 – 12.0	3/4-inch PVC	740017.47	976027.72	19.2	19.57
D11	05/06/99	12.5	2.0 – 12.0	3/4-inch PVC	740014.16	976047.52	19.2	19.57
D12	05/06/99	12.5	2.0 – 12.0	3/4-inch PVC	740011.86	976065.41	18.8	19.14
D13	05/05/99	12.9	2.0 – 12.0	3/4-inch PVC	740011.61	976083.60	18.7	19.02
D14	05/05/99	13.0	2.0 – 12.0	3/4-inch PVC	740007.57	976102.71	19.2	19.57
D15	05/06/99	13.0	2.0 – 12.0	3/4-inch PVC	740003.89	976121.23	20.0	20.41
D16	05/06/99	12.5	2.0 – 12.0	3/4-inch PVC	739997.75	976022.32	18.8	19.13
D17	05/06/99	12.5	2.0 – 12.0	3/4-inch PVC	739995.73	976044.19	18.9	19.22
D18	05/06/99	12.5	2.0 – 12.0	3/4-inch PVC	739993.17	976061.28	18.8	19.18
D19	05/06/99	12.5	2.0 – 12.0	3/4-inch PVC	739991.20	976080.98	18.8	19.13
D20	05/06/99	12.5	2.0 – 12.0	3/4-inch PVC	739976.07	976020.55	18.5	18.90
D21	05/06/99	13.0	2.0 – 12.0	3/4-inch PVC	739971.67	976078.73	18.8	19.23
D22	05/07/99	12.5	2.0 – 12.0	3/4-inch PVC	740069.38	976068.43	19.9	20.30
D23	05/08/99	13.0	2.5 – 12.5	3/4-inch PVC	739999.74	976010.69	18.7	19.07
D24	05/08/99	12.5	2.5 – 12.5	3/4-inch PVC	739977.16	976049.24	18.5	18.84
Oxygen Injection Points								
J1	05/04/99	15.5	14.5 – 15.5	3/4-inch PVC	740104.80	975939.61	18.8	19.34
J2	05/04/99	15.5	14.5 – 15.5	3/4-inch PVC	740077.21	975968.34	19.2	19.83
J3	05/04/99	15.5	14.5 – 15.5	3/4-inch PVC	740090.75	975981.69	19.4	20.04
J4	05/04/99	15.5	14.5 – 15.5	3/4-inch PVC	740105.14	975995.76	19.4	19.94
J5	05/05/99	15.5	14.5 – 15.5	3/4-inch PVC	740050.31	975998.13	19.5	20.04
J6	05/05/99	15.5	14.5 – 15.5	3/4-inch PVC	740064.10	976011.06	19.7	20.32
J7	05/05/99	15.5	14.5 – 15.5	3/4-inch PVC	740079.00	976025.13	19.9	20.49
J8	05/05/99	15.5	14.5 – 15.5	3/4-inch PVC	740092.29	976038.25	19.8	20.41
J9	05/05/99	15.5	14.5 – 15.5	3/4-inch PVC	740014.69	976013.41	19.0	19.55
J10	05/05/99	15.5	14.5 – 15.5	3/4-inch PVC	740028.91	976029.17	19.4	19.91
J11	05/05/99	15.5	14.5 – 15.5	3/4-inch PVC	740040.97	976044.44	19.5	20.11
J12	05/06/99	15.5	14.5 – 15.5	3/4-inch PVC	740053.18	976061.26	19.2	19.73
J13	05/06/99	15.5	14.5 – 15.5	3/4-inch PVC	740065.56	976075.42	20.0	20.49
J14	05/06/99	15.5	14.5 – 15.5	3/4-inch PVC	739969.84	976025.51	18.8	19.29
J15	05/06/99	15.5	14.5 – 15.5	3/4-inch PVC	739982.53	976040.17	18.7	19.13
J16	05/06/99	15.5	14.5 – 15.5	3/4-inch PVC	739995.29	976056.95	18.9	19.38
J17	05/06/99	15.5	14.5 – 15.5	3/4-inch PVC	740008.13	976071.76	18.8	19.32
J18	05/06/99	15.5	14.5 – 15.5	3/4-inch PVC	740020.77	976085.46	18.9	19.43
J19	05/06/99	15.5	14.0 – 15.0	3/4-inch PVC	740033.25	976101.09	19.3	19.74
J20	05/07/99	15.0	14.0 – 15.0	3/4-inch PVC	740048.06	976117.43	19.8	20.27
J21	05/07/99	13.0	11.2 – 12.2	3/4-inch PVC	739952.01	976066.51	18.7	19.18
J22	05/07/99	13.0	11.5 – 12.5	3/4-inch PVC	739966.45	976081.80	18.9	19.37
J23	05/07/99	14.0	12.5 – 13.5	3/4-inch PVC	739979.58	976097.09	19.2	19.64
J24	05/07/99	15.0	14.0 – 15.0	3/4-inch PVC	739991.47	976110.47	19.5	19.99
J25	12/04/00	15.0	13.9 – 14.9	3/4-inch PVC	740076.54	976090.02	—	—

NOTES:
BGS Below ground surface
PVC Polyvinyl chloride

Table 1. Well Construction Details (continued)

Boring Number	Date Installed	Boring Depth (feet BGS)	Screened Interval (feet BGS)	Type of Completion	Coordinates (NAD 83)		Elevation (NAVD 88)	
					Northing	Easting	Ground Surface	Top of Casing
J26	12/04/00	15.0	13.9 – 14.9	3/4-inch PVC	740054.12	976096.40	—	—
J27	12/04/00	15.0	13.9 – 14.9	3/4-inch PVC	740041.89	976075.82	—	—
Observation Points								
P1	05/06/99	12.6	2.5 – 12.5	3/4-inch PVC	740097.33	975961.13	19.0	19.42
P2	05/07/99	12.6	2.5 – 12.5	3/4-inch PVC	740073.70	976044.53	20.0	20.34
P3	05/07/99	12.6	2.5 – 12.5	3/4-inch PVC	740072.60	975987.25	19.5	19.91
P4	05/07/99	12.5	2.0 – 12.0	3/4-inch PVC	740044.16	976010.15	19.4	19.79
P5	05/08/99	13.0	2.5 – 12.5	3/4-inch PVC	739965.59	976102.85	19.5	19.84
Vapor Test Points								
V1	05/06/99	12.3	2.2 – 12.2	3/4-inch PVC	739822.95	976270.18	19.3	19.54
V2	05/07/99	12.2	2.1 – 12.1	3/4-inch PVC	739806.61	976282.91	19.3	19.20
VW-1	05/09/99	12.3	11.8 – 11.8	3/4-inch PVC	739818.57	976268.30	19.4	19.29
VEW-1	05/17/99	6.0	2.0 – 6.0	3/4-inch PVC	739816.06	976264.79	19.4	19.60
P-1	05/17/99	6.0	2.0 – 6.0	3/4-inch PVC	739816.70	976261.58	19.3	20.02
P-2	05/17/99	6.0	2.0 – 6.0	3/4-inch PVC	739817.27	976259.08	19.3	20.22
Product Recovery Wells								
MW-8A	06/02/99	14.5	4.0 – 14.0	2-inch PVC	740034.10	976071.08	19.0	18.67
PR-1	06/02/99	14.5	3.6 – 13.6	2-inch PVC	740026.22	976090.39	18.9	18.64
PR-2	06/02/99	14.5	4.0 – 14.0	2-inch PVC	740008.71	976055.87	18.9	18.54
PR-3	10/09/99	18.0	2.0 – 17.0	2-inch PVC	740000.94	976026.62	18.9	18.68
PR-4	10/09/99	18.0	2.0 – 17.0	2-inch PVC	740020.46	976024.53	19.1	19.01
PR-5	10/09/99	18.0	2.0 – 17.0	2-inch PVC	740036.19	976043.98	19.4	19.11
PR-6	04/07/01	13.0	2.5 – 12.5	2-inch PVC	740050.15	976089.18	19.4	19.13
PR-7	04/07/01	15.0	3.0 – 13.0	2-inch PVC	740015.50	976029.74	19.2	18.97
CAP–Part B Monitoring Wells (utilized during corrective action)								
MW-6	1996	~13.0	2.9 – 12.9	2-inch PVC	739964.64	976156.50	19.6	19.40
MW-8	1996	~13.5	3.5 – 13.5	2-inch PVC	740030.55	976072.57	19.0	18.58
MW-11	1996	~12.5	2.3 – 12.3	2-inch PVC	740111.90	975940.19	18.4	18.09
MW-59	02/26/97	14.0	2.0 – 12.0	2-inch PVC	739989.17	976041.23	18.8	18.61
MW-60	02/26/97	15.0	3.0 – 13.0	2-inch PVC	740059.72	976042.02	19.9	19.70
MW-61	02/26/97	15.0	3.0 – 13.0	2-inch PVC	740068.72	976079.81	20.0	19.73
MW-63	02/26/97	15.0	4.0 – 14.0	2-inch PVC	740090.82	976009.04	19.7	19.55
MW-64	02/27/97	15.0	3.0 – 13.0	2-inch PVC	740011.54	975983.20	18.4	18.18

NOTES:
BGS Below ground surface
PVC Polyvinyl chloride

Table 2. Soil Analytical Results

Sample Location	Sample ID	Depth (feet BGS)	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH (mg/kg)
Product Delineation Points — Pre-Pilot Study Baseline Results – May 1999									
D1	AED111	7.2 – 8.2	05/06/99	***0.206 J***	0.181 J	0.297 J	0.952 U	0.684	15.2 U
D3	AED311	7.0 – 8.0	05/06/99	***0.111 J***	0.078 =	**0.651** =	2.58 =	3.42	12.4 U
D4	AED411	8.0 – 9.1	05/06/99	***0.0718 J***	0.128 J	0.281 J	0.512 J	0.993	13.5 J
D5	AED511	6.9 – 8.9	05/06/99	***0.161 J***	**0.518** =	0.0791 =	0.38 J	1.1381	48.4 J
D10	AEDA11	7.0 – 8.0	05/06/99	***0.625*** =	**9.76** =	**4.52** =	***23.2*** =	38.105	25.7 =
D13	AEDD11	8.0 – 8.8	05/05/99	0.0019 U	0.0019 U	0.0019 U	0.0052 U	ND	68.6 =
D15	AEDF11	8.0 – 8.8	05/06/99	***0.0144 J***	0.0057 J	0.643 J	0.283 J	0.9461	701 =
D17	AEDK11	7.0 – 8.0	05/06/99	**0.0098** =	0.0019 U	0.0045 =	0.005 U	0.0143	12.8 J
D18	AEDL11	10.0 – 10.7	05/06/99	0.0016 J	0.0086 =	0.0104 =	0.0466 =	0.0672	11.8 U
D21	AEDM11	8.0 – 8.5	05/06/99	0.0019 U	0.0019 U	0.0019 U	0.0048 U	ND	22.8 =
D6	AED611	7.1 – 8.1	05/06/99	[a]	[a]	[a]	[a]	[a]	469 =
D7	AED711	8.0 – 9.0	05/06/99	[a]	[a]	[a]	[a]	[a]	2,000 =
D8	AED811	8.0 – 9.0	05/06/99	[a]	[a]	[a]	[a]	[a]	769 =
D9	AED911	4.5 – 6.5	05/06/99	[a]	[a]	[a]	[a]	[a]	405 =
D11	AEDB11	6.5 – 7.5	05/06/99	[a]	[a]	[a]	[a]	[a]	621 =
D12	AEDC11	7.8 – 8.8	05/06/99	[a]	[a]	[a]	[a]	[a]	127 =
D14	AEDE11	8.0 – 8.6	05/06/99	[a]	[a]	[a]	[a]	[a]	92.2 =
D16	AEDG11	6.2 – 7.2	05/06/99	[a]	[a]	[a]	[a]	[a]	578 =
Observation Points – Pre-Pilot Study Baseline Results – May 1999									
P1	AEP111	4.0 – 6.0	05/07/99	0.002 U	0.002 U	0.002 U	0.003 U	ND	119 =
P2	AEP211	4.0 – 6.0	05/07/99	0.0032 U	0.0032 U	0.0032 U	0.0049 U	ND	59.5 =
P3	AEP311	5.0 – 6.0	05/07/99	0.002 U	0.002 U	0.002 U	0.003 U	ND	1.61 U
P4	AEP411	5.4 – 6.4	05/07/99	0.0022 U	0.0022 U	0.0022 U	0.0032 U	ND	66.1 =
P5	AEP511	4.0 – 6.0	05/08/99	0.0028 U	0.0028 U	0.0028 U	0.0012 J	0.0012	105 =
Vapor Test Wells – Pre-Pilot Study Baseline Results – May 1999									
V1	AEV111	8.0 – 9.3	05/06/99	**0.0052 J**	0.0046 J	0.520 =	0.157 J	0.6868	[b]
V2	AEV211	8.0 – 9.2	05/07/99	**0.0069 J**	0.0010 J	0.0783 J	0.148 J	0.2342	[b]
VW-1	AEVW11	5.0 – 7.0	05/09/99	***0.0219 J***	0.0020 U	0.721 J	1.16 J	1.9029	[b]
GUST Soil Threshold Levels (Table A, Column 1)				0.005	0.37	0.40	20	NRC	NRC
Alternate Threshold Levels				0.012	58.5	11.1	20	—	—

NOTES:

Bold values exceed GUST soil threshold levels (Table A, Column 1).
Italic values exceed alternate threshold levels (Appendix VI).

[a] Samples were analyzed for TPH only.
[b] Samples were also analyzed for SVOCs, TPH-DRO, and TPH-GRO, with the results presented in Appendix V.

BGS Below ground surface
BTEX Benzene, toluene, ethylbenzene, and xylenes
DRO Diesel-range organics
GRO Gasoline-range organics
GUST Georgia Underground Storage Tank
ND Not detected
NRC No regulatory criteria
SVOC Semivolatile organic compound
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 3. Groundwater Analytical Results

Sample Location	Sample ID	Screened Interval (feet BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)
CAP–Part B Investigation – March 1997								
MW1	MW0102	3.2 – 13.2	03/31/97	1 U	1 U	1 U	2 U	ND
MW2	MW0202	3.8 – 13.8	03/31/97	1 U	1 U	1 U	2 U	ND
MW3	MW0302	2.6 – 12.6	03/31/97	4.2 =	1 U	5.3 =	2 U	9.5
MW5	MW0502	3.3 – 13.3	03/31/97	1 U	1 U	1 U	2 U	ND
MW6	MW0602	2.9 – 12.9	04/01/97	24 =	6.4 =	54 =	27 =	111.4
MW9	MW0902	3.1 – 13.1	03/31/97	1 U	1 U	1 U	2 U	ND
MW10	MW1002	2.9 – 12.9	03/31/97	1 U	1 U	1 U	2 U	ND
MW11	MW1102	2.3 – 12.3	04/01/97	***1,700*** =	600 =	380 =	2,300 =	4,980
MW12	MW1202	2.9 – 12.9	04/01/97	56 J	28 J	40 J	50 UJ	124
MW13	MW1302	4.0 – 14.0	04/01/97	1.4 =	1 U	1 U	2 U	1.4
MW14	MW1402	4.0 – 14.0	04/01/97	1 U	1 U	1 U	2 U	ND
MW55	MW5501	2.0 – 12.0	03/31/97	1 U	1 U	1 U	2 U	ND
MW56	MW5601	1.4 – 11.4	03/31/97	17 =	3.3 =	9.1 =	34 =	63.4
MW57	MW5701	2.0 – 12.0	03/31/97	24 =	49 =	40 =	170 =	283
MW58	MW5801	2.0 – 12.0	03/31/97	41 J	11 J	16 J	94 J	162
MW60	MW6001	3.0 – 13.0	04/01/97	***1,400*** =	290 =	280 =	1,600 =	3,570
MW61	MW6101	3.0 – 13.0	04/01/97	***910 J***	25 UJ	140 J	760 J	1,810
MW63	MW6001	4.0 – 14.0	04/01/97	***2,400*** =	300 =	460 =	2,000 =	5,160
MW64	MW6101	3.0 – 13.0	04/01/97	***81*** =	50 =	36 =	320 =	487
MW65	MW6001	3.0 – 13.0	04/01/97	1 U	1 U	1 U	2 U	ND
MW66	MW6101	35.6 – 40.6	04/01/97	1 U	1 U	1 U	2 U	ND
MW67	MW6001	33.0 – 38.0	04/01/97	1 U	1 U	1 U	2 U	ND
Pre-Pilot Study Baseline Results – May 1999								
MW6	AE0612	2.9 – 12.9	05/10/99	2.1 J	2 U	2 U	3 U	2.1
MW11	AE1112	4.0 – 14.0	05/10/99	***256*** =	21.1 =	32.1 =	197 =	506.2
MW60	AE6012	3.0 – 13.0	05/10/99	***1,610*** =	122 =	300 =	1,330 =	3,362
MW61	AE6112	3.0 – 13.0	05/10/99	***612*** =	15 J	121 =	465 =	1,213
MW63	AE6312	4.0 – 14.0	05/10/99	***1,310*** =	113 =	154 =	710 =	2,287
MW64	AE6412	3.0 – 13.0	05/10/99	***107*** =	170 =	73.3 =	706 =	1,056.3
D1	AED112	2.0 – 12.0	05/10/99	***1,460*** =	111 =	284 =	725 =	2,580
D3	AED312	2.0 – 12.0	05/10/99	***2,580 J***	853 =	521 =	1,480 =	5,434
D4	AED412	2.0 – 12.0	05/10/99	***288*** =	76.4 =	89.5 =	211 =	664.9
D21	AEDM12	2.0 – 12.0	05/10/99	***251*** =	8.3 J	784 =	2,340 =	3,383.3
P1	AEP112	2.5 – 12.5	05/07/99	***1,890*** =	2,390 =	344 =	2,100 =	6,724
P2	AEP212	2.5 – 12.5	05/07/99	***2,510*** =	2,070 =	447 =	1,980 =	7,007
P3	AEP312	2.5 – 12.5	05/07/99	***2,600*** =	4,250 =	578 =	3,360 =	10,788
P4	AEP412	2.0 – 12.0	05/07/99	***823*** =	1,950 =	237 =	1,510 =	4,520
P5	AEP512	2.5 – 12.5	05/08/99	7.2 J	10 U	208 =	600 =	745.8
In-Stream Water Quality Standard (GA EPD Chapter 391-3-6)				71.28	200,000	28,718	NRC	NRC
Alternate Concentration Limit				78	—	—	—	—

NOTES:

Bold values exceed In-Stream Water Quality Standard.
Italic values exceed alternate concentration limit.

BGS Below ground surface
BTEX Benzene, toluene, ethylbenzene, and xylenes
GA EPD Georgia Environmental Protection Division
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 3. Groundwater Analytical Results (continued)

Sample Location	Sample ID	Screened Interval (feet BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)
First Sampling Event – June 1999								
MW6	AE0622	2.9 – 12.9	06/15/99	3.7 =	0.56 J	3.5 =	1.9 J	9.66
MW11	AE1122	4.0 – 14.0	06/15/99	***114*** =	17.2 =	4.7 =	37.1 =	173
MW60	AE6022	3.0 – 13.0	06/15/99	***2,360*** =	180 =	411 =	1,900 =	4,851
MW61	AE6122	3.0 – 13.0	06/15/99	5.2 =	2 U	0.73 J	7.6 =	13.53
MW63	AE6322	4.0 – 14.0	06/15/99	***1,960*** =	226 =	245 =	1,140 =	3,571
MW64	AE6422	3.0 – 13.0	06/15/99	***149*** =	183 =	90.5 =	814 =	1,236.5
D1	AED122	2.0 – 12.0	06/15/99	58.5 =	2 U	3.7 =	16.7 =	78.9
D3	AED322	2.0 – 12.0	06/15/99	***3,180*** =	1,300 =	1,150 =	3,320 =	8,950
D4	AED422	2.0 – 12.0	06/15/99	***104*** =	50.3 =	25.5 =	126 =	305.8
D21	AEDM22	2.0 – 12.0	06/15/99	9.7 =	1.4 J	49.6 =	106 =	166.7
P1	AEP122	2.5 – 12.5	06/15/99	***2,420*** =	4,660 =	523 =	2,790 =	10,393
P2	AEP222	2.5 – 12.5	06/15/99	***3,370*** =	3,400 =	709 =	3,120 =	10,599
P3	AEP322	2.5 – 12.5	06/15/99	***3,200*** =	6,720 =	789 =	4,430 =	15,139
P4	AEP422	2.0 – 12.0	06/15/99	***2,010*** =	4,750 =	708 =	4,490 =	11,958
P5	AEP522	2.5 – 12.5	06/15/99	3 J	10 U	534 =	1,720 =	2,257
Second Sampling Event – July 1999								
MW6	AE0632	2.9 – 12.9	07/08/99	9.6 =	2 U	29.6 =	6 U	39.2
MW11	AE1132	4.0 – 14.0	07/08/99	0.82 J	2 U	2 U	6 U	2.82
MW60	AE6032	3.0 – 13.0	07/08/99	***3,260*** =	197 =	531 =	2,720 =	6,708
MW61	AE6132	3.0 – 13.0	07/08/99	1.1 J	0.56 J	2 U	1.3 J	2.96
MW63	AE6332	4.0 – 14.0	07/08/99	***648*** =	88.1 =	135 =	523 =	1,394.1
MW64	AE6432	3.0 – 13.0	07/08/99	***85.4*** =	154 =	72.3 =	624 =	935.7
D1	AED132	2.0 – 12.0	07/08/99	62.7 =	5 =	10.9 =	51.3 =	129.9
D3	AED332	2.0 – 12.0	07/08/99	***3,430*** =	3,830 =	1,250 =	4,460 =	12,970
D4	AED432	2.0 – 12.0	07/08/99	***111 J***	612 =	533 =	3180 =	4,436
D21	AEDM32	2.0 – 12.0	07/08/99	2 U	0.95 J	0.87 J	3.1 J	6.92
P1	AEP132	2.5 – 12.5	07/08/99	***1,770*** =	3,820 =	402 =	2,050 =	8,042
P2	AEP232	2.5 – 12.5	07/08/99	***2,540*** =	1,600 =	565 =	2,170 =	6,875
P3	AEP332	2.5 – 12.5	07/08/99	***3,150*** =	8,020 =	1,030 =	5,090 =	17,290
P4	AEP432	2.0 – 12.0	07/08/99	***1,990*** =	6,080 =	789 =	4,610 =	13,469
P5	AEP532	2.5 – 12.5	07/08/99	2 U	0.62 J	9.2 =	27.9 =	37.72
In-Stream Water Quality Standard (GA EPD Chapter 391-3-6)				71.28	200,000	28,718	NRC	NRC
Alternate Concentration Limit				78	—	—	—	—

NOTES:

Bold values exceed In-Stream Water Quality Standard.
Italic values exceed alternate concentration limit.
BGS Below ground surface
BTEX Benzene, toluene, ethylbenzene, and xylenes
GA EPD Georgia Environmental Protection Division
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 3. Groundwater Analytical Results (continued)

Sample Location	Sample ID	Screened Interval (feet BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)
Third Sampling Event – August 1999								
MW6	AE0642	2.9 – 12.9	08/25/99	2 U	2 U	9.2 =	1.8 J	11
MW11	AE1142	4.0 – 14.0	08/25/99	13.7 =	2 U	1.3 J	10.1 =	25.1
MW60	AE6042	3.0 – 13.0	08/24/99	***257*** =	10 U	69.4 =	335 =	661.4
MW61	AE6142	3.0 – 13.0	08/25/99	33.1 =	0.56 J	4.4 =	11.2 =	49.26
MW63	AE6342	4.0 – 14.0	08/24/99	***844*** =	46.8 =	124 =	542 =	1,556.8
MW64	AE6442	3.0 – 13.0	08/24/99	19.8 =	0.71 J	21.9 =	109 =	151.41
D1	AED142	2.0 – 12.0	08/24/99	30.6 =	2 U	2 U	6 U	30.6
D3	AED342	2.0 – 12.0	08/24/99	***3,460*** =	2,330 =	1,530 =	4,550 =	11,870
D4	AED442	2.0 – 12.0	08/24/99	***130*** =	10 U	50.8 =	60.1 =	241
D21	AEDM42	2.0 – 12.0	08/24/99	2 U	2 U	0.62 J	0.86 J	1.48
P1	AEP142	2.5 – 12.5	08/24/99	***1,770*** =	3140 =	484 =	2,430 =	7,824
P2	AEP242	2.5 – 12.5	08/24/99	***3,020*** =	960 =	686 =	2,440 =	7,106
P3	AEP342	2.5 – 12.5	08/24/99	***1,940*** =	3,890 =	496 =	2,590 =	8,916
P4	AEP442	2.0 – 12.0	08/24/99	***516*** =	1,530 =	309 =	2,080 =	4,435
P5	AEP542	2.5 – 12.5	08/24/99	10 U	10 U	65.4 =	185 =	250.4
Fourth Sampling Event – September 1999								
MW6	AE0652	2.9 – 12.9	09/29/99	2 U	2 U	4.1 =	6 U	4.1
MW11	AE1152	4.0 – 14.0	09/29/99	27 =	15.5 =	3.8 =	20.1 =	66.4
MW60	AE6052	3.0 – 13.0	09/29/99	***98.2*** =	1.4 J	62.8 =	130 =	292.4
MW61	AE6152	3.0 – 13.0	09/29/99	37.4 =	2 U	4.8 =	9.4 =	51.6
MW63	AE6352	4.0 – 14.0	09/29/99	2.4 =	2 U	2 U	0.85 J	3.25
MW64	AE6452	3.0 – 13.0	09/29/99	4 =	2 U	3.8 =	18.6 =	26.4
D1	AED152	2.0 – 12.0	09/29/99	2.7 =	2 U	2 U	6 U	2.7
D3	AED352	2.0 – 12.0	09/29/99	***3,710*** =	1,840 =	1,910 =	4,940 =	12,400
D4	AED452	2.0 – 12.0	09/29/99	***1,360*** =	22.6 =	220 =	263 =	1,865.6
D21	AEDM52	2.0 – 12.0	09/29/99	2 U	2 U	0.6 J	0.79 J	1.39
P1	AEP152	2.5 – 12.5	09/29/99	***1,740*** =	3,360 =	431 =	2,470 =	8,001
P2	AEP252	2.5 – 12.5	09/29/99	***1,590*** =	273 U	405 =	1,390 =	3,385
P3	AEP352	2.5 – 12.5	09/29/99	***2,810*** =	5,680 =	838 =	4,550 =	13,878
P4	AEP452	2.0 – 12.0	09/29/99	***682*** =	443 =	239 =	1,110 =	2,474
P5	AEP552	2.5 – 12.5	09/29/99	2 U	2 U	2.6 =	7.6 =	7.6
In-Stream Water Quality Standard (GA EPD Chapter 391-3-6)				71.28	200,000	28,718	NRC	NRC
Alternate Concentration Limit				78	—	—	—	—

NOTES:

Bold values exceed in-stream water quality standard
Italic values exceed alternate concentration limit

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 3. Groundwater Analytical Results (continued)

Sample Location	Sample ID	Screened Interval (feet BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)
Fifth Sampling Event – October 1999								
MW6	AE0662	2.9 – 12.9	10/27/99	3.7 =	2 U	7.5 =	1.5 J	12.7
MW11	AE1162	4.0 – 14.0	10/27/99	2 U	2 U	0.55 J	0.53 J	1.08
MW60	AE6062	3.0 – 13.0	10/27/99	56.6 =	2 U	11.5 =	5.5 J	73.6
MW61	AE6162	3.0 – 13.0	10/27/99	46.9 =	8.7 =	7 =	14.6 =	77.2
MW63	AE6362	4.0 – 14.0	10/27/99	***715*** =	50 U	54.7 =	154 =	923.7
MW64	AE6462	3.0 – 13.0	10/27/99	2.2 =	2 U	2.9 =	21 =	26.1
D1	AED162	2.0 – 12.0	10/27/99	***1,650*** =	928 =	316 =	2,140 =	5,034
D3	AED362	2.0 – 12.0	10/27/99	***3,760*** =	2,680 =	2,070 =	6,020 =	14,530
D4	AED462	2.0 – 12.0	10/27/99	***2,320*** =	50 U	369 =	294 =	2,983
D21	AEDM62	2.0 – 12.0	10/27/99	1.3 J	1.6 J	1.9 J	3.3 J	8.1
P1	AEP162	2.5 – 12.5	10/27/99	0.78 J	2 U	2 U	0.84 J	1.62
P2	AEP252	2.5 – 12.5	10/27/99	***977*** =	70.9 =	192 =	698 =	1,937.9
P3	AEP362	2.5 – 12.5	10/27/99	***2,090*** =	3,180 =	632 =	4,120 =	10,022
P4	AEP462	2.0 – 12.0	10/27/99	11.5 =	37 =	40.4 =	216 =	304.9
P5	AEP552	2.5 – 12.5	10/27/99	1.1 J	2 U	6.6 =	17.6 =	25.3
Sixth Sampling Event – December 1999								
MW6	AE0672	2.9 – 12.9	12/01/99	3.8 J	2 UJ	12.2 J	2.6 J	18.6
MW11	AE1172	4.0 – 14.0	12/01/99	5.6 =	2 U	2 U	0.52 J	6.12
MW60	AE6072	3.0 – 13.0	12/01/99	40.8 =	2 U	2.3 =	1.2 J	44.3
MW61	AE6172	3.0 – 13.0	12/01/99	***773*** =	18.6 =	106 =	241 =	1,138.6
MW63	AE6372	4.0 – 14.0	12/01/99	***184*** =	4 U	2.7 J	57.8 =	244.5
MW64	AE6472	3.0 – 13.0	12/01/99	1 J	2 U	0.74 J	8.2 =	9.94
D1	AED172	2.0 – 12.0	12/01/99	1.2 J	2 U	2 U	0.56 J	1.76
D3	AED372	2.0 – 12.0	12/01/99	***3,700*** =	2,950 =	1,770 =	5,710 =	14,130
D4	AED472	2.0 – 12.0	12/01/99	***672*** =	7.5 J	26.9 =	21.6 J	728
D21	AEDM72	2.0 – 12.0	12/01/99	1.3 J	2 U	3 =	0.52 J	4.82
P1	AEP172	2.5 – 12.5	12/01/99	***576*** =	72.7 =	103 =	542 =	1,293.7
P2	AEP272	2.5 – 12.5	12/01/99	***586*** =	97.6 =	204 =	766 =	1,653.6
P3	AEP372	2.5 – 12.5	12/01/99	***523*** =	1,010 =	295 =	2,050 =	3,878
P4	AEP472	2.0 – 12.0	12/01/99	5.3 =	2.6 =	10.7 =	39.3 =	57.9
P5	AEP572	2.5 – 12.5	12/01/99	3.2 =	0.59 J	17.4 =	62 =	83.19
In-Stream Water Quality Standard (GA EPD Chapter 391-3-6)				71.28	200,000	28,718	NRC	NRC
Alternate Concentration Limit				78	—	—	—	—

NOTES:

Bold values exceed In-Stream Water Quality Standard.
Italic values exceed alternate concentration limit.

BGS Below ground surface
BTEX Benzene, toluene, ethylbenzene, and xylenes
GA EPD Georgia Environmental Protection Division
ND Not detected
NRC No regulatory criteria

Laboratory Qualifiers

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Table 3. Groundwater Analytical Results (continued)

Sample Location	Sample ID	Screened Interval (feet BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)
Seventh Sampling Event – January 2000								
MW6	AE0682	2.9 – 12.9	01/04/00	25.1 J	1 UJ	0.88 J	2.2 J	29.18
MW11	AE1182	4.0 – 14.0	01/04/00	48 =	27.3 =	25.9 =	144 =	245.2
MW60	AE6082	3.0 – 13.0	01/04/00	8 =	1 U	6.7 =	3.6 =	18.3
MW61	AE6182	3.0 – 13.0	01/04/00	***1,410*** =	14.8 U	180 =	346 =	1,936
MW63	AE6382	4.0 – 14.0	01/04/00	***78.8*** =	1 U	0.44 J	14.8 =	94.04
MW64	AE6482	3.0 – 13.0	01/04/00	1 =	1 U	0.37 J	8.7 =	10.07
D1	AED182	2.0 – 12.0	01/04/00	7 J	1 UJ	0.14 J	3 UJ	7.14
D3	AED382	2.0 – 12.0	01/04/00	***2,210 J***	1,150 J	1,010 J	3,180 J	7,550
D4	AED482	2.0 – 12.0	01/04/00	***821 J***	2 UJ	113 J	137 J	1,071
D21	AEDM82	2.0 – 12.0	01/04/00	0.2 J	1 U	0.47 J	1 J	1.67
P1	AEP182	2.5 – 12.5	01/04/00	***146 J***	3.8 UJ	40 J	152 J	338
P2	AEP282	2.5 – 12.5	01/04/00	***324 J***	100 UJ	120 J	403 J	847
P3	AEP382	2.5 – 12.5	01/04/00	***168 J***	206 J	116 J	573 J	1,063
P4	AEP482	2.0 – 12.0	01/04/00	1.2 J	1.2 UJ	2.2 J	22.4 J	25.8
P5	AEP582	2.5 – 12.5	01/04/00	2.3 J	5 U	273 =	679 =	954.3
Eighth Sampling Event – March 2000								
MW6	AE0692	2.9 – 12.9	03/28/00	2.4 =	1 U	2.5 U	4 U	2.4
MW11	AE1192	4.0 – 14.0	03/28/00	1 U	1 U	1 U	3.7 U	ND
MW60	AE6092	3.0 – 13.0	03/28/00	1 U	1 U	1.6 U	4.4 U	ND
MW61	AE6192	3.0 – 13.0	03/28/00	***1,160*** =	140 U	213 U	580 U	1,160
MW63	AE6392	4.0 – 14.0	03/28/00	***198*** =	1 U	6.8 U	52.2 U	198
D1	AED192	2.0 – 12.0	03/28/00	3.7 =	20.6 =	6.3 U	60.7 U	24.3
D3	AED392	2.0 – 12.0	03/28/00	***1,820*** =	1,590 =	1,250 =	5,280 =	9,940
D4	AED492	2.0 – 12.0	03/28/00	***532*** =	9.4 =	78.2 =	2,860 =	3,479.6
D6	AED692	2.0 – 12.0	03/28/00	***958*** =	9,350 =	2,510 =	16,700 =	29,518
D10	AED092	2.0 – 12.0	03/28/00	***538*** =	2,820 =	578 =	5,780 =	9,716
D17	AEDG92	2.0 – 12.0	03/28/00	***114 J***	1,550 =	1,320 =	9,840 =	12,824
P1	AEP192	2.5 – 12.5	03/28/00	***85.1*** =	1 U	4.9 U	67.5 U	85.1
P2	AEP292	2.5 – 12.5	03/28/00	41.4 =	4.3 U	34.2 =	191 =	266.6
P3	AEP392	2.5 – 12.5	03/28/00	***98.1*** =	1 U	12.8 =	198 =	308.9
P4	AEP492	2.0 – 12.0	03/28/00	1 U	1 U	1.6 U	7.8 U	ND
In-Stream Water Quality Standard (GA EPD Chapter 391-3-6)				71.28	200,000	28,718	NRC	NRC
Alternate Concentration Limit				78	—	—	—	—

NOTES:

Due to the continuing nondetects in MW64, D19, and P5, sampling was discontinued in these wells in March 2000 in lieu of samples collected from D6, D10, and D17, which are located in the area in which free product recovery is taking place.
Bold values exceed In-Stream Water Quality Standard.
Italic values exceed alternate concentration limit.

BGS	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and xylenes
GA EPD	Georgia Environmental Protection Division
ND	Not detected
NRC	No regulatory criteria

Laboratory Qualifiers

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Table 3. Groundwater Analytical Results (continued)

Sample Location	Sample ID	Screened Interval (feet BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)
Ninth Sampling Event – May 2000								
MW6	AE0602	2.9 – 12.9	05/23/00	5.2 =	0.43 J	7.1 =	3.3 =	16.03
MW11	AE1102	4.0 – 14.0	05/23/00	1 U	1 U	1 U	0.23 J	0.23
MW60	AE6002	3.0 – 13.0	05/23/00	2.3 =	1 U	0.44 J	1.2 J	3.94
MW61	AE6102	3.0 – 13.0	05/23/00	***2,010 J***	152 =	584 =	1,640 =	4,386
MW63	AE6302	4.0 – 14.0	05/23/00	53.4 =	1 U	0.69 J	13.2 =	67.29
D1	AED102	2.0 – 12.0	05/23/00	8.3 =	1 U	0.52 J	4.1 =	12.92
D3	AED302	2.0 – 12.0	05/23/00	***671*** =	130 =	422 =	2,040 =	3,263
D4	AED402	2.0 – 12.0	05/23/00	***541 J***	18.8 =	64.5 =	277 =	901.3
D6	AED602	2.0 – 12.0	05/23/00	***1,320 J***	1,160 J	573 =	4,300 J	7,353
D10	AED002	2.0 – 12.0	05/23/00	***460*** =	2,160 J	360 =	4,110 =	7,090
D17	AEDG02	2.0 – 12.0	05/23/00	**75.4** =	814 =	505 J	2,170 =	3,564.4
P1	AEP102	2.5 – 12.5	05/23/00	***88.7*** =	1 U	7.6 =	83.6 =	179.9
P2	AEP202	2.5 – 12.5	05/23/00	68.2 =	1.4 =	11 =	91.1 =	171.7
P3	AEP302	2.5 – 12.5	05/23/00	**74.3** =	0.31 J	9.3 =	115 =	198.91
P4	AEP402	2.0 – 12.0	05/23/00	1 U	1 U	0.22 J	1.6 J	1.82
Tenth Sampling Event – July 2000								
MW6	AE06A2	2.9 – 12.9	07/19/00	5.8 =	0.43 J	8.8 =	4.3 =	19.33
MW11	AE11A2	4.0 – 14.0	07/19/00	2.2 =	0.52 J	1 U	3.3 =	6.02
MW60	AE60A2	3.0 – 13.0	07/19/00	2.7 =	1 U	1 U	1.6 J	4.3
MW61	AE61A2	3.0 – 13.0	07/19/00	***912*** =	149 =	249 =	679 =	1,989
MW63	AE63A2	4.0 – 14.0	07/19/00	27 =	1 U	1.1 =	9.2 =	37.3
D1	AED1A2	2.0 – 12.0	07/19/00	1 U	0.9 J	1.5 =	3.1 =	5.5
D3	AED3A2	2.0 – 12.0	07/21/00	***87.8*** =	23.7 =	182 =	361 =	654.5
D4	AED4A2	2.0 – 12.0	07/21/00	1.6 =	3.1 =	4.8 =	166 =	175.5
D6	AED6A2	2.0 – 12.0	07/21/00	***149*** =	85.1 =	73.8 =	2,210 =	2,517.9
D10	AED0A2	2.0 – 12.0	07/21/00	***335*** =	3,930 =	565 =	8,490 =	13,320
D17	AEDGA2	2.0 – 12.0	07/21/00	9.6 =	74.9 =	194 =	558 =	836.5
P1	AEP1A2	2.5 – 12.5	07/21/00	***94.9*** =	1.2 =	13.6 =	130 =	239.7
P2	AEP2A2	2.5 – 12.5	07/21/00	24.3 =	8.7 =	4.1 =	49 =	86.1
P3	AEP3A2	2.5 – 12.5	07/21/00	46.2 =	2 =	7.4 =	133 =	188.6
P4	AEP4A2	2.0 – 12.0	07/21/00	***295*** =	2.6 =	11.7 =	17.2 =	326.5
In-Stream Water Quality Standard (GA EPD Chapter 391-3-6)				71.28	200,000	28,718	NRC	NRC
Alternate Concentration Limit				78	—	—	—	—

NOTES:

Due to the continuing nondetects in MW64, D19, and P5, sampling was discontinued in these wells in March 2000 in lieu of samples collected from D6, D10, and D17, which are located in the area in which free product recovery is taking place.

Bold values exceed In-Stream Water Quality Standard.

Italic values exceed alternate concentration limit.

BGS Below ground surface
BTEX Benzene, toluene, ethylbenzene, and xylenes
GA EPD Georgia Environmental Protection Division
ND Not detected
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Table 3. Groundwater Analytical Results (continued)

Sample Location	Sample ID	Screened Interval (feet BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)
Eleventh Sampling Event – September 2000								
MW6	AE06B2	2.9 – 12.9	9/26/00	2.6 =	1 U	6.1 =	1.7 J	10.4
MW11	AE11B2	4.0 – 14.0	9/26/00	0.3 J	1 U	1 U	0.15 J	0.45
MW60	AE60B2	3.0 – 13.0	9/26/00	1.2 =	1 U	0.4 J	0.46 J	2.06
MW61	AE61B2	3.0 – 13.0	9/26/00	4.5 =	13.2 =	2 =	11.7 =	31.4
MW63	AE63B2	4.0 – 14.0	9/26/00	3.3 =	1 U	0.61 J	3.7 =	7.61
D1	AED1B2	2.0 – 12.0	9/26/00	1.6 =	1 U	0.46 J	4.1 =	6.16
D3	AED3B2	2.0 – 12.0	9/26/00	***660 J***	540 J	579 J	1,730 J	3,509
D4	AED4B2	2.0 – 12.0	9/26/00	***763*** =	10 U	46.4 =	91.1 =	900.5
D6	AED6B2	2.0 – 12.0	9/26/00	***742*** =	367 =	195 =	2,410 =	3,714
D10	AED0B2	2.0 – 12.0	9/26/00	***2,500 U***	99,900 =	**60,000** =	617,000 =	776,900
D17	AEDGB2	2.0 – 12.0	9/26/00	***146*** =	3,800 =	1,190 =	5,830 =	10,966
P1	AEP1B2	2.5 – 12.5	9/26/00	33.6 =	2.3 U	1.04 =	49.7 =	93.7
P2	AEP2B2	2.5 – 12.5	9/26/00	21.3 =	2 U	2.3 =	10.5 =	34.1
P3	AEP3B2	2.5 – 12.5	9/26/00	27 =	1 U	3 =	33.3 =	63.3
P4	AEP4B2	2.0 – 12.0	9/26/00	0.91 =	2 U	1.4 =	12.6 =	14.91
Twelfth Sampling Event – November/December 2000								
MW60	AE60C2	3.0 – 13.0	12/01/00	6.5 =	1 U	0.18 J	0.38 J	7.06
MW61	AE61C2	3.0 – 13.0	12/01/00	38.6 =	16.3 =	52.2 =	167 =	274.1
MW63	AE63C2	4.0 – 14.0	12/01/00	0.56 J	1 U	1 U	0.38 J	0.94
D3	AED3C2	2.0 – 12.0	12/01/00	***338*** =	43.3 =	341 =	718 =	1,440.3
D4	AED4C2	2.0 – 12.0	12/01/00	***545*** =	10 U	62.2 =	64.9 =	672.1
D6	AED6C2	2.0 – 12.0	12/01/00	***1,140*** =	80.2 =	66.2 =	860 =	2,146.4
D7	AED7C2	2.0 – 12.0	12/01/00	***633*** =	10 =	870 =	1,010 =	2,523
D9	AED9C2	2.0 – 12.0	12/01/00	***885*** =	25 =	600 =	2,150 =	3,660
D10	AED0C2	2.0 – 12.0	12/01/00	67.2 =	985 =	167 =	7,570 =	8,789.2
D12	AEDBC2	2.0 – 12.0	12/01/00	15.9 =	1 U	2.2 =	4.8 =	22.9
D14	AEDDC2	2.0 – 12.0	12/01/00	***87*** =	0.72 J	96.8 =	113 =	297.52
D17	AEDGC2	2.0 – 12.0	12/01/00	4.6 =	54.5 =	29.7 =	269 =	357.8
D19	AEDJC2	2.0 – 12.0	12/01/00	***108 J***	0.7 J	18.9 =	23.8 =	151.4
P1	AEP1C2	2.5 – 12.5	12/01/00	1.2 =	1 U	0.28 J	1.6 J	3.08
P2	AEP2C2	2.5 – 12.5	12/01/00	6.2 =	1 U	0.81 J	3.4 =	10.41
P4	AEP4C2	2.0 – 12.0	12/01/00	3.3 =	1.9 =	1.4 =	5 =	11.6
In-Stream Water Quality Standard (GA EPD Chapter 391-3-6)				71.28	200,000	28,718	NRC	NRC
Alternate Concentration Limit				78	—	—	—	—

NOTES:

Due to the continuing nondetects in MW64, D19, and P5, sampling was discontinued in these wells in March 2000 in lieu of samples collected from D6, D10, and D17, which are located in the area in which free product recovery is taking place.

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Table 3. Groundwater Analytical Results (continued)

Sample Location	Sample ID	Screened Interval (feet BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)
Thirteenth Sampling Event – February 2001								
MW60	AE60D2	3.0 – 13.0	02/01/01	1.3 J	2 U	0.45 J	0.7 J	2.45
MW61	AE61D2	3.0 – 13.0	02/01/01	43.2 =	12.7 =	144 =	419 =	618.9
MW63	AE63D2	4.0 – 14.0	02/01/01	0.35 J	2 U	0.19 J	0.5 J	1.04
D3	AED3D2	2.0 – 12.0	02/01/01	66.4 J	2,280 =	443 =	7,950 =	10,739.4
D4	AED4D2	2.0 – 12.0	02/01/01	***197*** =	30.5 =	15.9 =	135 =	378.4
D6	AED6D2	2.0 – 12.0	02/01/01	***157*** =	11.5 =	42.4 =	500 =	710.9
D7	AED7D2	2.0 – 12.0	02/01/01	***724*** =	22.5 U	1,010 J	1,160 =	2,894
D9	AED9D2	2.0 – 12.0	02/01/01	***1180*** =	50 U	884 =	2,910 =	4,974
D10	AED0D2	2.0 – 12.0	02/01/01	**78** =	970 =	186 =	2,740 =	3,974
D12	AEDBD2	2.0 – 12.0	02/01/01	0.28 J	2 U	0.39 J	5 =	5.67
D14	AEDDD2	2.0 – 12.0	02/01/01	48.6 =	19.2 =	39.9 =	160 =	267.7
D17	AEDGD2	2.0 – 12.0	02/01/01	9.4 =	21.5 =	12.8 =	174 =	217.7
D19	AEDJD2	2.0 – 12.0	02/01/01	63.8 =	2 U	21.4 =	19.8 =	105
P1	AEP1D2	2.5 – 12.5	02/01/01	12.6 =	2 U	3.7 =	24.4 =	40.7
P2	AEP2D2	2.5 – 12.5	02/01/01	5.8 =	2 U	0.76 J	4.7 J	11.26
P4	AEP4D2	2.0 – 12.0	02/01/01	15.7 =	3.5 U	0.76 J	12.8 =	29.26
Fourteenth Sampling Event – April 2001								
MW60	AE60E2	3.0 – 13.0	04/07/01	1.3 =	0.29 J	1 U	3 U	1.59
MW61	AE61E2	3.0 – 13.0	04/07/01	30.7 =	66 =	101 =	283 =	480.7
MW63	AE63E2	4.0 – 14.0	04/07/01	1 U	0.34 J	1 U	3 U	0.34
D3	AED3E2	2.0 – 12.0	04/08/01	21.8 =	2.7 =	64 =	108 =	196.5
D4	AED4E2	2.0 – 12.0	04/08/01	***476*** =	1.8 J	7.5 J	8.4 J	493.7
D6	AED6E2	2.0 – 12.0	04/08/01	***235*** =	8.5 J	25.7 =	211 =	480.2
D7	AED7E2	2.0 – 12.0	04/08/01	***111*** =	2.4 J	200 =	226 =	539.4
D9	AED9E2	2.0 – 12.0	04/07/01	***443*** =	14.9 =	500 =	1,940 =	2,897.9
D10	AED0E2	2.0 – 12.0	04/07/01	18.6 J	1,440 =	336 =	14,700 =	16,494.6
D12	AEDBE2	2.0 – 12.0	04/08/01	0.27 J	2 U	2 U	5 U	0.27
D14	AEDEE2	2.0 – 12.0	04/07/01	28.5 =	0.64 J	60 =	106 =	195.14
D17	AEDGE2	2.0 – 12.0	04/08/01	10.9 =	0.76 J	0.66 J	43.1 =	55.42
D19	AEDJE2	2.0 – 12.0	04/07/01	***114*** =	1.6 J	33.5 =	124 =	273.1
P1	AEP1E2	2.5 – 12.5	04/07/01	6.8 =	0.34 J	1.5 =	8.1 =	16.74
P2	AEP2E2	2.5 – 12.5	04/07/01	2.9 =	0.28 J	0.26 J	1.1 J	4.54
P4	AEP4E2	2.0 – 12.0	04/07/01	0.59 J	1 U	1 U	0.93 J	1.52
In-Stream Water Quality Standard (GA EPD Chapter 391-3-6)				71.28	200,000	28,718	NRC	NRC
Alternate Concentration Limit				78	—	—	—	—

NOTES:

Due to the continuing nondetects in MW64, D19, and P5, sampling was discontinued in these wells in March 2000 in lieu of samples collected from D6, D10, and D17, which are located in the area in which free product recovery is taking place.

Bold values exceed In-Stream Water Quality Standard.

Italic values exceed alternate concentration limit.

BGS Below ground surface
BTEX Benzene, toluene, ethylbenzene, and xylenes
GA EPD Georgia Environmental Protection Division
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 3. Groundwater Analytical Results (continued)

Sample Location	Sample ID	Screened Interval (feet BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)
Fifteenth Sampling Event – June 2001								
MW60	AE60F2	3.0 – 13.0	6/7/01	0.38 J	2 U	0.16 J	5 U	0.54
MW61	AE61F2	3.0 – 13.0	6/7/01	2 U	2 U	0.21 J	5 U	0.21
MW63	AE63F2	4.0 – 14.0	6/7/01	2 U	2 U	2 U	2 U	ND
AE-D3/PR-6	AER6F2	2.0 – 12.0	6/7/01	3.1 =	2.9 U	12.1 =	29 =	44.2
D4	AED4F2	2.0 – 12.0	6/7/01	***412*** =	10 U	5 J	20.2 J	437.2
D6	AED6F2	2.0 – 12.0	6/7/01	***364*** =	10 U	29.2 =	93.1 =	486.3
D7	AED7F2	2.0 – 12.0	6/7/01	***394*** =	20 U	641 =	586 =	1,621
D9	AED9F2	2.0 – 12.0	6/7/01	***988*** =	28.2 U	688 =	2,540 =	4,216
D10	AED0F2	2.0 – 12.0	6/7/01	1.6 J	10 U	10 U	185 =	186.6
D12	AEDBF2	2.0 – 12.0	6/7/01	***92.1*** =	2 U	0.49 J	13.2 =	105.79
D14	AEDEF2	2.0 – 12.0	6/7/01	64.8 =	2 U	45.5 =	97.4 =	207.7
D17	AEDGF2	2.0 – 12.0	6/7/01	9.2 =	2 U	0.18 J	1.3 J	10.68
D19	AEDJF2	2.0 – 12.0	6/7/01	***100*** =	2 U	39.4 =	33.2 =	172.6
P1	AEP1F2	2.5 – 12.5	6/7/01	2.2 =	2 U	2 U	1.5 J	3.7
P2	AEP2F2	2.5 – 12.5	6/7/01	0.82 J	2 U	0.31 J	0.6 J	1.73
P4	AEP4F2	2.0 – 12.0	6/7/01	0.35 J	2 U	2 U	5 U	0.35
In-Stream Water Quality Standard (GA EPD Chapter 391-3-6)				71.28	200,000	28,718	NRC	NRC
Alternate Concentration Limit				78	—	—	—	—

NOTES:

Due to the continuing nondetects in MW64, D19, and P5, sampling was discontinued in these wells in March 2000 in lieu of samples collected from D6, D10, and D17, which are located in the area in which free product recovery is taking place.

Bold values exceed In-Stream Water Quality Standard.

Italic values exceed alternate concentration limit.

BGS Below ground surface
BTEX Benzene, toluene, ethylbenzene, and xylenes
GA EPD Georgia Environmental Protection Division
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 4. Groundwater Elevations

Well Number	Date Measured	Elevation (feet MSL)		Depth of Screened Interval (feet BGS)	Depth of Free Product (feet BTOC)	Water Depth (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet MSL)
		Ground Surface	Top of Casing					
Baseline Monitoring Event – May 1999								
D1	05/09/99	19.7	20.07	2.0 – 12.0	—	8.71	0	11.36
D2	05/09/99	19.3	19.60	2.0 – 12.0	sheen	7.17	sheen	12.43
D3	05/09/99	19.4	19.69	2.0 – 12.0	—	7.18	0	12.51
D4	05/09/99	19.4	19.66	2.0 – 12.0	—	7.08	0	12.58
D5	05/09/99	19.5	19.88	2.0 – 12.0	sheen	7.51	sheen	12.37
D6	05/09/99	19.3	19.66	2.0 – 12.0	sheen	7.23	sheen	12.43
D7	05/09/99	19.0	19.35	2.0 – 12.0	6.58	7.01	0.43	12.34
D8	05/09/99	19.3	19.60	2.0 – 12.0	6.84	7.22	0.38	12.38
D9	05/09/99	19.7	20.02	2.0 – 12.0	sheen	7.28	sheen	12.74
D10	05/09/99	19.2	19.57	2.0 – 12.0	7.12	7.13	0.01	12.44
D11	05/09/99	19.2	19.57	2.0 – 12.0	7.01	7.19	0.18	12.38
D12	05/09/99	18.8	19.14	2.0 – 12.0	6.37	6.40	0.03	12.74
D13	05/09/99	18.7	19.02	2.0 – 12.0	sheen	5.81	sheen	13.21
D14	05/09/99	19.2	19.57	2.0 – 12.0	sheen	6.41	sheen	13.16
D15	05/09/99	20.0	20.41	2.0 – 12.0	sheen	7.34	sheen	13.07
D16	05/09/99	18.8	19.13	2.0 – 12.0	6.57	6.74	0.17	12.39
D17	05/09/99	18.9	19.22	2.0 – 12.0	6.60	6.61	0.01	12.61
D18	05/09/99	18.8	19.18	2.0 – 12.0	sheen	6.48	sheen	12.70
D19	05/09/99	18.8	19.13	2.0 – 12.0	sheen	5.8	sheen	13.33
D20	05/09/99	18.5	18.90	2.0 – 12.0	sheen	6.27	sheen	12.63
D21	05/09/99	18.8	19.23	2.0 – 12.0	—	5.82	0	13.41
D22	05/09/99	19.9	20.30	2.0 – 12.0	—	7.93	0	12.37
D23	05/09/99	18.7	19.07	2.5 – 12.5	—	6.6	0	12.47
D24	05/09/99	18.5	18.84	2.5 – 12.5	sheen	6.09	sheen	12.75
MW6	05/10/99	19.6	19.40	2.9 – 12.9	—	10.19	0	9.21
MW11	05/10/99	18.4	18.09	2.3 – 12.3	—	9.81	0	8.28
MW60	05/10/99	19.9	19.70	3.0 – 13.0	—	10.99	0	8.71
MW61	05/10/99	20.0	19.73	3.0 – 13.0	—	11.60	0	8.13
MW63	05/10/99	19.7	19.55	4.0 – 14.0	—	11.03	0	8.52
MW64	05/10/99	18.4	18.18	3.0 – 13.0	—	10.20	0	7.98

NOTES:

BGS Below ground surface
BTOC Below top of casing
MSL Mean sea level

Table 4. Groundwater Elevations (continued)

Well Number	Date Measured	Elevation (feet MSL)		Depth of Screened Interval (feet BGS)	Depth of Free Product (feet BTOC)	Water Depth (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet MSL)
		Ground Surface	Top of Casing					
First Sampling Event – June 1999								
D1	06/14/99	19.7	20.07	2.0 – 12.0	—	7.68	0	12.39
D2	06/14/99	19.3	19.60	2.0 – 12.0	—	7.19	0	12.41
D3	06/14/99	19.4	19.69	2.0 – 12.0	—	7.19	0	12.50
D4	06/14/99	19.4	19.66	2.0 – 12.0	—	6.47	0	13.19
D5	06/14/99	19.5	19.88	2.0 – 12.0	sheen	7.56	sheen	12.32
D6	06/14/99	19.3	19.66	2.0 – 12.0	7.15	7.85	0.70	11.81
D7	06/14/99	19.0	19.35	2.0 – 12.0	6.63	6.78	0.15	12.57
D8	06/14/99	19.3	19.60	2.0 – 12.0	sheen	6.71	sheen	12.89
D9	06/14/99	19.7	20.02	2.0 – 12.0	—	7.29	0	12.73
D10	06/14/99	19.2	19.57	2.0 – 12.0	7.15	7.22	0.07	12.35
D11	06/14/99	19.2	19.57	2.0 – 12.0	7.00	7.03	0.03	12.54
D12	06/14/99	18.8	19.14	2.0 – 12.0	—	6.24	0	12.90
D13	06/14/99	18.7	19.02	2.0 – 12.0	sheen	5.68	sheen	13.34
D14	06/14/99	19.2	19.57	2.0 – 12.0	sheen	6.34	sheen	13.23
D15	06/14/99	20.0	20.41	2.0 – 12.0	sheen	7.42	sheen	12.99
D16	06/14/99	18.8	19.13	2.0 – 12.0	6.48	6.86	0.38	12.27
D17	06/14/99	18.9	19.22	2.0 – 12.0	sheen	6.53	sheen	12.69
D18	06/14/99	18.8	19.18	2.0 – 12.0	—	6.50	0	12.68
D19	06/14/99	18.8	19.13	2.0 – 12.0	—	5.77	0	13.36
D20	06/14/99	18.5	18.90	2.0 – 12.0	—	6.27	0	12.63
D21	06/14/99	18.8	19.23	2.0 – 12.0	—	5.81	0	13.42
D22	06/14/99	19.9	20.30	2.0 – 12.0	—	7.95	0	12.35
D23	06/14/99	18.7	19.07	2.5 – 12.5	sheen	6.61	sheen	12.46
D24	06/14/99	18.5	18.84	2.5 – 12.5	sheen	6.04	sheen	12.80
MW6	06/14/99	19.6	19.40	2.9 – 12.9	—	5.95	0	13.45
MW11	06/14/99	18.4	18.09	2.3 – 12.3	—	6.72	0	11.37
MW60	06/14/99	19.9	19.70	3.0 – 13.0	—	7.52	0	12.18
MW61	06/14/99	20.0	19.73	3.0 – 13.0	—	7.47	0	12.26
MW63	06/14/99	19.7	19.55	4.0 – 14.0	—	7.55	0	12.00
MW64	06/14/99	18.4	18.18	3.0 – 13.0	—	6.06	0	12.12
P1	06/14/99	19.0	19.42	2.5 – 12.5	—	7.61	0	11.81
P2	06/14/99	20.0	20.34	2.5 – 12.5	—	8.09	0	12.25
P3	06/14/99	19.5	19.91	2.5 – 12.5	—	7.87	0	12.04
P4	06/14/99	19.4	19.79	2.0 – 12.0	—	7.61	0	12.18
P5	06/14/99	19.5	19.84	2.5 – 12.5	—	6.72	0	13.12

NOTES:

BGS Below ground surface
BTOC Below top of casing
MSL Mean sea level

Table 4. Groundwater Elevations (continued)

Well Number	Date Measured	Elevation (feet MSL)		Depth of Screened Interval (feet BGS)	Depth of Free Product (feet BTOC)	Water Depth (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet MSL)
		Ground Surface	Top of Casing					
Second Sampling Event – July 1999								
D1	07/06/99	19.7	20.07	2.0 – 12.0	sheen	5.77	sheen	14.30
D2	07/06/99	19.3	19.60	2.0 – 12.0	—	5.40	0	14.20
D3	07/06/99	19.4	19.69	2.0 – 12.0	—	5.54	0	14.15
D4	07/06/99	19.4	19.66	2.0 – 12.0	—	5.26	0	14.40
D5	07/06/99	19.5	19.88	2.0 – 12.0	—	5.87	0	14.01
D6	07/06/99	19.3	19.66	2.0 – 12.0	4.83	7.41	2.58	12.25
D7	07/06/99	19.0	19.35	2.0 – 12.0	sheen	4.77	sheen	14.58
D8	07/06/99	19.3	19.60	2.0 – 12.0	4.91	5.12	0.22	14.48
D9	07/06/99	19.7	20.02	2.0 – 12.0	sheen	5.61	sheen	14.41
D10	07/06/99	19.2	19.57	2.0 – 12.0	5.31	6.05	0.74	13.52
D11	07/06/99	19.2	19.57	2.0 – 12.0	4.48	7.45	2.97	12.12
D12	07/06/99	18.8	19.14	2.0 – 12.0	sheen	3.68	sheen	15.46
D13	07/06/99	18.7	19.02	2.0 – 12.0	—	3.49	0	15.53
D14	07/06/99	19.2	19.57	2.0 – 12.0	—	4.01	0	15.56
D15	07/06/99	20.0	20.41	2.0 – 12.0	4.92	5.49	0.57	14.92
D16	07/06/99	18.8	19.13	2.0 – 12.0	4.50	6.16	1.66	12.97
D17	07/06/99	18.9	19.22	2.0 – 12.0	3.60	5.54	1.94	13.68
D18	07/06/99	18.8	19.18	2.0 – 12.0	—	3.13	0	16.05
D19	07/06/99	18.8	19.13	2.0 – 12.0	—	3.35	0	15.78
D20	07/06/99	18.5	18.90	2.0 – 12.0	—	4.54	0	14.36
D21	07/06/99	18.8	19.23	2.0 – 12.0	—	3.42	0	15.81
D22	07/06/99	19.9	20.30	2.0 – 12.0	sheen	5.92	sheen	14.38
D23	07/06/99	18.7	19.07	2.5 – 12.5	—	4.94	0	14.13
D24	07/06/99	18.5	18.84	2.5 – 12.5	—	4.14	0	14.70
MW6	07/06/99	19.6	19.40	2.9 – 12.9	—	4.23	0	15.17
MW11	07/06/99	18.4	18.09	2.3 – 12.3	—	5.51	0	12.58
MW60	07/06/99	19.9	19.70	3.0 – 13.0	—	6.04	0	13.66
MW61	07/06/99	20.0	19.73	3.0 – 13.0	—	5.97	0	13.76
MW63	07/06/99	19.7	19.55	4.0 – 14.0	—	6.18	0	13.37
MW64	07/06/99	18.4	18.18	3.0 – 13.0	—	4.80	0	13.38
P1	07/06/99	19.0	19.42	2.5 – 12.5	—	6.37	0	13.05
P2	07/06/99	20.0	20.34	2.5 – 12.5	—	6.66	0	13.68
P3	07/06/99	19.5	19.91	2.5 – 12.5	—	6.56	0	13.35
P4	07/06/99	19.4	19.79	2.0 – 12.0	—	6.21	0	13.58
P5	07/06/99	19.5	19.84	2.5 – 12.5	—	4.41	0	15.43

NOTES:
BGS Below ground surface
BTOC Below top of casing
MSL Mean sea level

Table 4. Groundwater Elevations (continued)

Well Number	Date Measured	Elevation (feet MSL)		Depth of Screened Interval (feet BGS)	Depth of Free Product (feet BTOC)	Water Depth (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet MSL)
		Ground Surface	Top of Casing					
Third Sampling Event Event – August 1999								
D1	08/23/99	19.7	20.07	2.0 – 12.0	—	7.21	0	12.86
D2	08/23/99	19.3	19.60	2.0 – 12.0	—	6.79	0	12.81
D3	08/23/99	19.4	19.69	2.0 – 12.0	—	6.83	0	12.86
D4	08/23/99	19.4	19.66	2.0 – 12.0	—	6.92	0	12.74
D5	08/23/99	19.5	19.88	2.0 – 12.0	sheen	7.01	sheen	12.87
D6	08/23/99	19.3	19.66	2.0 – 12.0	6.63	6.79	0.16	12.87
D7	08/23/99	19.0	19.35	2.0 – 12.0	sheen	6.42	sheen	12.93
D8	08/23/99	19.3	19.60	2.0 – 12.0	—	6.46	0	13.14
D9	08/23/99	19.7	20.02	2.0 – 12.0	6.95	6.96	0.01	13.06
D10	08/23/99	19.2	19.57	2.0 – 12.0	6.50	7.30	0.8	12.27
D11	08/23/99	19.2	19.57	2.0 – 12.0	6.55	6.96	0.41	12.61
D12	08/23/99	18.8	19.14	2.0 – 12.0	—	3.99	0	15.15
D13	08/23/99	18.7	19.02	2.0 – 12.0	—	5.26	0	13.76
D14	08/23/99	19.2	19.57	2.0 – 12.0	—	5.81	0	13.76
D15	08/23/99	20.0	20.41	2.0 – 12.0	sheen	7.10	sheen	13.31
D16	08/23/99	18.8	19.13	2.0 – 12.0	5.92	7.03	1.11	12.10
D17	08/23/99	18.9	19.22	2.0 – 12.0	—	6.13	0	13.09
D18	08/23/99	18.8	19.18	2.0 – 12.0	sheen	6.18	sheen	13.00
D19	08/23/99	18.8	19.13	2.0 – 12.0	—	5.32	0	13.81
D20	08/23/99	18.5	18.90	2.0 – 12.0	—	5.88	0	13.02
D21	08/23/99	18.8	19.23	2.0 – 12.0	sheen	5.42	sheen	13.81
D22	08/23/99	19.9	20.30	2.0 – 12.0	—	7.53	0	12.77
D23	08/23/99	18.7	19.07	2.5 – 12.5	sheen	6.07	sheen	13.00
D24	08/23/99	18.5	18.84	2.5 – 12.5	sheen	5.79	sheen	13.05
MW6	08/23/99	19.6	19.40	2.9 – 12.9	—	6.00	0	13.40
MW11	08/23/99	18.4	18.09	2.3 – 12.3	—	6.37	0	11.72
MW60	08/23/99	19.9	19.70	3.0 – 13.0	—	7.09	0	12.61
MW61	08/23/99	20.0	19.73	3.0 – 13.0	—	7.14	0	12.59
MW63	08/23/99	19.7	19.55	4.0 – 14.0	—	7.09	0	12.46
MW64	08/23/99	18.4	18.18	3.0 – 13.0	—	5.66	0	12.52
P1	08/23/99	19.0	19.42	2.5 – 12.5	—	7.16	0	12.26
P2	08/23/99	20.0	20.34	2.5 – 12.5	—	7.63	0	12.71
P3	08/23/99	19.5	19.91	2.5 – 12.5	—	7.39	0	12.52
P4	08/23/99	19.4	19.79	2.0 – 12.0	—	7.07	0	12.72
P5	08/23/99	19.5	19.84	2.5 – 12.5	—	6.05	0	13.79

NOTES:
BGS Below ground surface
BTOC Below top of casing
MSL Mean sea level

Table 4. Groundwater Elevations (continued)

Well Number	Date Measured	Elevation (feet MSL)		Depth of Screened Interval (feet BGS)	Depth of Free Product (feet BTOC)	Water Depth (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet MSL)
		Ground Surface	Top of Casing					
Fourth Sampling Event – September 1999								
D1	09/29/99	19.7	20.07	2.0 – 12.0	—	6.23	0	13.84
D2	09/29/99	19.3	19.60	2.0 – 12.0	—	5.73	0	13.87
D3	09/29/99	19.4	19.69	2.0 – 12.0	—	5.81	0	13.88
D4	09/29/99	19.4	19.66	2.0 – 12.0	—	5.75	0	13.91
D5	09/29/99	19.5	19.88	2.0 – 12.0	—	5.88	0	14.00
D6	09/29/99	19.3	19.66	2.0 – 12.0	5.24	6.94	1.7	12.72
D7	09/29/99	19.0	19.35	2.0 – 12.0	5.26	5.53	0.27	13.82
D8	09/29/99	19.3	19.60	2.0 – 12.0	—	5.61	0	13.99
D9	09/29/99	19.7	20.02	2.0 – 12.0	sheen	5.96	sheen	14.06
D10	09/29/99	19.2	19.57	2.0 – 12.0	5.29	6.54	1.25	13.03
D11	09/29/99	19.2	19.57	2.0 – 12.0	4.91	7.24	2.33	12.33
D12	09/29/99	18.8	19.14	2.0 – 12.0	—	3.23	0	15.91
D13	09/29/99	18.7	19.02	2.0 – 12.0	—	4.13	0	14.89
D14	09/29/99	19.2	19.57	2.0 – 12.0	—	4.79	0	14.78
D15	09/29/99	20.0	20.41	2.0 – 12.0	—	6.19	0	14.22
D16	09/29/99	18.8	19.13	2.0 – 12.0	4.91	5.47	0.56	13.66
D17	09/29/99	18.9	19.22	2.0 – 12.0	4.64	6.28	1.64	12.94
D18	09/29/99	18.8	19.18	2.0 – 12.0	—	4.86	0	14.32
D19	09/29/99	18.8	19.13	2.0 – 12.0	—	4.05	0	15.08
D20	09/29/99	18.5	18.90	2.0 – 12.0	—	4.62	0	14.28
D21	09/29/99	18.8	19.23	2.0 – 12.0	—	4.32	0	14.91
D22	09/29/99	19.9	20.30	2.0 – 12.0	—	6.51	0	13.79
D23	09/29/99	18.7	19.07	2.5 – 12.5	—	5.03	0	14.04
D24	09/29/99	18.5	18.84	2.5 – 12.5	—	4.52	0	14.32
MW6	09/29/99	19.6	19.40	2.9 – 12.9	—	4.88	0	14.52
MW11	09/29/99	18.4	18.09	2.3 – 12.3	—	5.31	0	12.78
MW60	09/29/99	19.9	19.70	3.0 – 13.0	—	5.94	0	13.76
MW61	09/29/99	20.0	19.73	3.0 – 13.0	—	5.95	0	13.78
MW63	09/29/99	19.7	19.55	4.0 – 14.0	—	6.04	0	13.51
MW64	09/29/99	18.4	18.18	3.0 – 13.0	—	4.52	0	13.66
P1	09/29/99	19.0	19.42	2.5 – 12.5	—	6.13	0	13.29
P2	09/29/99	20.0	20.34	2.5 – 12.5	—	6.60	0	13.74
P3	09/29/99	19.5	19.91	2.5 – 12.5	—	6.37	0	13.54
P4	09/29/99	19.4	19.79	2.0 – 12.0	—	6.01	0	13.78
P5	09/29/99	19.5	19.84	2.5 – 12.5	—	5.16	0	14.68

NOTES:
BGS Below ground surface
BTOC Below top of casing
MSL Mean sea level

Table 4. Groundwater Elevations (continued)

Well Number	Date Measured	Elevation (feet MSL)		Depth of Screened Interval (feet BGS)	Depth of Free Product (feet BTOC)	Water Depth (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet MSL)
		Ground Surface	Top of Casing					
Fifth Sampling Event – October 1999								
D1	10/27/99	19.7	20.07	2.0 – 12.0	—	6.92	0	13.15
D2	10/27/99	19.3	19.60	2.0 – 12.0	—	6.49	0	13.11
D3	10/27/99	19.4	19.69	2.0 – 12.0	—	6.44	0	13.25
D4	10/27/99	19.4	19.66	2.0 – 12.0	—	6.36	0	13.30
D5	10/27/99	19.5	19.88	2.0 – 12.0	—	6.81	0	13.07
D6	10/27/99	19.3	19.66	2.0 – 12.0	6.33	7.48	1.15	12.18
D7	10/27/99	19.0	19.35	2.0 – 12.0	5.82	6.20	0.38	13.15
D8	10/27/99	19.3	19.60	2.0 – 12.0	6.07	6.52	0.45	13.08
D9	10/27/99	19.7	20.02	2.0 – 12.0	—	6.56	0	13.46
D10	10/27/99	19.2	19.57	2.0 – 12.0	6.06	7.80	1.74	11.77
D11	10/27/99	19.2	19.57	2.0 – 12.0	6.05	7.04	0.99	12.53
D12	10/27/99	18.8	19.14	2.0 – 12.0	—	4.54	0	14.60
D13	10/27/99	18.7	19.02	2.0 – 12.0	—	4.64	0	14.38
D14	10/27/99	19.2	19.57	2.0 – 12.0	—	5.07	0	14.50
D15	10/27/99	20.0	20.41	2.0 – 12.0	6.31	6.77	0.46	13.64
D16	10/27/99	18.8	19.13	2.0 – 12.0	5.51	7.22	1.71	11.91
D17	10/27/99	18.9	19.22	2.0 – 12.0	5.74	6.22	0.48	13.00
D18	10/27/99	18.8	19.18	2.0 – 12.0	—	5.45	0	13.73
D19	10/27/99	18.8	19.13	2.0 – 12.0	—	4.45	0	14.68
D20	10/27/99	18.5	18.90	2.0 – 12.0	—	5.51	0	13.39
D21	10/27/99	18.8	19.23	2.0 – 12.0	—	4.61	0	14.62
D22	10/27/99	19.9	20.30	2.0 – 12.0	—	7.2	0	13.10
D23	10/27/99	18.7	19.07	2.5 – 12.5	—	5.89	0	13.18
D24	10/27/99	18.5	18.84	2.5 – 12.5	—	5.32	0	13.52
MW6	10/27/99	19.6	19.4	2.9 – 12.9	—	4.90	0	14.50
MW11	10/27/99	18.4	18.09	2.3 – 12.3	—	6.11	0	11.98
MW60	10/27/99	19.9	19.70	3.0 – 13.0	—	6.65	0	13.05
MW61	10/27/99	20.0	19.73	3.0 – 13.0	—	6.41	0	13.32
MW63	10/27/99	19.7	19.55	4.0 – 14.0	—	6.78	0	12.77
MW64	10/27/99	18.4	18.18	3.0 – 13.0	—	5.34	0	12.84
P1	10/27/99	19.0	19.42	2.5 – 12.5	—	7.00	0	12.42
P2	10/27/99	20.0	20.34	2.5 – 12.5	—	7.30	0	13.04
P3	10/27/99	19.5	19.91	2.5 – 12.5	—	7.24	0	12.67
P4	10/27/99	19.4	19.79	2.0 – 12.0	—	6.86	0	12.93
P5	10/27/99	19.5	19.84	2.5 – 12.5	—	5.22	0	14.62

NOTES:
BGS Below ground surface
BTOC Below top of casing
MSL Mean sea level

Table 4. Groundwater Elevations (continued)

Well Number	Date Measured	Elevation (feet MSL)		Depth of Screened Interval (feet BGS)	Depth of Free Product (feet BTOC)	Water Depth (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet MSL)
		Ground Surface	Top of Casing					
Sixth Sampling Event – December 1999								
D1	12/01/99	19.7	20.07	2.0 – 12.0	—	8.01	0	12.06
D2	12/01/99	19.3	19.60	2.0 – 12.0	—	7.52	0	12.08
D3	12/01/99	19.4	19.69	2.0 – 12.0	—	7.46	0	12.23
D4	12/01/99	19.4	19.66	2.0 – 12.0	—	7.38	0	12.28
D5	12/01/99	19.5	19.88	2.0 – 12.0	—	7.92	0	11.96
D6	12/01/99	19.3	19.66	2.0 – 12.0	7.45	8.21	0.76	11.45
D7	12/01/99	19.0	19.35	2.0 – 12.0	—	7.07	0	12.28
D8	12/01/99	19.3	19.60	2.0 – 12.0	—	7.27	0	12.33
D9	12/01/99	19.7	20.02	2.0 – 12.0	7.52	7.56	0.04	12.46
D10	12/01/99	19.2	19.57	2.0 – 12.0	7.04	7.60	0.56	11.97
D11	12/01/99	19.2	19.57	2.0 – 12.0	7.19	7.58	0.39	11.99
D12	12/01/99	18.8	19.14	2.0 – 12.0	—	6.59	0	12.55
D13	12/01/99	18.7	19.02	2.0 – 12.0	—	6.01	0	13.01
D14	12/01/99	19.2	19.57	2.0 – 12.0	—	6.71	0	12.86
D15	12/01/99	20.0	20.41	2.0 – 12.0	7.54	7.71	0.17	12.70
D16	12/01/99	18.8	19.13	2.0 – 12.0	6.51	8.08	1.57	11.05
D17	12/01/99	18.9	19.22	2.0 – 12.0	6.71	6.91	0.20	12.31
D18	12/01/99	18.8	19.18	2.0 – 12.0	—	6.71	0	12.47
D19	12/01/99	18.8	19.13	2.0 – 12.0	—	5.88	0	13.25
D20	12/01/99	18.5	18.90	2.0 – 12.0	—	6.41	0	12.49
D21	12/01/99	18.8	19.23	2.0 – 12.0	—	5.96	0	13.27
D22	12/01/99	19.9	20.30	2.0 – 12.0	—	8.19	0	12.11
D23	12/01/99	18.7	19.07	2.5 – 12.5	—	6.87	0	12.20
D24	12/01/99	18.5	18.84	2.5 – 12.5	—	6.35	0	12.49
MW6	12/01/99	19.6	19.40	2.9 – 12.9	—	7.95	0	11.45
MW11	12/01/99	18.4	18.09	2.3 – 12.3	—	7.01	0	11.08
MW60	12/01/99	19.9	19.70	3.0 – 13.0	—	7.79	0	11.91
MW61	12/01/99	20.0	19.73	3.0 – 13.0	—	7.89	0	11.84
MW63	12/01/99	19.7	19.55	4.0 – 14.0	—	7.71	0	11.84
MW64	12/01/99	18.4	18.18	3.0 – 13.0	—	6.24	0	11.94
P1	12/01/99	19.0	19.42	2.5 – 12.5	—	7.87	0	11.55
P2	12/01/99	20.0	20.34	2.5 – 12.5	—	8.35	0	11.99
P3	12/01/99	19.5	19.91	2.5 – 12.5	—	8.15	0	11.76
P4	12/01/99	19.4	19.79	2.0 – 12.0	—	7.87	0	11.92
P5	12/01/99	19.5	19.84	2.5 – 12.5	—	6.73	0	13.11

NOTES:
BGS Below ground surface
BTOC Below top of casing
MSL Mean sea level

Table 4. Groundwater Elevations (continued)

Well Number	Date Measured	Elevation (feet MSL)		Depth of Screened Interval (feet BGS)	Depth of Free Product (feet BTOC)	Water Depth (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet MSL)
		Ground Surface	Top of Casing					
Seventh Sampling Event – January 2000								
D1	01/04/00	19.7	20.07	2.0 – 12.0	—	7.89	0	12.18
D2	01/04/00	19.3	19.60	2.0 – 12.0	—	7.38	0	12.22
D3	01/04/00	19.4	19.69	2.0 – 12.0	—	7.35	0	12.34
D4	01/04/00	19.4	19.66	2.0 – 12.0	—	7.24	0	12.42
D5	01/04/00	19.5	19.88	2.0 – 12.0	—	7.71	0	12.17
D6	01/04/00	19.3	19.66	2.0 – 12.0	7.32	7.78	0.46	11.88
D7	01/04/00	19.0	19.35	2.0 – 12.0	—	6.9	0	12.45
D8	01/04/00	19.3	19.60	2.0 – 12.0	7.11	7.12	0.01	12.48
D9	01/04/00	19.7	20.02	2.0 – 12.0	—	7.45	0	12.57
D10	01/04/00	19.2	19.57	2.0 – 12.0	7.21	7.67	0.46	11.90
D11	01/04/00	19.2	19.57	2.0 – 12.0	7.18	7.42	0.24	12.15
D12	01/04/00	18.8	19.14	2.0 – 12.0	—	6.4	0	12.74
D13	01/04/00	18.7	19.02	2.0 – 12.0	—	6.05	0	12.97
D14	01/04/00	19.2	19.57	2.0 – 12.0	—	6.72	0	12.85
D15	01/04/00	20.0	20.41	2.0 – 12.0	—	7.57	0	12.84
D16	01/04/00	18.8	19.13	2.0 – 12.0	6.70	7.23	0.53	11.90
D17	01/04/00	18.9	19.22	2.0 – 12.0	6.45	6.87	0.42	12.35
D18	01/04/00	18.8	19.18	2.0 – 12.0	—	6.67	0	12.51
D19	01/04/00	18.8	19.13	2.0 – 12.0	—	5.94	0	13.19
D20	01/04/00	18.5	18.90	2.0 – 12.0	—	6.45	0	12.45
D21	01/04/00	18.8	19.23	2.0 – 12.0	—	6.03	0	13.20
D22	01/04/00	19.9	20.30	2.0 – 12.0	—	8.12	0	12.18
D23	01/04/00	18.7	19.07	2.5 – 12.5	—	6.79	0	12.28
D24	01/04/00	18.5	18.84	2.5 – 12.5	sheen	6.30	sheen	12.54
MW6	01/04/00	19.6	19.40	2.9 – 12.9	—	6.03	0	13.37
MW11	01/04/00	18.4	18.09	2.3 – 12.3	—	below pump	0	below pump
MW60	01/04/00	19.9	19.70	3.0 – 13.0	—	7.57	0	12.13
MW61	01/04/00	20.0	19.73	3.0 – 13.0	—	7.54	0	12.19
MW63	01/04/00	19.7	19.55	4.0 – 14.0	—	7.67	0	11.88
MW64	01/04/00	18.4	18.18	3.0 – 13.0	—	6.29	0	11.89
P1	01/04/00	19.0	19.42	2.5 – 12.5	—	7.84	0	11.58
P2	01/04/00	20.0	20.34	2.5 – 12.5	—	8.24	0	12.10
P3	01/04/00	19.5	19.91	2.5 – 12.5	—	8.08	0	11.83
P4	01/04/00	19.4	19.79	2.0 – 12.0	—	7.72	0	12.07
P5	01/04/00	19.5	19.84	2.5 – 12.5	—	6.83	0	13.01

NOTES:
BGS Below ground surface
BTOC Below top of casing
MSL Mean sea level

Table 4. Groundwater Elevations (continued)

Well Number	Date Measured	Elevation (feet MSL)		Depth of Screened Interval (feet BGS)	Depth of Free Product (feet BTOC)	Water Depth (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet MSL)
		Ground Surface	Top of Casing					
Eighth Sampling Event – March 2000								
D1	03/27/00	19.7	20.07	2.0 – 12.0	—	6.97	0	13.10
D2	03/27/00	19.3	19.60	2.0 – 12.0	—	6.67	0	12.93
D3	03/27/00	19.4	19.69	2.0 – 12.0	—	6.76	0	12.93
D4	03/27/00	19.4	19.66	2.0 – 12.0	—	6.82	0	12.84
D5	03/27/00	19.5	19.88	2.0 – 12.0	—	7.02	0	12.86
D6	03/27/00	19.3	19.66	2.0 – 12.0	6.49	7.59	1.10	12.07
D7	03/27/00	19.0	19.35	2.0 – 12.0	—	6.80	0	12.55
D8	03/27/00	19.3	19.60	2.0 – 12.0	—	6.85	0	12.75
D9	03/27/00	19.7	20.02	2.0 – 12.0	—	6.90	0	13.12
D10	03/27/00	19.2	19.57	2.0 – 12.0	6.38	7.79	1.41	11.78
D11	03/27/00	19.2	19.57	2.0 – 12.0	6.56	6.72	0.16	12.85
D12	03/27/00	18.8	19.14	2.0 – 12.0	—	3.58	0	15.56
D13	03/27/00	18.7	19.02	2.0 – 12.0	—	5.34	0	13.68
D14	03/27/00	19.2	19.57	2.0 – 12.0	—	6.28	0	13.29
D15	03/27/00	20.0	20.41	2.0 – 12.0	—	6.79	0	13.62
D16	03/27/00	18.8	19.13	2.0 – 12.0	—	6.15	0	12.98
D17	03/27/00	18.9	19.22	2.0 – 12.0	—	6.12	0	13.10
D18	03/27/00	18.8	19.18	2.0 – 12.0	—	5.70	0	13.48
D19	03/27/00	18.8	19.13	2.0 – 12.0	—	4.49	0	14.64
D20	03/27/00	18.5	18.90	2.0 – 12.0	—	5.76	0	13.14
D21	03/27/00	18.8	19.23	2.0 – 12.0	—	5.01	0	14.22
D22	03/27/00	19.9	20.30	2.0 – 12.0	—	7.39	0	12.91
D23	03/27/00	18.7	19.07	2.5 – 12.5	—	6.14	0	12.93
D24	03/27/00	18.5	18.84	2.5 – 12.5	5.45	6.28	0.83	12.56
MW6	03/27/00	19.6	19.40	2.9 – 12.9	—	5.23	0	14.17
MW11	03/27/00	18.4	18.09	2.3 – 12.3	—	6.51	0	11.58
MW60	03/27/00	19.9	19.70	3.0 – 13.0	—	7.01	0	12.69
MW61	03/27/00	20.0	19.73	3.0 – 13.0	—	6.87	0	12.86
MW63	03/27/00	19.7	19.55	4.0 – 14.0	—	7.17	0	12.38
MW64	03/27/00	18.4	18.18	3.0 – 13.0	NM	NM	NM	NM
P1	03/27/00	19.0	19.42	2.5 – 12.5	—	7.19	0	12.23
P2	03/27/00	20.0	20.34	2.5 – 12.5	—	7.54	0	12.80
P3	03/27/00	19.5	19.91	2.5 – 12.5	—	7.4	0	12.51
P4	03/27/00	19.4	19.79	2.0 – 12.0	—	7.07	0	12.72
P5	03/27/00	19.5	19.84	2.5 – 12.5	—	5.81	0	14.03

NOTES:

BGS Below ground surface
BTOC Below top of casing
MSL Mean sea level
NM Not measured

Table 4. Groundwater Elevations (continued)

Well Number	Date Measured	Elevation (feet MSL)		Depth of Screened Interval (feet BGS)	Depth of Free Product (feet BTOC)	Water Depth (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet MSL)
		Ground Surface	Top of Casing					
Ninth Sampling Event – May 2000								
D1	05/22/00	19.7	20.07	2.0 – 12.0	—	7.87	0	12.20
D2	05/22/00	19.3	19.60	2.0 – 12.0	—	7.35	0	12.25
D3	05/22/00	19.4	19.69	2.0 – 12.0	—	7.35	0	12.34
D4	05/22/00	19.4	19.66	2.0 – 12.0	—	7.25	0	12.41
D5	05/22/00	19.5	19.88	2.0 – 12.0	—	7.69	0	12.19
D6	05/22/00	19.3	19.66	2.0 – 12.0	—	7.41	0	12.25
D7	05/22/00	19.0	19.35	2.0 – 12.0	—	6.79	0	12.56
D8	05/22/00	19.3	19.60	2.0 – 12.0	—	7.11	0	12.49
D9	05/22/00	19.7	20.02	2.0 – 12.0	—	7.51	0	12.51
D10	05/22/00	19.2	19.57	2.0 – 12.0	7.28	7.45	0.17	12.12
D11	05/22/00	19.2	19.57	2.0 – 12.0	—	7.22	0	12.35
D12	05/22/00	18.8	19.14	2.0 – 12.0	—	5.57	0	13.57
D13	05/22/00	18.7	19.02	2.0 – 12.0	—	5.00	0	14.02
D14	05/22/00	19.2	19.57	2.0 – 12.0	—	6.52	0	13.05
D15	05/22/00	20.0	20.41	2.0 – 12.0	—	7.46	0	12.95
D16	05/22/00	18.8	19.13	2.0 – 12.0	—	6.78	0	12.35
D17	05/22/00	18.9	19.22	2.0 – 12.0	—	6.78	0	12.44
D18	05/22/00	18.8	19.18	2.0 – 12.0	6.61	6.62	0.01	12.56
D19	05/22/00	18.8	19.13	2.0 – 12.0	—	5.85	0	13.28
D20	05/22/00	18.5	18.90	2.0 – 12.0	—	6.46	0	12.44
D21	05/22/00	18.8	19.23	2.0 – 12.0	—	5.93	0	13.30
D22	05/22/00	19.9	20.30	2.0 – 12.0	—	8.10	0	12.20
D23	05/22/00	18.7	19.07	2.5 – 12.5	—	6.78	0	12.29
D24	05/22/00	18.5	18.84	2.5 – 12.5	—	6.30	0	12.54
MW6	05/22/00	19.6	19.4	2.9 – 12.9	—	5.83	0	13.57
MW11	05/22/00	18.4	18.09	2.3 – 12.3	—	6.96	0	11.13
MW60	05/22/00	19.9	19.70	3.0 – 13.0	—	7.63	0	12.07
MW61	05/22/00	20.0	19.73	3.0 – 13.0	—	7.54	0	12.19
MW63	05/22/00	19.7	19.55	4.0 – 14.0	—	7.73	0	11.82
MW64	05/22/00	18.4	18.18	3.0 – 13.0	NM	NM	NM	NM
P1	05/22/00	19.0	19.42	2.5 – 12.5	—	7.73	0	11.69
P2	05/22/00	20.0	20.34	2.5 – 12.5	—	8.19	0	12.15
P3	05/22/00	19.5	19.91	2.5 – 12.5	—	8.01	0	11.90
P4	05/22/00	19.4	19.79	2.0 – 12.0	—	7.68	0	12.11
P5	05/22/00	19.5	19.84	2.5 – 12.5	—	6.69	0	13.15

NOTE:
BGS Below ground surface
BTOC Below top of casing
MSL Mean sea level
NM Not measured

Table 4. Groundwater Elevations (continued)

Well Number	Date Measured	Elevation (feet MSL)		Depth of Screened Interval (feet BGS)	Depth of Free Product (feet BTOC)	Water Depth (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet MSL)
		Ground Surface	Top of Casing					
Tenth Sampling Event – July 2000								
D1	07/19/00	19.7	20.07	2.0 – 12.0	—	8.17	0	11.90
D2	07/19/00	19.3	19.60	2.0 – 12.0	—	7.68	0	11.92
D3	07/19/00	19.4	19.69	2.0 – 12.0	—	7.76	0	11.93
D4	07/19/00	19.4	19.66	2.0 – 12.0	—	7.84	0	11.82
D5	07/19/00	19.5	19.88	2.0 – 12.0	—	7.73	0	12.15
D6	07/19/00	19.3	19.66	2.0 – 12.0	—	7.79	0	11.87
D7	07/19/00	19.0	19.35	2.0 – 12.0	—	7.19	0	12.16
D8	07/19/00	19.3	19.60	2.0 – 12.0	—	7.61	0	11.99
D9	07/19/00	19.7	20.02	2.0 – 12.0	—	7.79	0	12.23
D10	07/19/00	19.2	19.57	2.0 – 12.0	7.58	7.85	0.27	11.72
D11	07/19/00	19.2	19.57	2.0 – 12.0	7.49	7.55	0.06	12.02
D12	07/19/00	18.8	19.14	2.0 – 12.0	—	6.67	0	12.47
D13	07/19/00	18.7	19.02	2.0 – 12.0	—	6.22	0	12.80
D14	07/19/00	19.2	19.57	2.0 – 12.0	—	7.10	0	12.47
D15	07/19/00	20.0	20.41	2.0 – 12.0	—	7.80	0	12.61
D16	07/19/00	18.8	19.13	2.0 – 12.0	—	7.06	0	12.07
D17	07/19/00	18.9	19.22	2.0 – 12.0	—	7.07	0	12.15
D18	07/19/00	18.8	19.18	2.0 – 12.0	—	7.28	0	11.90
D19	07/19/00	18.8	19.13	2.0 – 12.0	—	6.09	0	13.04
D20	07/19/00	18.5	18.90	2.0 – 12.0	—	6.74	0	12.16
D21	07/19/00	18.8	19.23	2.0 – 12.0	—	6.10	0	13.13
D22	07/19/00	19.9	20.30	2.0 – 12.0	—	8.41	0	11.89
D23	07/19/00	18.7	19.07	2.5 – 12.5	—	7.02	0	12.05
D24	07/19/00	18.5	18.84	2.5 – 12.5	—	6.57	0	12.27
MW6	07/19/00	19.6	19.4	2.9 – 12.9	NM	NM	NM	NM
MW11	07/19/00	18.4	18.09	2.3 – 12.3	below pump	below pump		below pump
MW60	07/19/00	19.9	19.70	3.0 – 13.0	—	7.85	0	11.85
MW61	07/19/00	20.0	19.73	3.0 – 13.0	—	7.88	0	11.85
MW63	07/19/00	19.7	19.55	4.0 – 14.0	below pump	below pump		below pump
MW64	07/19/00	18.4	18.18	3.0 – 13.0	—	6.53	0	11.65
P1	07/19/00	19.0	19.42	2.5 – 12.5	—	8.03	0	11.39
P2	07/19/00	20.0	20.34	2.5 – 12.5	—	8.50	0	11.84
P3	07/19/00	19.5	19.91	2.5 – 12.5	—	8.35	0	11.56
P4	07/19/00	19.4	19.79	2.0 – 12.0	—	7.87	0	11.92
P5	07/19/00	19.5	19.84	2.5 – 12.5	—	7.03	0	12.81
MW8	07/25/00	19.0	18.58	3.5 – 13.5	—	8.91	0	9.67
MW8A	07/25/00	19.0	18.67	4.0 – 14.0	—	9.76	0	8.91
MW59	07/25/00	18.8	18.61	2.0 – 12.0	9.20	9.28	0.08	9.33
PR-1	07/25/00	18.9	18.64	3.6 – 13.6	—	8.04	0	10.6
PR-2	07/25/00	18.9	18.54	4.0 – 14.0	8.57	8.58	0.01	9.96
PR-3	07/25/00	18.9	18.68	2.0 – 17.0	—	8.37	0	10.31
PR-4	07/25/00	19.1	19.01	2.0 – 17.0	—	8.82	0	10.19
PR-5	07/25/00	19.4	19.11	2.0 – 17.0	—	9.08	0	10.03

NOTES:

BGS Below ground surface
BTOC Below top of casing
MSL Mean sea level
NM Not measured

Table 4. Groundwater Elevations (continued)

Well Number	Date Measured	Elevation (feet MSL)		Depth of Screened Interval (feet BGS)	Depth of Free Product (feet BTOC)	Water Depth (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet MSL)
		Ground Surface	Top of Casing					
Eleventh Sampling Event – September 2000								
D1	09/25/00	19.7	20.07	2.0 – 12.0	—	6.47	0	13.60
D2	09/25/00	19.3	19.60	2.0 – 12.0	—	5.94	0	13.66
D3	09/25/00	19.4	19.69	2.0 – 12.0	—	5.93	0	13.76
D4	09/25/00	19.4	19.66	2.0 – 12.0	—	5.89	0	13.77
D5	09/25/00	19.5	19.88	2.0 – 12.0	—	6.29	0	13.59
D6	09/25/00	19.3	19.66	2.0 – 12.0	—	6.00	0	13.66
D7	09/25/00	19.0	19.35	2.0 – 12.0	—	5.38	0	13.97
D8	09/25/00	19.3	19.60	2.0 – 12.0	—	5.63	0	13.97
D9	09/25/00	19.7	20.02	2.0 – 12.0	—	6.06	0	13.96
D10	09/25/00	19.2	19.57	2.0 – 12.0	5.71	6.42	0.71	13.15
D11	09/25/00	19.2	19.57	2.0 – 12.0	5.34	6.96	1.62	12.61
D12	09/25/00	18.8	19.14	2.0 – 12.0	—	3.03	0	16.11
D13	09/25/00	18.7	19.02	2.0 – 12.0	—	3.95	0	15.07
D14	09/25/00	19.2	19.57	2.0 – 12.0	—	4.71	0	14.86
D15	09/25/00	20.0	20.41	2.0 – 12.0	—	6.01	0	14.40
D16	09/25/00	18.8	19.13	2.0 – 12.0	—	5.29	0	13.84
D17	09/25/00	18.9	19.22	2.0 – 12.0	5.23	5.24	0.01	13.98
D18	09/25/00	18.8	19.18	2.0 – 12.0	—	4.78	0	14.40
D19	09/25/00	18.8	19.13	2.0 – 12.0	—	3.97	0	15.16
D20	09/25/00	18.5	18.90	2.0 – 12.0	—	4.93	0	13.97
D21	09/25/00	18.8	19.23	2.0 – 12.0	—	4.17	0	15.06
D22	09/25/00	19.9	20.30	2.0 – 12.0	—	6.74	0	13.56
D23	09/25/00	18.7	19.07	2.5 – 12.5	—	5.32	0	13.75
D24	09/25/00	18.5	18.84	2.5 – 12.5	—	4.74	0	14.10
MW6	09/25/00	19.6	19.4	2.9 – 12.9	—	4.78	0	14.62
MW11	09/25/00	18.4	18.09	2.3 – 12.3	—	5.82	0	12.27
MW60	09/25/00	19.9	19.70	3.0 – 13.0	—	6.16	0	13.54
MW61	09/25/00	20.0	19.73	3.0 – 13.0	—	6.16	0	13.57
MW63	09/25/00	19.7	19.55	4.0 – 14.0	—	6.33	0	13.22
MW64	09/25/00	18.4	18.18	3.0 – 13.0	NM	NM	NM	NM
P1	09/25/00	19.0	19.42	2.5 – 12.5	—	6.56	0	12.86
P2	09/25/00	20.0	20.34	2.5 – 12.5	—	6.83	0	13.51
P3	09/25/00	19.5	19.91	2.5 – 12.5	—	6.69	0	13.22
P4	09/25/00	19.4	19.79	2.0 – 12.0	—	6.29	0	13.50
P5	09/25/00	19.5	19.84	2.5 – 12.5	—	5.02	0	14.82

NOTES:

BGS Below ground surface
BTOC Below top of casing
MSL Mean sea level
NM Not measured

Table 4. Groundwater Elevations (continued)

Well Number	Date Measured	Elevation (feet MSL)		Depth of Screened Interval (feet BGS)	Depth of Free Product (feet BTOC)	Water Depth (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet MSL)
		Ground Surface	Top of Casing					
Twelfth Sampling Event – November/December 2000								
D1	11/28/00	19.7	20.07	2.0 – 12.0	—	8.24	0	11.83
D2	11/28/00	19.3	19.60	2.0 – 12.0	—	7.69	0	11.91
D3	11/28/00	19.4	19.69	2.0 – 12.0	—	7.70	0	11.99
D4	11/28/00	19.4	19.66	2.0 – 12.0	—	7.60	0	12.06
D5	11/28/00	19.5	19.88	2.0 – 12.0	—	8.03	0	11.85
D6	11/28/00	19.3	19.66	2.0 – 12.0	—	7.77	0	11.89
D7	11/28/00	19.0	19.35	2.0 – 12.0	—	7.24	0	12.11
D8	11/28/00	19.3	19.60	2.0 – 12.0	—	7.47	0	12.13
D9	11/28/00	19.7	20.02	2.0 – 12.0	—	7.81	0	12.21
D10	11/28/00	19.2	19.57	2.0 – 12.0	7.64	7.69	0.05	11.88
D11	11/28/00	19.2	19.57	2.0 – 12.0	—	7.55	0	12.02
D12	11/28/00	18.8	19.14	2.0 – 12.0	—	6.82	0	12.32
D13	11/28/00	18.7	19.02	2.0 – 12.0	—	5.38	0	13.64
D14	11/28/00	19.2	19.57	2.0 – 12.0	—	6.97	0	12.60
D15	11/28/00	20.0	20.41	2.0 – 12.0	—	7.9	0	12.51
D16	11/28/00	18.8	19.13	2.0 – 12.0	—	7.11	0	12.02
D17	11/28/00	18.9	19.22	2.0 – 12.0	—	7.09	0	12.13
D18	11/28/00	18.8	19.18	2.0 – 12.0	—	7.04	0	12.14
D19	11/28/00	18.8	19.13	2.0 – 12.0	—	6.43	0	12.70
D20	11/28/00	18.5	18.90	2.0 – 12.0	—	6.80	0	12.10
D21	11/28/00	18.8	19.23	2.0 – 12.0	—	6.49	0	12.74
D22	11/28/00	19.9	20.30	2.0 – 12.0	—	8.46	0	11.84
D23	11/28/00	18.7	19.07	2.5 – 12.5	—	7.15	0	11.92
D24	11/28/00	18.5	18.84	2.5 – 12.5	—	6.60	0	12.24
MW6	11/28/00	19.6	19.4	2.9 – 12.9	—	5.42	0	13.98
MW11	11/28/00	18.4	18.09	2.3 – 12.3	—	7.23	0	10.86
MW60	11/28/00	19.9	19.70	3.0 – 13.0	—	7.93	0	11.77
MW61	11/28/00	20.0	19.73	3.0 – 13.0	—	7.88	0	11.85
MW63	11/28/00	19.7	19.55	4.0 – 14.0	—	8.02	0	11.53
MW64	11/28/00	18.4	18.18	3.0 – 13.0	—	6.61	0	11.57
P1	11/28/00	19.0	19.42	2.5 – 12.5	—	8.17	0	11.25
P2	11/28/00	20.0	20.34	2.5 – 12.5	—	8.60	0	11.74
P3	11/28/00	19.5	19.91	2.5 – 12.5	—	8.41	0	11.50
P4	11/28/00	19.4	19.79	2.0 – 12.0	—	8.06	0	11.73
P5	11/28/00	19.5	19.84	2.5 – 12.5	—	7.28	0	12.56

NOTES:
BGS Below ground surface
BTOC Below top of casing
MSL Mean sea level

Table 4. Groundwater Elevations (continued)

Well Number	Date Measured	Elevation (feet MSL)		Depth of Screened Interval (feet BGS)	Depth of Free Product (feet BTOC)	Water Depth (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet MSL)
		Ground Surface	Top of Casing					
Thirteenth Sampling Event – February 2001								
D1	02/01/01	19.7	20.07	2.0 – 12.0	—	8.19	0	11.88
D2	02/01/01	19.3	19.60	2.0 – 12.0	—	7.95	0	11.65
D3	02/01/01	19.4	19.69	2.0 – 12.0	7.79	7.84	0.05	11.85
D4	02/01/01	19.4	19.66	2.0 – 12.0	—	7.48	0	12.18
D5	02/01/01	19.5	19.88	2.0 – 12.0	—	7.94	0	11.94
D6	02/01/01	19.3	19.66	2.0 – 12.0	7.95	7.96	0.01	11.70
D7	02/01/01	19.0	19.35	2.0 – 12.0	—	8.13	0	11.22
D8	02/01/01	19.3	19.60	2.0 – 12.0	—	7.49	0	12.11
D9	02/01/01	19.7	20.02	2.0 – 12.0	—	7.49	0	12.53
D10	02/01/01	19.2	19.57	2.0 – 12.0	7.48	8.09	0.61	11.48
D11	02/01/01	19.2	19.57	2.0 – 12.0	7.60	8.51	0.91	11.06
D12	02/01/01	18.8	19.14	2.0 – 12.0	—	5.61	0	13.53
D13	02/01/01	18.7	19.02	2.0 – 12.0	—	6.98	0	12.04
D14	02/01/01	19.2	19.57	2.0 – 12.0	—	6.78	0	12.79
D15	02/01/01	20.0	20.41	2.0 – 12.0	—	7.23	0	13.18
D16	02/01/01	18.8	19.13	2.0 – 12.0	—	7.20	0	11.93
D17	02/01/01	18.9	19.22	2.0 – 12.0	—	7.31	0	11.91
D18	02/01/01	18.8	19.18	2.0 – 12.0	—	7.13	0	12.05
D19	02/01/01	18.8	19.13	2.0 – 12.0	—	5.88	0	13.25
D20	02/01/01	18.5	18.90	2.0 – 12.0	—	6.70	0	12.20
D21	02/01/01	18.8	19.23	2.0 – 12.0	—	5.71	0	13.52
D22	02/01/01	19.9	20.30	2.0 – 12.0	—	8.33	0	11.97
D23	02/01/01	18.7	19.07	2.5 – 12.5	—	7.00	0	12.07
D24	02/01/01	18.5	18.84	2.5 – 12.5	—	6.71	0	12.13
MW6	02/01/01	19.6	19.4	2.9 – 12.9	—	5.92	0	13.48
MW11	02/01/01	18.4	18.09	2.3 – 12.3	—	6.95	0	11.14
MW60	02/01/01	19.9	19.70	3.0 – 13.0	below pump	below pump		below pump
MW61	02/01/01	20.0	19.73	3.0 – 13.0	—	7.82	0	11.91
MW63	02/01/01	19.7	19.55	4.0 – 14.0	—	7.77	0	11.78
MW64	02/01/01	18.4	18.18	3.0 – 13.0	—	6.32	0	11.86
P1	02/01/01	19.0	19.42	2.5 – 12.5	—	7.83	0	11.59
P2	02/01/01	20.0	20.34	2.5 – 12.5	—	8.40	0	11.94
P3	02/01/01	19.5	19.91	2.5 – 12.5	—	8.12	0	11.79
P4	02/01/01	19.4	19.79	2.0 – 12.0	—	7.84	0	11.95
P5	02/01/01	19.5	19.84	2.5 – 12.5	—	6.59	0	13.25

NOTES:
BGS Below ground surface
BTOC Below top of casing
MSL Mean sea level

Table 4. Groundwater Elevations (continued)

Well Number	Date Measured	Elevation (feet MSL)		Depth of Screened Interval (feet BGS)	Depth of Free Product (feet BTOC)	Water Depth (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet MSL)
		Ground Surface	Top of Casing					
Fourteenth Sampling Event – April 2001								
D1	04/07/01	19.7	20.07	2.0 – 12.0	—	7.94	0	12.13
D2	04/07/01	19.3	19.60	2.0 – 12.0	—	7.71	0	11.89
D3	04/07/01	19.4	19.69	2.0 – 12.0	—	7.37	0	12.32
D4	04/07/01	19.4	19.66	2.0 – 12.0	—	7.09	0	12.57
D5	04/07/01	19.5	19.88	2.0 – 12.0	—	7.67	0	12.21
D6	04/07/01	19.3	19.66	2.0 – 12.0	—	7.78	0	11.88
D7	04/07/01	19.0	19.35	2.0 – 12.0	—	7.44	0	11.91
D8	04/07/01	19.3	19.60	2.0 – 12.0	—	6.91	0	12.69
D9	04/07/01	19.7	20.02	2.0 – 12.0	—	7.16	0	12.86
D10	04/07/01	19.2	19.57	2.0 – 12.0	—	7.43	0	12.14
D11	04/07/01	19.2	19.57	2.0 – 12.0	7.48	8.32	0.84	11.25
D12	04/07/01	18.8	19.14	2.0 – 12.0	—	5.73	0	13.41
D13	04/07/01	18.7	19.02	2.0 – 12.0	—	5.81	0	13.21
D14	04/07/01	19.2	19.57	2.0 – 12.0	—	6.03	0	13.54
D15	04/07/01	20.0	20.41	2.0 – 12.0	—	6.82	0	13.59
D16	04/07/01	18.8	19.13	2.0 – 12.0	—	6.44	0	12.69
D17	04/07/01	18.9	19.22	2.0 – 12.0	—	7.33	0	11.89
D18	04/07/01	18.8	19.18	2.0 – 12.0	—	6.24	0	12.94
D19	04/07/01	18.8	19.13	2.0 – 12.0	—	5.64	0	13.49
D20	04/07/01	18.5	18.90	2.0 – 12.0	—	6.29	0	12.61
D21	04/07/01	18.8	19.23	2.0 – 12.0	—	5.35	0	13.88
D22	04/07/01	19.9	20.30	2.0 – 12.0	NM	NM	NM	NM
D23	04/07/01	18.7	19.07	2.5 – 12.5	—	6.63	0	12.44
D24	04/07/01	18.5	18.84	2.5 – 12.5	—	6.51	0	12.33
MW6	04/07/01	19.6	19.4	2.9 – 12.9	NM	NM	NM	NM
MW11	04/07/01	18.4	18.09	2.3 – 12.3	—	6.8	0	11.29
MW60	04/07/01	19.9	19.70	3.0 – 13.0	—	7.47	0	12.23
MW61	04/07/01	20.0	19.73	3.0 – 13.0	—	7.39	0	12.34
MW63	04/07/01	19.7	19.55	4.0 – 14.0	—	7.44	0	12.11
MW64	04/07/01	18.4	18.18	3.0 – 13.0	—	5.95	0	12.23
P1	04/07/01	19.0	19.42	2.5 – 12.5	—	7.59	0	11.83
P2	04/07/01	20.0	20.34	2.5 – 12.5	—	8.06	0	12.28
P3	04/07/01	19.5	19.91	2.5 – 12.5	—	7.82	0	12.09
P4	04/07/01	19.4	19.79	2.0 – 12.0	—	7.53	0	12.26
P5	04/07/01	19.5	19.84	2.5 – 12.5	—	6.10	0	13.74

NOTES:

BGS Below ground surface
BTOC Below top of casing
MSL Mean sea level
NM Not measured

Table 4. Groundwater Elevations (continued)

Well Number	Date Measured	Elevation (feet MSL)		Depth of Screened Interval (feet BGS)	Depth of Free Product (feet BTOC)	Water Depth (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet MSL)
		Ground Surface	Top of Casing					
Fifteenth Sampling Event – June 2001								
D1	06/08/01	19.7	20.07	2.0 – 12.0	—	8.26	0	11.81
D2	06/08/01	19.3	19.60	2.0 – 12.0	—	7.71	0	11.89
D3/PR-6	06/08/01	19.4	19.13	2.5 – 12.5	below pump	below pump	below pump	below pump
D4	06/08/01	19.4	19.66	2.0 – 12.0	—	7.61	0	12.05
D5	06/08/01	19.5	19.88	2.0 – 12.0	—	8.04	0	11.84
D6	06/08/01	19.3	19.66	2.0 – 12.0	—	7.76	0	11.90
D7	06/08/01	19.0	19.35	2.0 – 12.0	—	7.15	0	12.20
D8	06/08/01	19.3	19.60	2.0 – 12.0	—	7.48	0	12.12
D9	06/08/01	19.7	20.02	2.0 – 12.0	—	7.82	0	12.20
D10	06/08/01	19.2	19.57	2.0 – 12.0	—	7.64	0	11.93
D11	06/08/01	19.2	19.57	2.0 – 12.0	—	7.55	0	12.02
D12	06/08/01	18.8	19.14	2.0 – 12.0	—	6.99	0	12.15
D13	06/08/01	18.7	19.02	2.0 – 12.0	—	6.41	0	12.61
D14	06/08/01	19.2	19.57	2.0 – 12.0	—	6.87	0	12.70
D15	06/08/01	20.0	20.41	2.0 – 12.0	—	7.79	0	12.62
D16	06/08/01	18.8	19.13	2.0 – 12.0	—	7.08	0	12.05
D17	06/08/01	18.9	19.22	2.0 – 12.0	—	7.10	0	12.12
D18	06/08/01	18.8	19.18	2.0 – 12.0	—	7.00	0	12.18
D19	06/08/01	18.8	19.13	2.0 – 12.0	—	6.29	0	12.84
D20	06/08/01	18.5	18.90	2.0 – 12.0	—	6.78	0	12.12
D21	06/08/01	18.8	19.23	2.0 – 12.0	—	6.37	0	12.86
D22	06/08/01	19.9	20.30	2.0 – 12.0	—	8.48	0	11.82
D23	06/08/01	18.7	19.07	2.5 – 12.5	—	7.07	0	12.00
D24	06/08/01	18.5	18.84	2.5 – 12.5	—	6.59	0	12.25
MW6	06/08/01	19.6	19.4	2.9 – 12.9	—	6.17	0	13.23
MW11	06/08/01	18.4	18.09	2.3 – 12.3	—	7.27	0	10.82
MW60	06/08/01	19.9	19.70	3.0 – 13.0	below pump	below pump	below pump	below pump
MW61	06/08/01	20.0	19.73	3.0 – 13.0	—	7.88	0	11.85
MW63	06/08/01	19.7	19.55	4.0 – 14.0	below pump	below pump	below pump	below pump
MW64	06/08/01	18.4	18.18	3.0 – 13.0	—	6.54	0	11.64
P1	06/08/01	19.0	19.42	2.5 – 12.5	—	8.10	0	11.32
P2	06/08/01	20.0	20.34	2.5 – 12.5	—	8.58	0	11.76
P3	06/08/01	19.5	19.91	2.5 – 12.5	—	8.40	0	11.51
P4	06/08/01	19.4	19.79	2.0 – 12.0	—	8.04	0	11.75
P5	06/08/01	19.5	19.84	2.5 – 12.5	—	7.10	0	12.74

NOTES:
BGS Below ground surface
BTOC Below top of casing
MSL Mean sea level

Table 5. Area of Groundwater Contamination

Sampling Event	Area of Benzene Contamination in Groundwater (ft^2)	Area of Free Product (ft^2)
May 1999	22,700	1,850
June 1999	18,600	1,800
July 1999	17,050	2,375 + 500 = 2,875
August 1999	18,000	1,950
September 1999	14,875	2,225
October 1999	15,475	2,850
December 1999	8,575	1,500 + 340 = 1,840
January 2000	10,650	1,770 + 100 = 1,870
March 2000	6,450 + 3,000 = 9,450	580 + 213 = 793
May 2000	6,550 + 2,665 = 8,815	188 + 271 = 459
July 2000	5,250 + 2,550 = 7,800	679
September 2000	6,750 + 2,350 = 9,100	669
November/December 2000	7,600	205
February 2001	7,500	745 + 65 = 459
April 2001	7,100	182
June 2001	5,350	0

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APPENDIX III

SOIL BORING LOGS

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Boring logs for product delineation points D1 through D24, injection wells J1 through J24, observation wells P1 through P5, and product recovery wells MW8A and PR-1 through PR-5 were provided in the Corrective Action Plan–Part B Addendum #1 and First Annual Pilot Study Progress Report (SAIC 2000).

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HTRW DRILLING LOG

HOLE NUMBER AE-PR6

PROJECT: Bldg 728 | INSPECTOR C. Abbott | SHEET 1 OF 1

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	Silty SAND, pale brown				description logged from augercuttings
	2					
	4					
	6					
	7	silty CLAY, brownish yellow				Strong hydrocarbon odor 7 - 9' BGS
	8	sandy silty CLAY, medium gray				
	10					
	12					
	13	END OF DRILLING AT 13.0				
	14					
	16					
	18					
	20					

HTRW DRILLING LOG

HOLE NUMBER AE-PR7

PROJECT: Bldg 728 | INSPECTOR C. Abbott | SHEET 1 OF 1

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	Silty SAND, dark brown to gray				description logged from auger cuttings
	6	Sandy CLAY, light to medium gray				very strong hydrocarbon odor 4-9 ft BGS
	8	silty SAND, wet, medium gray to pale brown				
	15.0	END OF DRILLING AT 15.0 FT				

APPENDIX IV

MONITORING WELL DETAILS

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Well construction diagrams for injection wells J1 through J24, observation wells P1 through P5, and product recovery wells MW8A and PR-1 through PR-5 were provided in the Corrective Action Plan–Part B Addendum #1 and First Annual Pilot Study Progress Report (SAIC 2000).

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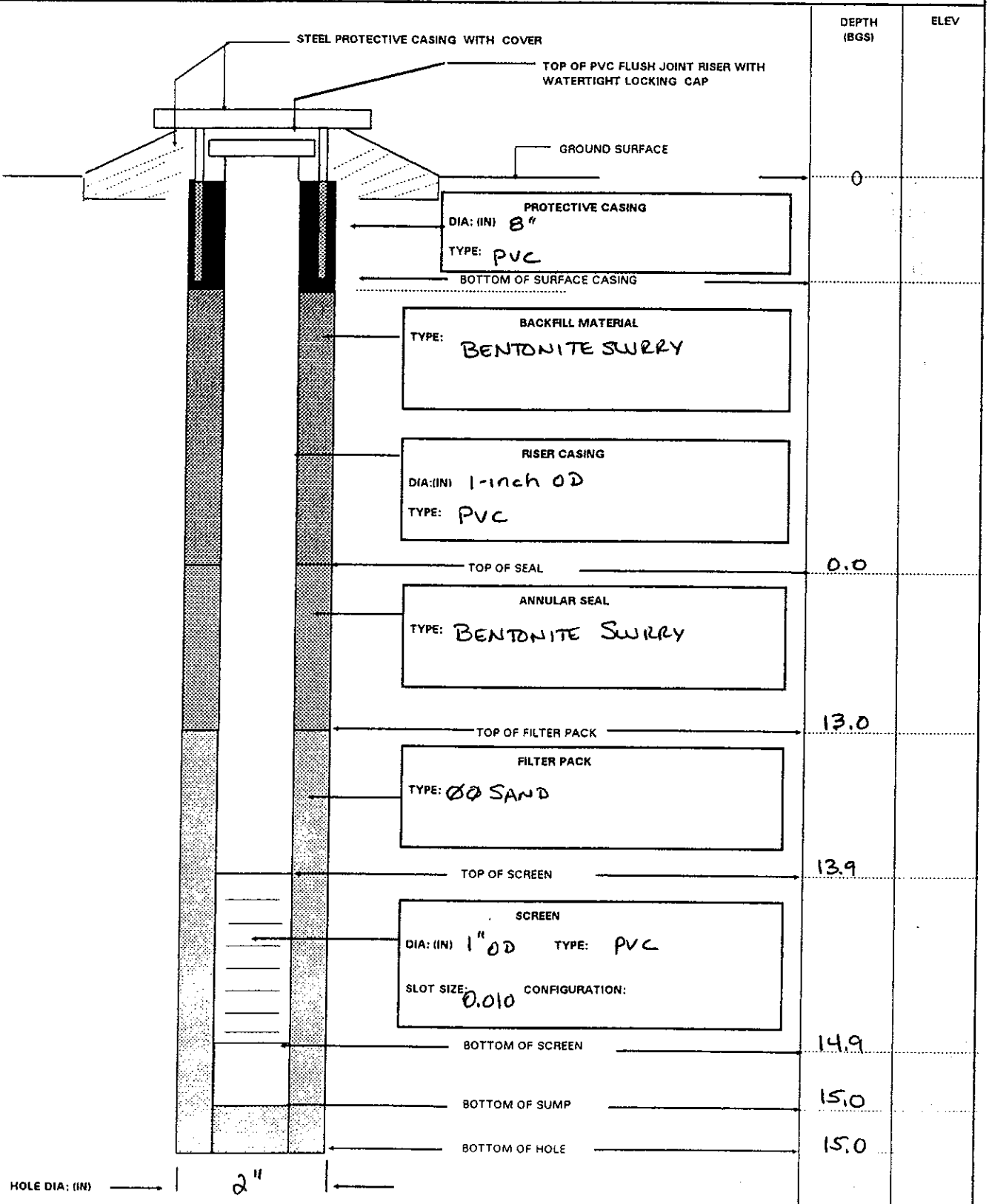
MONITORING WELL

PROJECT: Bldg 728

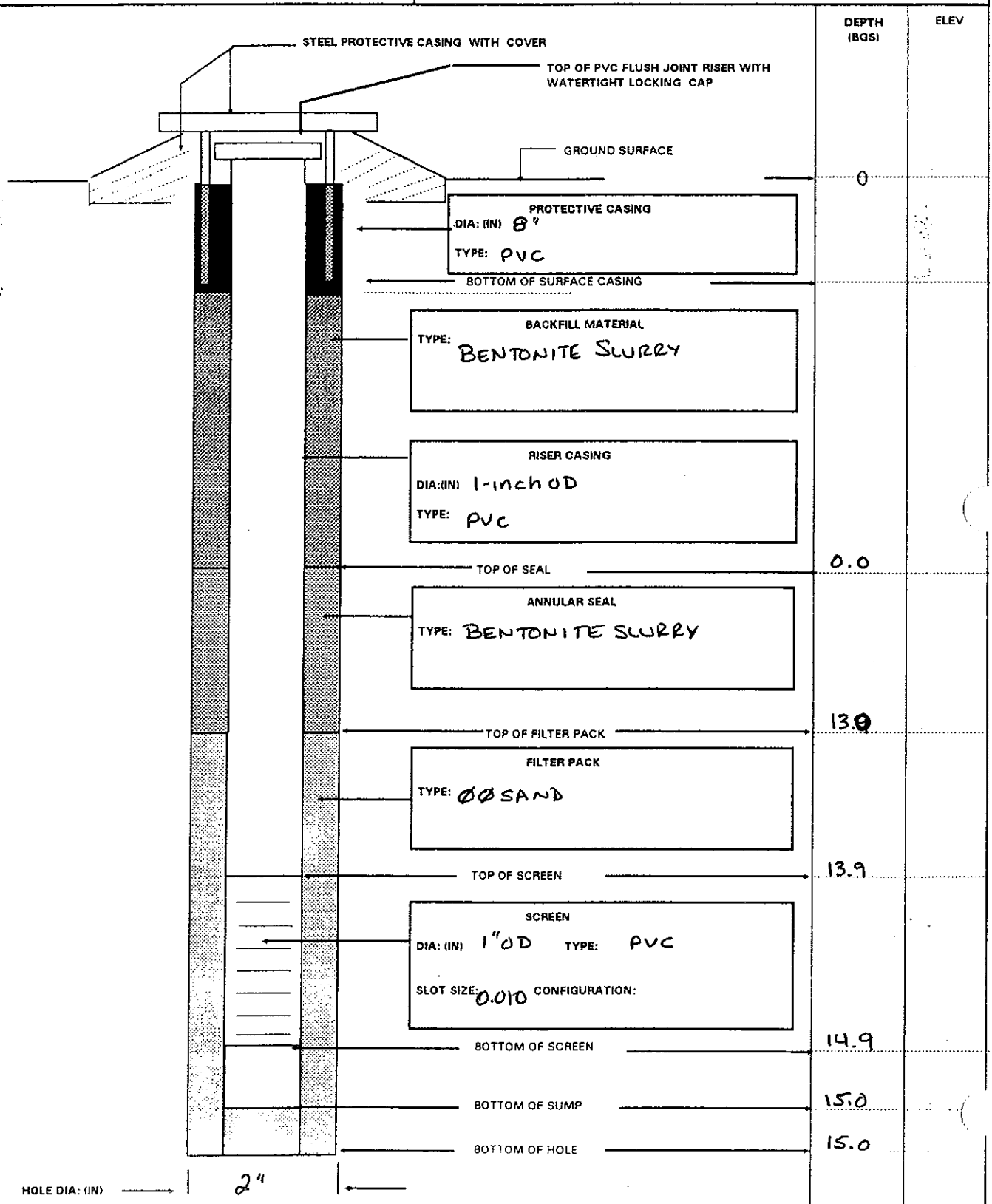
WELL NUMBER: AE-J25	BEGIN: 12/4/00	END: 12/4/00
COORDINATES: N: E:	REFERENCE POINT:	ELEVATION: DATUM/UNITS:
DATUM/UNITS:		



MONITORING WELL

PROJECT: Bldg 728

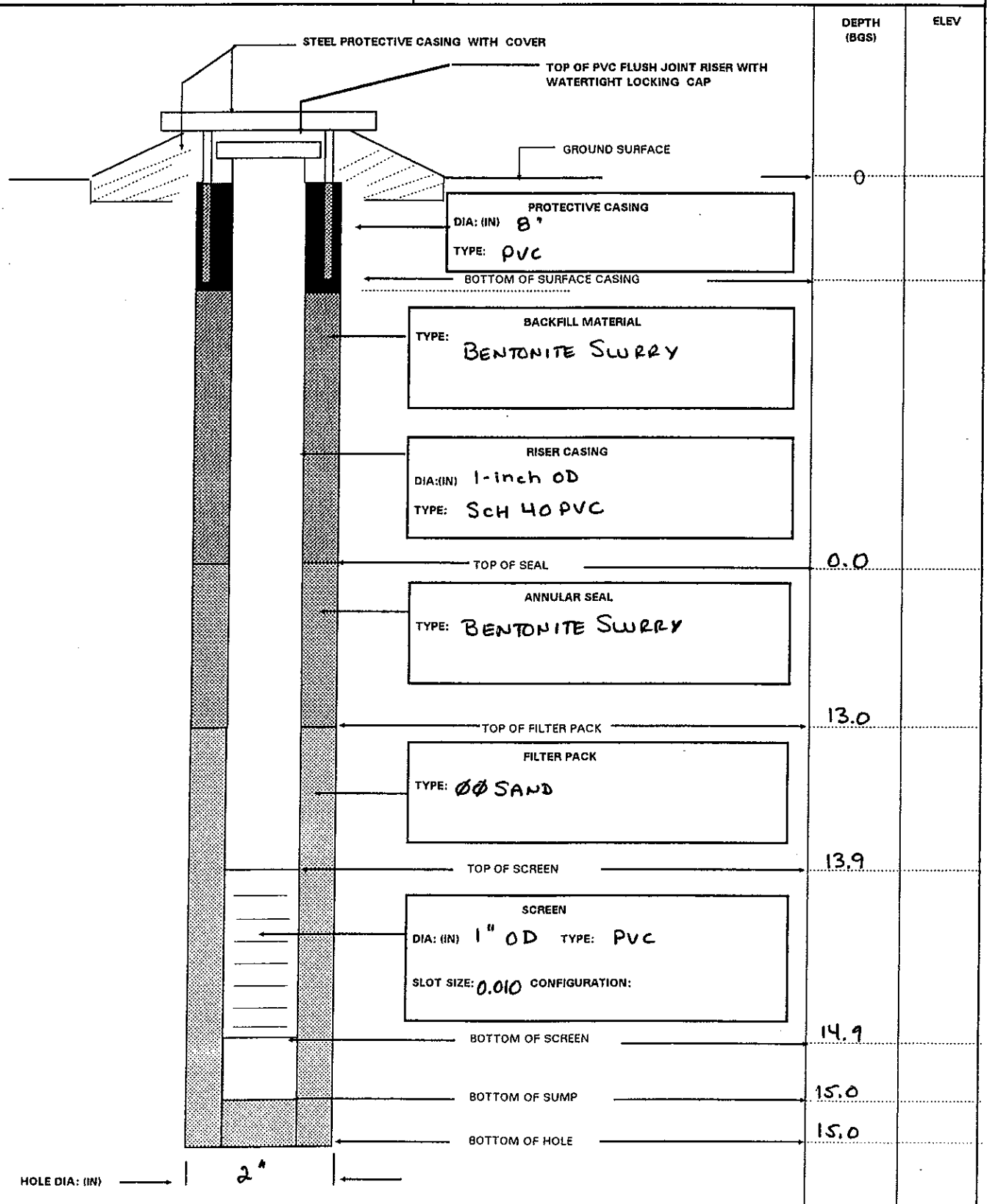
WELL NUMBER: AE-J26	BEGIN: 12/4/00	END: 12/4/00
COORDINATES: N: E:	REFERENCE POINT:	ELEVATION: DATUM/UNITS:
DATUM/UNITS:		



MONITORING WELL

PROJECT: Bldg 728

WELL NUMBER: AE-J27	BEGIN: 12/1/00	END: 12/4/00
COORDINATES: N: E:	REFERENCE POINT:	ELEVATION: DATUM/UNITS:
DATUM/UNITS:		



MONITORING WELL

PROJECT: Bldg 728

WELL NUMBER: AE-PR6

BEGIN: 4/7/01

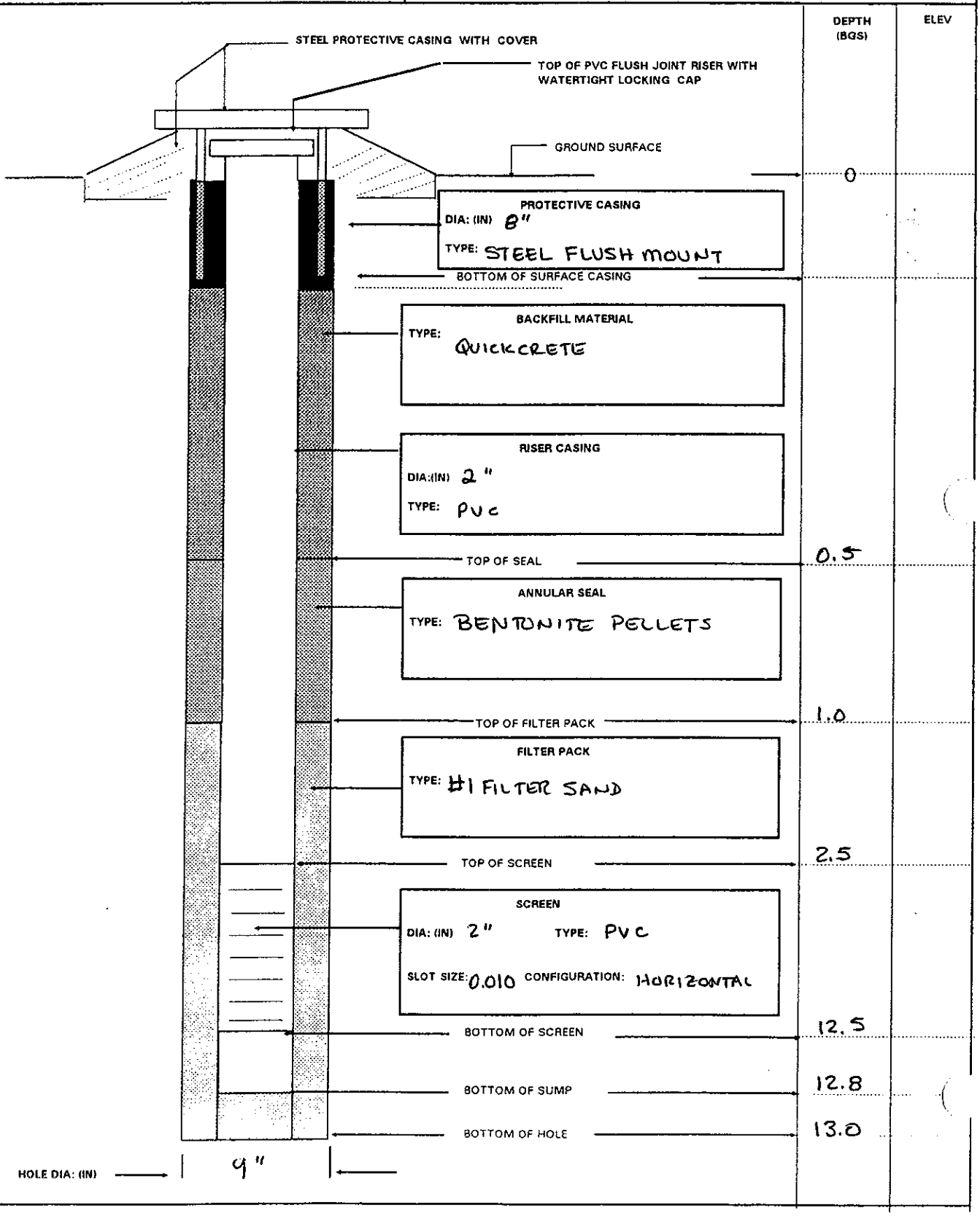
END: 4/7/01

COORDINATES: N:

E:

DATUM/UNITS:

REFERENCE POINT: ELEVATION: DATUM/UNITS:



MONITORING WELL

PROJECT: Bldg 728

WELL NUMBER: AE-PR7

BEGIN: 4/7/01

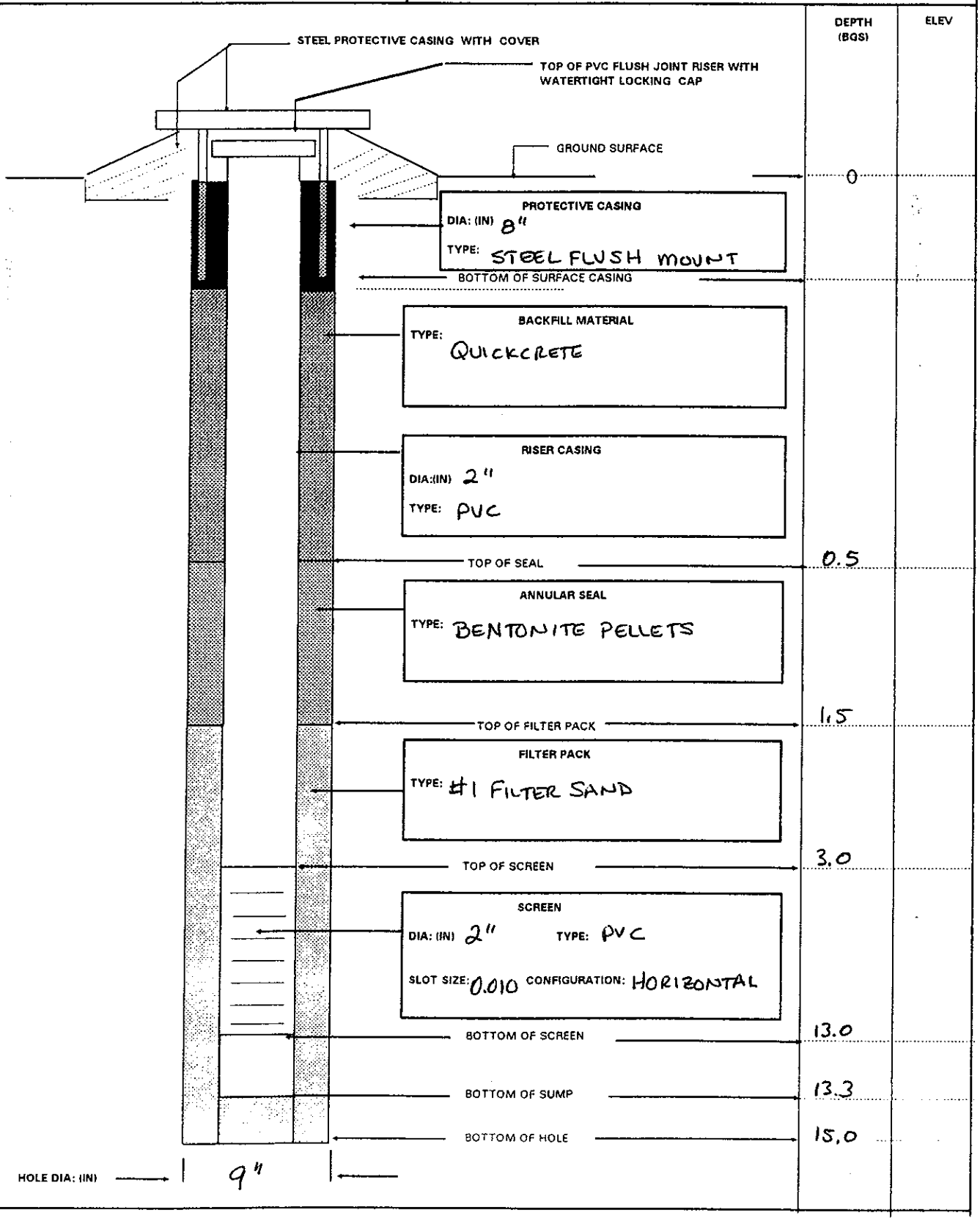
END: 4/7/01

COORDINATES: N:

E:

DATUM/UNITS:

REFERENCE POINT: ELEVATION: DATUM/UNITS:



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APPENDIX V

GROUNDWATER LABORATORY RESULTS

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The laboratory analytical results for the baseline sampling event and the first year of the pilot study (i.e., 1999 through May 2000) were included in the Corrective Action Plan–Part B Addendum #1 and First Annual Pilot Study Progress Report (SAIC 2000).

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TENTH SAMPLING EVENT

JULY 2000

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE06A2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HPSA03W

Matrix: (soil/water) WATER Lab Sample ID: 28563001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8T212

Level: (low/med) LOW Date Received: 07/21/00

% Moisture: not dec. _____ Date Analyzed: 07/25/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	5.8		=
108-88-3	Toluene	0.43	J	=
100-41-4	Ethylbenzene	8.8	B	= F01,F03
1330-20-7	Xylenes (total)	4.3		=

DATA VALIDATION COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE11A2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HPSA03W

Matrix: (soil/water) WATER Lab Sample ID: 28563002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8T211

Level: (low/med) LOW Date Received: 07/21/00

% Moisture: not dec. _____ Date Analyzed: 07/25/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	2.2		=
108-88-3	Toluene	0.52	J	J
100-41-4	Ethylbenzene	1.0 ~~0.87~~	JB	U FOI, FOK
1330-20-7	Xylenes (total)	3.3		=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE60A2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HPSA03W

Matrix: (soil/water) WATER Lab Sample ID: 28563003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8T214

Level: (low/med) LOW Date Received: 07/21/00

% Moisture: not dec. _____ Date Analyzed: 07/25/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene		2.7		=
108-88-3	Toluene		1.0	U	U
100-41-4	Ethylbenzene	1.0	~~0.67~~	JB	U FO1, FO6
1330-20-7	Xylenes (total)		1.6	J	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE61A2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HPSA03W

Matrix: (soil/water) WATER Lab Sample ID: 28563004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8T213

Level: (low/med) LOW Date Received: 07/21/00

% Moisture: not dec. _____ Date Analyzed: 07/25/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 25.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	912		
108-88-3	Toluene	149		
100-41-4	Ethylbenzene	249	B	F01, F08
1330-20-7	Xylenes (total)	679		

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE63A2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HPSA03W

Matrix: (soil/water) WATER Lab Sample ID: 28563005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8T208

Level: (low/med) LOW Date Received: 07/21/00

% Moisture: not dec. _____ Date Analyzed: 07/25/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	27.0		=
108-88-3	Toluene	1.0	U	U
100-41-4	Ethylbenzene	1.1	B	= F01, F08
1330-20-7	Xylenes (total)	9.2		=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED1A2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HPSA04W

Matrix: (soil/water) WATER Lab Sample ID: 28606002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 1U208

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: not dec. _____ Date Analyzed: 08/01/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1.0	U
108-88-3	Toluene	0.90	J
100-41-4	Ethylbenzene	1.5	
1330-20-7	Xylenes (total)	3.1	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED3A2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HPSA04W

Matrix: (soil/water) WATER Lab Sample ID: 28606003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 1U216

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: not dec. _____ Date Analyzed: 08/01/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	87.8	
108-88-3	Toluene	23.7	
100-41-4	Ethylbenzene	182	
1330-20-7	Xylenes (total)	361	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED4A2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HPSA04W

Matrix: (soil/water) WATER Lab Sample ID: 28606004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 1U209

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: not dec. _____ Date Analyzed: 08/01/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1.6	
108-88-3	Toluene	3.1	
100-41-4	Ethylbenzene	4.8	
1330-20-7	Xylenes (total)	166	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED6A2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HPSA04W

Matrix: (soil/water) WATER Lab Sample ID: 28606005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 1U217

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: not dec. _____ Date Analyzed: 08/01/00

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
71-43-2	Benzene	149	
108-88-3	Toluene	85.1	
100-41-4	Ethylbenzene	73.8	
1330-20-7	Xylenes (total)	2210	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED0A2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HPSA04W

Matrix: (soil/water) WATER Lab Sample ID: 28606001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 1U218

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: not dec. _____ Date Analyzed: 08/01/00

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
71-43-2	Benzene	335	
108-88-3	Toluene	3930	
100-41-4	Ethylbenzene	565	
1330-20-7	Xylenes (total)	8490	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDGA2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HPSA04W

Matrix: (soil/water) WATER Lab Sample ID: 28606006

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 1U210

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: not dec. _____ Date Analyzed: 08/01/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: ~~5~~ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	9.6	
108-88-3	Toluene	74.9	
100-41-4	Ethylbenzene	194 ~~166~~	E D
1330-20-7	Xylenes (total)	558 350	E D

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP1A2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HPSA04W

Matrix: (soil/water) WATER Lab Sample ID: 28606007

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 1U305

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: not dec. _____ Date Analyzed: 08/02/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	94.9	
108-88-3	Toluene	1.2	
100-41-4	Ethylbenzene	13.6	
1330-20-7	Xylenes (total)	130	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP2A2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HPSA04W

Matrix: (soil/water) WATER Lab Sample ID: 28606008

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 1U212

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: not dec. _____ Date Analyzed: 08/01/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	24.3	
108-88-3	Toluene	8.7	
100-41-4	Ethylbenzene	4.1	
1330-20-7	Xylenes (total)	49.0	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP3A2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HPSA04W

Matrix: (soil/water) WATER Lab Sample ID: 28606009

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 1U213

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: not dec. _____ Date Analyzed: 08/01/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	46.2	
108-88-3	Toluene	2.0	
100-41-4	Ethylbenzene	7.4	
1330-20-7	Xylenes (total)	133	

DATA VALIDATION COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP4A2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HPSA04W

Matrix: (soil/water) WATER Lab Sample ID: 28606010

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 1U214

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: not dec. _____ Date Analyzed: 08/01/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: USE _____uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	295 ~~310~~	E D	=
108-88-3	Toluene	2.6		=
100-41-4	Ethylbenzene	11.7		=
1330-20-7	Xylenes (total)	17.2		=

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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.: GH0020

PROJECT NAME: HUNTER, BLDG. 728 PILOT STUDY

PROJECT NUMBER: 01-1624-04-1829-210

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name) Laura Lumley

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
AE06AZ	7/19/00	1217	water	2	2		28563001
AE11AZ	7/19/00	1455		2	2		002
AE60AZ	7/19/00	1700		2	2		003
AE61AZ	7/19/00	1320		2	2		004
AE63AZ	7/19/00	1550		2	2		005
HP0032	7/19/00	0730	↓	2	2		006

7-22

7/21/00

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME: SAIC	7/21/00 1115	COMPANY NAME: GEC	7-21-00 1455
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEC	7/21/00 1115	COMPANY NAME:	
RELINQUISHED BY	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:	7/21/00	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 12

Cooler ID: #4

Cooler Temperature: 4.0°

FEDEX NUMBER:

An Employee-Owned Company
Science Applications International Corporation

500 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.: GH0021

PROJECT NAME: HAAF Bldg 728 Pilot Study

PROJECT NUMBER: 01-1624-04-1929-210

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name) Laura Lumley

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
AED0A2	7/21/00	1200	water	2	2		28606 001
AED1A2	7/21/00	1115		2	2		002
AED3A2	7/21/00	1050		2	2		003
AED4A2	7/21/00	1025		2	2		004
AED6A2	7/21/00	1140		2	2		005
AEDGA2	7/21/00	1105		2	2		006
AEP1A2	7/21/00	1315		2	2		007
AEP2A2	7/21/00	1310		2	2		008
AEP3A2	7/21/00	1245		2	2		009
AEP4A2	7/21/00	1215		2	2		010
HP0033	7/21/00	0740	↓	2	2		011

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29417

PHONE NO: (803) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	7/24/00 1205	Patricia Dowr	7/24/00 14:45
COMPANY NAME: SAIC		COMPANY NAME: GEL	
RECEIVED BY: Raynal Reed	Date/Time 7/24/00 1205	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL		COMPANY NAME:	
RELINQUISHED BY: Raynal Reed	Date/Time 7/24/00 1445	RECEIVED BY:	Date/Time
COMPANY NAME: GEL		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 22

Cooler ID: #5

Cooler Temperature: 4°c

FEDEX NUMBER:

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ELEVENTH SAMPLING EVENT

SEPTEMBER 2000

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE06B2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2D414

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/05/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	1.0	2.6		=
108-88-3	Toluene		~~0.37~~	J	U F04,F06
100-41-4	Ethylbenzene		6.1		=
1330-20-7	Xylenes (total)		1.7	J	J

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DUPLICATE

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE06B4

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2D341

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/05/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	5.1		=
108-88-3	Toluene	1.0 ~~0.34~~	J	U FOR FOL
100-41-4	Ethylbenzene	7.0		=
1330-20-7	Xylenes (total)	1.1	J	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE11B2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2D342

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/05/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	0.30	J	J
108-88-3	Toluene	1.0	U	U
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	0.15	J	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE60B2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903011

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2D416

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/05/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.2		
108-88-3	Toluene	1.0	U	
100-41-4	Ethylbenzene	0.40	J	
1330-20-7	Xylenes (total)	0.46	J	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE61B2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2D343

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/05/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	4.5		=
108-88-3	Toluene	13.2		= FOY, FO8
100-41-4	Ethylbenzene	2.0		=
1330-20-7	Xylenes (total)	11.7		=

DATA VALIDATION COPY

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE63B2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2D344

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/05/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	3.3		=
108-88-3	Toluene	1.0 ~~0.34~~	J	U F04, F08
100-41-4	Ethylbenzene	0.61	J	J
1330-20-7	Xylenes (total)	3.7		=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED1B2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903013

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2D417

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/05/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.6		=
108-88-3	Toluene	1.0 ~~0.92~~	J	U FD4, FD6
100-41-4	Ethylbenzene	0.46	J	J
1330-20-7	Xylenes (total)	4.1		=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED3B2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903014

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2D418

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/05/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	660	E
108-88-3	Toluene	540	E
100-41-4	Ethylbenzene	579	E
1330-20-7	Xylenes (total)	1730	E

J NO3, F04, F08

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED4B2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903015

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2D431

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/05/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	763		=
108-88-3	Toluene	10 ~~4.3~~	J	= FD4, FD6
100-41-4	Ethylbenzene	46.4	B	= FD1, FD3
1330-20-7	Xylenes (total)	91.1	B	= FD1, FD8

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED6B2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903016

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2D507

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/06/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 20.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	742		=
108-88-3	Toluene	367		= FOY, FOB
100-41-4	Ethylbenzene	195		=
1330-20-7	Xylenes (total)	2410		=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED0B2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903012

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2E118

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/09/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 2500.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	2500	U	U = F04, F08
108-88-3	Toluene	99900		
100-41-4	Ethylbenzene	60000		
1330-20-7	Xylenes (total)	617000		

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDGB2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903017

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2D433

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/05/00

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	
71-43-2	Benzene	146		=
108-88-3	Toluene	3800		= FD4, FD8
100-41-4	Ethylbenzene	1190	B	= FD1, FD8
1330-20-7	Xylenes (total)	5830	B	= FD1, FD8

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP1B2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903006

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2D345

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/05/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	33.6		=
108-88-3	Toluene	2.3		U FQ4, F07
100-41-4	Ethylbenzene	10.4		=
1330-20-7	Xylenes (total)	49.7		=

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DUPLICATE

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP1B4

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903007

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2D346

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/05/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	21.2		=
108-88-3	Toluene	1.0		U FOY, FOL
100-41-4	Ethylbenzene	4.8		=
1330-20-7	Xylenes (total)	23.8		=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP2B2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903008

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2D347

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/05/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	21.3		=
108-88-3	Toluene	2.0		U FD4,FD7
100-41-4	Ethylbenzene	2.3		=
1330-20-7	Xylenes (total)	10.5		=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP3B2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903009

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2D348

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/05/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	27.0		U
108-88-3	Toluene	1.0 ~~0.26~~	J	U FD4, FD6
100-41-4	Ethylbenzene	3.0		U
1330-20-7	Xylenes (total)	33.3		U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP4B2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: HP3A05W

Matrix: (soil/water) WATER Lab Sample ID: 31903010

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2D415

Level: (low/med) LOW Date Received: 09/28/00

% Moisture: not dec. _____ Date Analyzed: 10/05/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	0.91	J	J
108-88-3	Toluene	2.0	U	U F04,F07
100-41-4	Ethylbenzene	1.4	U	U
1330-20-7	Xylenes (total)	12.6	U	U

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SAIC An Employee-Owned Company
Science Applications International Corporation
00 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

19L

CHAIN OF CUSTODY RECORD

COC NO.: GHØØZZ

PROJECT NAME: HAAF Bldg 728 Pilot Study

PROJECT NUMBER: 01-1624-04-1929-210

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name)

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29417

PHONE NO: (803) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
AED6BZ	9/26/00	1635	water	2	2		3190300 1
AED6B4	9/26/00	1635		2	2		002
AE11BZ	9/26/00	1305		2	2		003
AE61BZ	9/26/00	1025		2	2		004
AE63BZ	9/26/00	1440		2	2		005
AEP1BZ	9/26/00	1155		2	2		006
AEP1B4	9/26/00	1155		2	2		007
AEP2BZ	9/26/00	1610		2	2		008
AEP3BZ	9/26/00	1200		2	2		009
AEP4BZ	9/26/00	1620		2	2		010
AE60BZ	9/26/00	1535		2	2		011
AED0BZ	9/26/00	1325		2	2		012
AED1BZ	9/26/00	1505		2	2		013

RELINQUISHED BY: Laura Lumley	Date/Time 9/28/00	RECEIVED BY: Paulette J Wendell	Date/Time 9/28/00	TOTAL NUMBER OF CONTAINERS:	Cooler Temperature: 2.6°
COMPANY NAME: SAIC		COMPANY NAME: GEL	1314	Cooler ID: #676	FEDEX NUMBER:
RECEIVED BY:	Date/Time	RELINQUISHED BY: Paulette Wendell	Date/Time 9/28/00		
COMPANY NAME:		COMPANY NAME: GEL	1600		
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time 9/28/00		
COMPANY NAME:		COMPANY NAME: GEL	1600		

V-44

00

Science Applications International Corporation

800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.: GH0022

PROJECT NAME: HAAF Bldg 728 Pilot Study

PROJECT NUMBER: 01-1624-04-1929-210

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
AED3B2	9/26/00	1035	water	2	2		31903014
AED4B2	9/26/00	1030		2	2		015
AED6B2	9/26/00	1510		2	2		016
AEDGB2	9/26/00	1335		2	2		017
HP0034	9/26/00	0730	↓	2	2		018

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road Charleston, SC 29417

PHONE NO: (803) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME: SAIC	9/28/00	COMPANY NAME: GEL	9/28/00 1314
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
COMPANY NAME:		COMPANY NAME: GEL	9/28/00 1600
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME: GEL	9/28/00 1600

TOTAL NUMBER OF CONTAINERS: 36

Cooler ID: # 6716

Cooler Temperature: 2.6°

FEDEX NUMBER:

V-45

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TWELFTH SAMPLING EVENT

NOVEMBER/DECEMBER 2000

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE60C2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 34805

Matrix: (soil/water) WATER Lab Sample ID: 34805011

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2M542

Level: (low/med) LOW Date Received: 12/02/00

% Moisture: not dec. _____ Date Analyzed: 12/09/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	6.5		=
108-88-3	Toluene	1.0	U	4
100-41-4	Ethylbenzene	0.18	J	J
1330-20-7	Xylenes (total)	0.38	J	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE61C2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 34805

Matrix: (soil/water) WATER Lab Sample ID: 34805013

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2M545

Level: (low/med) LOW Date Received: 12/02/00

% Moisture: not dec. _____ Date Analyzed: 12/09/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	38.6	
108-88-3	Toluene	16.3	
100-41-4	Ethylbenzene	52.2	
1330-20-7	Xylenes (total)	167	

DATA VALIDATION COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE63C2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 34805

Matrix: (soil/water) WATER Lab Sample ID: 34805012

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2M544

Level: (low/med) LOW Date Received: 12/02/00

% Moisture: not dec. _____ Date Analyzed: 12/09/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	0.56	J	J
108-88-3	Toluene	1.0	U	U
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	0.38	J	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED3C2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 34805

Matrix: (soil/water) WATER Lab Sample ID: 34805001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2M406

Level: (low/med) LOW Date Received: 12/02/00

% Moisture: not dec. _____ Date Analyzed: 12/07/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

USE

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	338	~~526~~	~~E~~ D	
108-88-3	Toluene		43.3		
100-41-4	Ethylbenzene	341	~~384~~	~~E~~ D	
1330-20-7	Xylenes (total)	718	~~923~~	~~E~~ D	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED4C2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 34805

Matrix: (soil/water) WATER Lab Sample ID: 34805002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2M536

Level: (low/med) LOW Date Received: 12/02/00

% Moisture: not dec. _____ Date Analyzed: 12/09/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	545	
108-88-3	Toluene	10.0	U
100-41-4	Ethylbenzene	62.2	
1330-20-7	Xylenes (total)	64.9	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED6C2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 34805

Matrix: (soil/water) WATER Lab Sample ID: 34805003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2M534

Level: (low/med) LOW Date Received: 12/02/00

% Moisture: not dec. _____ Date Analyzed: 12/09/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 20.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1140	
108-88-3	Toluene	80.2	
100-41-4	Ethylbenzene	66.2	
1330-20-7	Xylenes (total)	860	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED7C2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 34805

Matrix: (soil/water) WATER Lab Sample ID: 34805004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2M537

Level: (low/med) LOW Date Received: 12/02/00

% Moisture: not dec. _____ Date Analyzed: 12/09/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	633	
108-88-3	Toluene	10.0	
100-41-4	Ethylbenzene	870	
1330-20-7	Xylenes (total)	1010	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED9C2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 34805

Matrix: (soil/water) WATER Lab Sample ID: 34805005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2M412

Level: (low/med) LOW Date Received: 12/02/00

% Moisture: not dec. _____ Date Analyzed: 12/07/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

USE

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	885	~~588~~	~~E~~ D	=
108-88-3	Toluene		25.0		=
100-41-4	Ethylbenzene	600	~~392~~	~~E~~ D	=
1330-20-7	Xylenes (total)	2150	~~1020~~	~~E~~ D	=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED0C2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 34805

Matrix: (soil/water) WATER Lab Sample ID: 34805006

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2N109

Level: (low/med) LOW Date Received: 12/02/00

% Moisture: not dec. _____ Date Analyzed: 12/11/00

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
71-43-2	Benzene	67.2	
108-88-3	Toluene	985	
100-41-4	Ethylbenzene	167	
1330-20-7	Xylenes (total)	7570	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDBC2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 34805

Matrix: (soil/water) WATER Lab Sample ID: 34805007

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2M530

Level: (low/med) LOW Date Received: 12/02/00

% Moisture: not dec. _____ Date Analyzed: 12/09/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	15.9	
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	2.2	
1330-20-7	Xylenes (total)	4.8	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDDC2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 34805

Matrix: (soil/water) WATER Lab Sample ID: 34805008

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2M531

Level: (low/med) LOW Date Received: 12/02/00

% Moisture: not dec. _____ Date Analyzed: 12/09/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	87.0	
108-88-3	Toluene	0.72	J
100-41-4	Ethylbenzene	96.8	
1330-20-7	Xylenes (total)	113	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDGC2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 34805

Matrix: (soil/water) WATER Lab Sample ID: 34805009

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2M538

Level: (low/med) LOW Date Received: 12/02/00

% Moisture: not dec. _____ Date Analyzed: 12/09/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	4.6	
108-88-3	Toluene	54.5	
100-41-4	Ethylbenzene	29.7	
1330-20-7	Xylenes (total)	269	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDJC2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 34805

Matrix: (soil/water) WATER Lab Sample ID: 34805010

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2M540

Level: (low/med) LOW Date Received: 12/02/00

% Moisture: not dec. _____ Date Analyzed: 12/09/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	108	E
108-88-3	Toluene	0.70	J
100-41-4	Ethylbenzene	18.9	
1330-20-7	Xylenes (total)	23.8	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP1C2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 34805

Matrix: (soil/water) WATER Lab Sample ID: 34805014

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2M419

Level: (low/med) LOW Date Received: 12/02/00

% Moisture: not dec. _____ Date Analyzed: 12/07/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1.2	
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	0.28	J
1330-20-7	Xylenes (total)	1.6	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP2C2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 34805

Matrix: (soil/water) WATER Lab Sample ID: 34805015

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2M420

Level: (low/med) LOW Date Received: 12/02/00

% Moisture: not dec. _____ Date Analyzed: 12/07/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	6.2	
108-88-3	Toluene	1.0	U
100-41-4	Ethylbenzene	0.81	J
1330-20-7	Xylenes (total)	3.4	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP4C2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 34805

Matrix: (soil/water) WATER Lab Sample ID: 34805016

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 2M421

Level: (low/med) LOW Date Received: 12/02/00

% Moisture: not dec. _____ Date Analyzed: 12/07/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	3.3	
108-88-3	Toluene	1.9	
100-41-4	Ethylbenzene	1.4	
1330-20-7	Xylenes (total)	5.0	

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800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

1 of 2

CHAIN OF CUSTODY RECORD

COC NO.: GH0023

PROJECT NAME: HUNTER, BLDG. 728 PILOT STUDY

PROJECT NUMBER: 01-1624-04-1829-210

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

	Sample ID	Date Collected	Time Collected	Matrix	BTEX	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
01	AED3CZ	12/1/00	1005	water	2	2		
02	AED4CZ	12/1/00	1015		2	2		
03	AED6CZ	12/1/00	1405		2	2		
04	AED7CZ	12/1/00	1315		2	2		
05	AED9CZ	12/1/00	1025		2	2		
06	AED0CZ	12/1/00	1450		2	2		
07	AEDBCZ	12/1/00	1220		2	2		
08	AEDDCZ	12/1/00	1110		2	2		
09	AEDGCZ	12/1/00	1225		2	2		
10	AEDJCZ	12/1/00	1130		2	2		
11	AE60CZ	12/1/00	1615		2	2		
12	AE63CZ	12/1/00	1625		2	2		
13	AE61CZ	12/1/00	1655		2	2		

RELINQUISHED BY: Laura Lumley	Date/Time 12/2/00 1040	RECEIVED BY: Patricia Dover	Date/Time 12/2/00 13:30	TOTAL NUMBER OF CONTAINERS:	Cooler Temperature:
COMPANY NAME: SAIC		COMPANY NAME: GEL		Cooler ID: #540	FEDEX NUMBER:
RECEIVED BY: Rob Howard	Date/Time 12/2/00 1040	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			
RELINQUISHED BY: Rob Howard	Date/Time 12/2/00 1341	RECEIVED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			

SAIC An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

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CHAIN OF CUSTODY RECORD

COC NO.: GH ØØZ3

20001210471
34805 9

PROJECT NAME: HUNTER, BLDG. 728 PILOT STUDY

PROJECT NUMBER: 01-1624-04-1829-210

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road Charleston, SC 29407

PHONE NO: (843) 556-8171

REQUESTED PARAMETERS

	Sample ID	Date Collected	Time Collected	Matrix	BTEX	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
14	AEP1CZ	12/1/00	1525	water	2	2		
15	AEP2CZ	12/1/00	1340	↓	2	2		
16	AEP4CZ	12/1/00	1510	↓	2	2		
17	HPØØ38	12/1/00	0820	↓	2	2		

LL 12/2/00

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley; COMPANY NAME: SAIC	12/2/00 1040	Patricia Dower; COMPANY NAME: GEL	12/2/00 13:30
RECEIVED BY: Ron P Haner; COMPANY NAME: GEL	12/2/00 1040	RELINQUISHED BY: ; COMPANY NAME:	
RELINQUISHED BY: Ron P Haner; COMPANY NAME: GEL	12/2/00 1340	RECEIVED BY: ; COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 34

Cooler ID: #540

Cooler Temperature:

FEDEX NUMBER:

THIRTEENTH SAMPLING EVENT

FEBRUARY 2001

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE60D2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 37224

Matrix: (soil/water) WATER Lab Sample ID: 37224005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8W118

Level: (low/med) LOW Date Received: 02/05/01

% Moisture: not dec. _____ Date Analyzed: 02/12/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	2.0	1.3	J	J
108-88-3	Toluene		~~0.34~~	JB	U FO1,FO6
100-41-4	Ethylbenzene		0.45	J	J
1330-20-7	Xylenes (total)		0.70	J	J

MMP 3/9/01

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE61D2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 37224

Matrix: (soil/water) WATER Lab Sample ID: 37224006

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8W308

Level: (low/med) LOW Date Received: 02/05/01

% Moisture: not dec. _____ Date Analyzed: 02/14/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 2.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	43.2		= FD1, FD8
108-88-3	Toluene	12.7	B	
100-41-4	Ethylbenzene	144		= FD1, FD8
1330-20-7	Xylenes (total)	419	B	

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE63D2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 37224

Matrix: (soil/water) WATER Lab Sample ID: 37224007

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8W120

Level: (low/med) LOW Date Received: 02/05/01

% Moisture: not dec. _____ Date Analyzed: 02/12/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	2.0	0.35	J	J
108-88-3	Toluene		~~0.34~~	JB	U FO1, FO6
100-41-4	Ethylbenzene		0.19	J	J
1330-20-7	Xylenes (total)		0.50	J	J

MMB 3/9/01

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED3D2DL

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 37224

Matrix: (soil/water) WATER Lab Sample ID: 37224008

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8W327

Level: (low/med) LOW Date Received: 02/05/01

% Moisture: not dec. _____ Date Analyzed: 02/14/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 50.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

DO NOT USE

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND			
71-43-2	Benzene	66.4	DJ	J
108-88-3	Toluene	2280	DB	= F01, F08
100-41-4	Ethylbenzene	443	D	=
1330-20-7	Xylenes (total)	7950	DB	= F01, F08

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED4D2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 37224

Matrix: (soil/water) WATER Lab Sample ID: 37224009

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8W212

Level: (low/med) LOW Date Received: 02/05/01

% Moisture: not dec. _____ Date Analyzed: 02/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 2.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	197		=
108-88-3	Toluene	30.5	B	= F01, F08
100-41-4	Ethylbenzene	15.9		=
1330-20-7	Xylenes (total)	135		=

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED6D2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 37224

Matrix: (soil/water) WATER Lab Sample ID: 37224010

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8W213

Level: (low/med) LOW Date Received: 02/05/01

% Moisture: not dec. _____ Date Analyzed: 02/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 2.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	157		=
108-88-3	Toluene	11.5	B	= F01, F08
100-41-4	Ethylbenzene	42.4		=
1330-20-7	Xylenes (total)	500		=

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED7D2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 37224

Matrix: (soil/water) WATER Lab Sample ID: 37224011

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8W221

Level: (low/med) LOW Date Received: 02/05/01

% Moisture: not dec. _____ Date Analyzed: 02/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	724		U F01, F07
108-88-3	Toluene	22.5	B	J N03
100-41-4	Ethylbenzene	1010	E	
1330-20-7	Xylenes (total)	1160		

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED9D2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 37224

Matrix: (soil/water) WATER Lab Sample ID: 37224012

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8W222

Level: (low/med) LOW Date Received: 02/05/01

% Moisture: not dec. _____ Date Analyzed: 02/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 25.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	50	1180		=
108-88-3	Toluene		~~46.7~~	JB	U FD1,F06
100-41-4	Ethylbenzene		884		=
1330-20-7	Xylenes (total)		2910		=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED0D2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 37224

Matrix: (soil/water) WATER Lab Sample ID: 37224013

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8W311

Level: (low/med) LOW Date Received: 02/05/01

% Moisture: not dec. _____ Date Analyzed: 02/14/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	78.0		
108-88-3	Toluene	970	B	F01, F08
100-41-4	Ethylbenzene	186		
1330-20-7	Xylenes (total)	2740	B	F01, F08

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDBD2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 37224

Matrix: (soil/water) WATER Lab Sample ID: 37224014

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8W207

Level: (low/med) LOW Date Received: 02/05/01

% Moisture: not dec. _____ Date Analyzed: 02/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	2.0	0.28	J	J
108-88-3	Toluene		~~0.86~~	JB	U FO1, FOL
100-41-4	Ethylbenzene		0.39	J	J
1330-20-7	Xylenes (total)		5.0		U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDDD2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 37224

Matrix: (soil/water) WATER Lab Sample ID: 37224015

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8W208

Level: (low/med) LOW Date Received: 02/05/01

% Moisture: not dec. _____ Date Analyzed: 02/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	48.6		=
108-88-3	Toluene	19.2	B	= FO1, FO8
100-41-4	Ethylbenzene	39.9		=
1330-20-7	Xylenes (total)	160		=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDGD2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 37224

Matrix: (soil/water) WATER Lab Sample ID: 37224016

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8W209

Level: (low/med) LOW Date Received: 02/05/01

% Moisture: not dec. _____ Date Analyzed: 02/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	9.4		=
108-88-3	Toluene	21.5	B	= FD1, FD8
100-41-4	Ethylbenzene	12.8		=
1330-20-7	Xylenes (total)	174		=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDJD2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 37224

Matrix: (soil/water) WATER Lab Sample ID: 37224017

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8W312

Level: (low/med) LOW Date Received: 02/05/01

% Moisture: not dec. _____ Date Analyzed: 02/14/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	2.0	63.8		=
108-88-3	Toluene		~~1.0~~	JB	U F01, F06
100-41-4	Ethylbenzene		21.4		=
1330-20-7	Xylenes (total)		19.8	B	= F01, F08

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP1D2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 37224

Matrix: (soil/water) WATER Lab Sample ID: 37224002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8W115

Level: (low/med) LOW Date Received: 02/05/01

% Moisture: not dec. _____ Date Analyzed: 02/12/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	2.0	12.6		=
108-88-3	Toluene		~~1.2~~	JB	U FD1,FD6
100-41-4	Ethylbenzene		3.7		=
1330-20-7	Xylenes (total)		24.4		=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP2D2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 37224

Matrix: (soil/water) WATER Lab Sample ID: 37224003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8W211

Level: (low/med) LOW Date Received: 02/05/01

% Moisture: not dec. _____ Date Analyzed: 02/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	2.0	5.8		=
108-88-3	Toluene		~~1.1~~	JB	U F01, F06
100-41-4	Ethylbenzene		0.76	J	J
1330-20-7	Xylenes (total)		4.7	J	J

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3/9/01

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP4D2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 37224

Matrix: (soil/water) WATER Lab Sample ID: 37224004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8W117

Level: (low/med) LOW Date Received: 02/05/01

% Moisture: not dec. _____ Date Analyzed: 02/12/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	15.7		U F01,F07
108-88-3	Toluene	3.5	B	
100-41-4	Ethylbenzene	0.76	J	
1330-20-7	Xylenes (total)	12.8		

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800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

1 of 2

CHAIN OF CUSTODY RECORD

COC NO.: GHØØZ4

PROJECT NAME: HUNTER, BLDG. 728 PILOT STUDY

PROJECT NUMBER: 01-1624-04-1829-210

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name) Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

	Sample ID	Date Collected	Time Collected	Matrix	BTEX	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
✓	HPØØ39	2/4/01	0740	water	2	2		37224 001
✓	AEP1D2	2/4/01	1300		2	2		002
✓	AEP2D2	2/4/01	1235		2	2		003
✓	AEP4D2	2/4/01	1156		2	2		004
✓	AE6ØD2	2/4/01	1350		2	2		005
✓	AE61D2	2/4/01	1300		2	2		006
✓	AE63D2	2/4/01	1430		2	2		007
✓	AED3D2	2/4/01	0840		2	2		008
✓	AED4D2	2/4/01	0905		2	2		009
✓	AED6D2	2/4/01	1035		2	2		010
✓	AED7D2	2/4/01	0946		2	2		011
✓	AED9D2	2/4/01	1335		2	2		012
✓	AEDØD2	2/4/01	1105		2	2		013

REQUESTED PARAMETERS

		Date/Time		Date/Time	
RELINQUISHED BY: Laura Lumley	RECEIVED BY:		TOTAL NUMBER OF CONTAINERS:	Cooler Temperature:	
COMPANY NAME: SAIC	2/5/01 1115	COMPANY NAME:		Cooler ID: #200	FEDEX NUMBER:
RECEIVED BY: Bill Hocker	Date/Time 2/5/01 1115	RELINQUISHED BY: COMPANY NAME:	Date/Time		
RELINQUISHED BY: Bill Hocker	Date/Time 2/5/01 1335	RECEIVED BY: Cindy Medveldt	Date/Time 02/05/01 1330		
COMPANY NAME: GEL		COMPANY NAME: GEL			

V-85

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800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

2 of 2

CHAIN OF CUSTODY RECORD

COC NO.: GH0024

PROJECT NAME: HUNTER, BLDG. 728 PILOT STUDY

PROJECT NUMBER: 01-1624-04-1829-210

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
AEDBD2	2/4/01	1006	water	2	7		31224 014
AEDDD2	2/4/01	0925		2	2		015
AEDGD2	2/4/01	1130		2	2		016
AEDJD2	2/4/01	1400		2	2		017

2/4/01

RELINQUISHED BY: Laura Lumley	Date/Time 2/5/01 1115	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 34	Cooler Temperature:
COMPANY NAME: SAIC		COMPANY NAME:		Cooler ID: #200	FEDEX NUMBER:
RECEIVED BY:	Date/Time 2/5/01 1115	RELINQUISHED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			
RELINQUISHED BY:	Date/Time 2/5/01 1715	RECEIVED BY: Amy Medlock	Date/Time 02/05/01 1[illegible]		
COMPANY NAME:		COMPANY NAME:			

20010212357

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APRIL 2001

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE60E2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 40384

Matrix: (soil/water) WATER Lab Sample ID: 40384001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8E514

Level: (low/med) LOW Date Received: 04/08/01

% Moisture: not dec. _____ Date Analyzed: 04/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.3		
108-88-3	Toluene	0.29	J	
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	3.0	U	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE61E2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 40384

Matrix: (soil/water) WATER Lab Sample ID: 40384002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8F207

Level: (low/med) LOW Date Received: 04/08/01

% Moisture: not dec. _____ Date Analyzed: 04/17/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 2.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	30.7	
108-88-3	Toluene	66.0	
100-41-4	Ethylbenzene	101	
1330-20-7	Xylenes (total)	283	

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE63E2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 40384

Matrix: (soil/water) WATER Lab Sample ID: 40384003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8E515

Level: (low/med) LOW Date Received: 04/08/01

% Moisture: not dec. _____ Date Analyzed: 04/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	1.0	U	U
108-88-3	Toluene	0.34	J	J
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	3.0	U	U

"Data Validation Copy"

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED3E2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 40455

Matrix: (soil/water) WATER Lab Sample ID: 40455001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8F116

Level: (low/med) LOW Date Received: 04/09/01

% Moisture: not dec. _____ Date Analyzed: 04/16/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	21.8	
108-88-3	Toluene	2.7	
100-41-4	Ethylbenzene	64.0	
1330-20-7	Xylenes (total)	108	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED4E2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 40455

Matrix: (soil/water) WATER Lab Sample ID: 40455002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8F119

Level: (low/med) LOW Date Received: 04/09/01

% Moisture: not dec. ________ Date Analyzed: 04/16/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 5.0

Soil Extract Volume: ________ (uL) Soil Aliquot Volume: ________ (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	476		
108-88-3	Toluene	1.8	J	J
100-41-4	Ethylbenzene	7.5	J	J
1330-20-7	Xylenes (total)	8.4	J	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED6E2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 40455

Matrix: (soil/water) WATER Lab Sample ID: 40455003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8F118

Level: (low/med) LOW Date Received: 04/09/01

% Moisture: not dec. _____ Date Analyzed: 04/16/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	235	
108-88-3	Toluene	8.5	J
100-41-4	Ethylbenzene	25.7	
1330-20-7	Xylenes (total)	211	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED7E2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 40455

Matrix: (soil/water) WATER Lab Sample ID: 40455004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8F117

Level: (low/med) LOW Date Received: 04/09/01

% Moisture: not dec. _____ Date Analyzed: 04/16/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	111		=
108-88-3	Toluene	2.4	J	J
100-41-4	Ethylbenzene	200		=
1330-20-7	Xylenes (total)	226		=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED9E2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 40384

Matrix: (soil/water) WATER Lab Sample ID: 40384005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8E524

Level: (low/med) LOW Date Received: 04/08/01

% Moisture: not dec. _____ Date Analyzed: 04/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	443	
108-88-3	Toluene	14.9	
100-41-4	Ethylbenzene	500	
1330-20-7	Xylenes (total)	1940	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED0E2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 40384

Matrix: (soil/water) WATER Lab Sample ID: 40384004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8E523

Level: (low/med) LOW Date Received: 04/08/01

% Moisture: not dec. _____ Date Analyzed: 04/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 100.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	18.6	J
108-88-3	Toluene	1440	
100-41-4	Ethylbenzene	336	
1330-20-7	Xylenes (total)	14700	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDBE2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 40455

Matrix: (soil/water) WATER Lab Sample ID: 40455005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8F115

Level: (low/med) LOW Date Received: 04/09/01

% Moisture: not dec. _____ Date Analyzed: 04/16/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	0.27	J	J
108-88-3	Toluene	2.0	U	U
100-41-4	Ethylbenzene	2.0	U	U
1330-20-7	Xylenes (total)	5.0	U	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDEE2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 40384

Matrix: (soil/water) WATER Lab Sample ID: 40384006

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8E516

Level: (low/med) LOW Date Received: 04/08/01

% Moisture: not dec. _____ Date Analyzed: 04/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	28.5	
108-88-3	Toluene	0.64	J
100-41-4	Ethylbenzene	60.0	
1330-20-7	Xylenes (total)	106	

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDGE2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 40455

Matrix: (soil/water) WATER Lab Sample ID: 40455006

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8F114

Level: (low/med) LOW Date Received: 04/09/01

% Moisture: not dec. _____ Date Analyzed: 04/16/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	10.9	
108-88-3	Toluene	0.76	J
100-41-4	Ethylbenzene	0.66	J
1330-20-7	Xylenes (total)	43.1	

11.54 =

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDJE2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 40384

Matrix: (soil/water) WATER Lab Sample ID: 40384007

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8F208

Level: (low/med) LOW Date Received: 04/08/01

% Moisture: not dec. _____ Date Analyzed: 04/17/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 2.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	114	
108-88-3	Toluene	1.6	J
100-41-4	Ethylbenzene	33.5	
1330-20-7	Xylenes (total)	124	

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP1E2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 40384

Matrix: (soil/water) WATER Lab Sample ID: 40384008

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8E517

Level: (low/med) LOW Date Received: 04/08/01

% Moisture: not dec. _____ Date Analyzed: 04/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	6.8	
108-88-3	Toluene	0.34	J
100-41-4	Ethylbenzene	1.5	
1330-20-7	Xylenes (total)	8.1	

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP2E2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 40384

Matrix: (soil/water) WATER Lab Sample ID: 40384009

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8E518

Level: (low/med) LOW Date Received: 04/08/01

% Moisture: not dec. _____ Date Analyzed: 04/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	2.9		
108-88-3	Toluene	0.28	J	J
100-41-4	Ethylbenzene	0.26	J	
1330-20-7	Xylenes (total)	1.1	J	↓

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP4E2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 40384

Matrix: (soil/water) WATER Lab Sample ID: 40384010

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8ES19

Level: (low/med) LOW Date Received: 04/08/01

% Moisture: not dec. _____ Date Analyzed: 04/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	0.59	J	J
108-88-3	Toluene	1.0	U	U
100-41-4	Ethylbenzene	1.0	U	U
1330-20-7	Xylenes (total)	0.93	J	J

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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.: GHØØ25

PROJECT NAME: HAAF Bldg. 728 Pilot Study

PROJECT NUMBER: 01-1624-04-1829-210

PROJECT MANAGER: Patty Stoll

Sampler (Signature) [signature] (Printed Name) Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road Charleston, SC 29407

PHONE NO: (843) 556-8171

2001041471

Sample ID	Date Collected	Time Collected	Matrix	BTEX	TCLP Benzene	TCLP Lead	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
PRØ611	4/7/01	1340	Soil		1	1	2		40385 001
PRØ711	4/7/01	1425	Soil		1	1	2		002
AE6ØEZ	4/7/01	1230	Water	2			2		40384 001
AE61EZ	4/7/01	1117		2			2		002
AE63EZ	4/7/01	1332		2			2		003
AEDØEZ	4/7/01	1725		2			2		004
AED9EZ	4/7/01	1645		2			2		005
AEDEEZ	4/7/01	1545		2			2		006
AEDJEZ	4/7/01	1510		2			2		007
AEP1EZ	4/7/01	1435		2			2		008
AEP2EZ	4/7/01	1625		2			2		009
AEP4EZ	4/7/01	1545		2			2		010
HPØØ4Ø	4/7/01	0745		2			2		011

RELINQUISHED BY: [signature] COMPANY NAME: SAIC	Date/Time 4/8/01 1020	RECEIVED BY: [signature] COMPANY NAME: GEL	Date/Time 4/8/01 1335
RECEIVED BY: [signature] COMPANY NAME: GEL	Date/Time 4/8/01 1020	RELINQUISHED BY: COMPANY NAME:	Date/Time
RELINQUISHED BY: [signature] COMPANY NAME: GEL	Date/Time 4/8/01 1335	RECEIVED BY: COMPANY NAME:	Date/Time

TOTAL NUMBER OF CONTAINERS: 26

Cooler ID: #45

Cooler Temperature:

FEDEX NUMBER:

4.0°C

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Science Applications International Corporation
Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.: GH0026

CT NAME: HAAF Bldg. 728 Pilot Study

CT NUMBER: 01-1624-04-1829-210

CT MANAGER: Patty Stoll

r (Signature): Laura Lumley (Printed Name): Laura Lumley

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	TCLP Benzene	TCLP Lead	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
AE D3EZ	4/8/01	1420	water	2					40455-001
AE D4EZ	4/8/01	1155		2					002
AE D6EZ	4/8/01	1100		2					003
AE D7EZ	4/8/01	1238		2					004
AE DBEZ	4/8/01	0935		2					005
AE DGEZ	4/8/01	1015		2					006
HP0041	4/8/01	0740		2					007

QUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS:	Cooler Temperature: 3.0° c
ANY NAME: SAIC	4/9/01 1420	COMPANY NAME: GEL	4/9/01 17:20	Cooler ID: #754	FEDEX NUMBER:
ED BY:	Date/Time 4/9/01 1420	RELINQUISHED BY:	Date/Time		
ANY NAME:		COMPANY NAME:			
QUISHED BY:	Date/Time 4/9/01 1715	RECEIVED BY:	Date/Time		
ANY NAME:		COMPANY NAME:			

V-106

FIFTEENTH SAMPLING EVENT

JUNE 2001

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE60F2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43658

Matrix: (soil/water) WATER Lab Sample ID: 43658009

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N317

Level: (low/med) LOW Date Received: 06/08/01

% Moisture: not dec. _____ Date Analyzed: 06/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	2.0	0.38	J	J
108-88-3	Toluene		~~0.25~~	JB	U F01,F06
100-41-4	Ethylbenzene		0.16	J	J
1330-20-7	Xylenes (total)		5.0	U	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE61F2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43658

Matrix: (soil/water) WATER Lab Sample ID: 43658010

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N318

Level: (low/med) LOW Date Received: 06/08/01

% Moisture: not dec. _____ Date Analyzed: 06/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	2.0	2.0	U	U
108-88-3	Toluene	~~0.28~~		JB	U F01, F06
100-41-4	Ethylbenzene	0.21		J	J
1330-20-7	Xylenes (total)	5.0		U	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE63F2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43658

Matrix: (soil/water) WATER Lab Sample ID: 43658011

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N315

Level: (low/med) LOW Date Received: 06/08/01

% Moisture: not dec. _____ Date Analyzed: 06/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	2.0	2.0	U	U
108-88-3	Toluene		~~0.31~~	JB	U F01, F02
100-41-4	Ethylbenzene		2.0	U	U
1330-20-7	Xylenes (total)		5.0	U	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AER6F2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43658

Matrix: (soil/water) WATER Lab Sample ID: 43658012

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N405

Level: (low/med) LOW Date Received: 06/08/01

% Moisture: not dec. _____ Date Analyzed: 06/14/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	3.1		=
108-88-3	Toluene	2.9	B	U F01, F07
100-41-4	Ethylbenzene	12.1		=
1330-20-7	Xylenes (total)	29.0		=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED4F2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43658

Matrix: (soil/water) WATER Lab Sample ID: 43658005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N321

Level: (low/med) LOW Date Received: 06/08/01

% Moisture: not dec. _____ Date Analyzed: 06/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	412	
108-88-3	Toluene	10 ~~2.0~~	JB
100-41-4	Ethylbenzene	5.0	J
1330-20-7	Xylenes (total)	20.2	J

FO1, FO2

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED6F2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43658

Matrix: (soil/water) WATER Lab Sample ID: 43658006

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: SN322

Level: (low/med) LOW Date Received: 06/08/01

% Moisture: not dec. _____ Date Analyzed: 06/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		
71-43-2	Benzene	364		
108-88-3	Toluene	10 ~~1.9~~	JB	U F01,F0L
100-41-4	Ethylbenzene	29.2		
1330-20-7	Xylenes (total)	93.1		

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED7F2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43658

Matrix: (soil/water) WATER Lab Sample ID: 43658007

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N323

Level: (low/med) LOW Date Received: 06/08/01

% Moisture: not dec. _____ Date Analyzed: 06/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	20	394		=
108-88-3	Toluene		~~6.7~~	JB	U F01, F0L
100-41-4	Ethylbenzene		641		=
1330-20-7	Xylenes (total)		586		=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED9F2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43658

Matrix: (soil/water) WATER Lab Sample ID: 43658008

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N324

Level: (low/med) LOW Date Received: 06/08/01

% Moisture: not dec. _____ Date Analyzed: 06/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 10.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

USR

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	Benzene	988		=
108-88-3	Toluene	28.2	B	U F01, F07
100-41-4	Ethylbenzene	688		=
1330-20-7	Xylenes (total)	2540		=

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED0F2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43658

Matrix: (soil/water) WATER Lab Sample ID: 43658004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N320

Level: (low/med) LOW Date Received: 06/08/01

% Moisture: not dec. _____ Date Analyzed: 06/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	10	1.6	J	J
108-88-3	Toluene		~~2.4~~	JB	U FD1,F06
100-41-4	Ethylbenzene		10.0	U	U
1330-20-7	Xylenes (total)		185		

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDBF2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43658

Matrix: (soil/water) WATER Lab Sample ID: 43658013

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N406

Level: (low/med) LOW Date Received: 06/08/01

% Moisture: not dec. _____ Date Analyzed: 06/14/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	2.0	92.1		=
108-88-3	Toluene		~~1.0~~	JB	U F01, F06
100-41-4	Ethylbenzene		0.49	J	J
1330-20-7	Xylenes (total)		13.2		=

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDDF2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43658

Matrix: (soil/water) WATER Lab Sample ID: 43658014

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N407

Level: (low/med) LOW Date Received: 06/08/01

% Moisture: not dec. _____ Date Analyzed: 06/14/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	2.0	64.8		=
108-88-3	Toluene		~~0.67~~	JB	U FO1,FOL
100-41-4	Ethylbenzene		45.5		=
1330-20-7	Xylenes (total)		97.4		=

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDGF2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43658

Matrix: (soil/water) WATER Lab Sample ID: 43658015

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N408

Level: (low/med) LOW Date Received: 06/08/01

% Moisture: not dec. _____ Date Analyzed: 06/14/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	2.0	9.2		=
108-88-3	Toluene		~~0.35~~	JB	U F01,F06
100-41-4	Ethylbenzene		0.18	J	J
1330-20-7	Xylenes (total)		1.3	J	J

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDJF2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43658

Matrix: (soil/water) WATER Lab Sample ID: 43658016

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N409

Level: (low/med) LOW Date Received: 06/08/01

% Moisture: not dec. _____ Date Analyzed: 06/14/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	2.0	100	JB	=
108-88-3	Toluene		~~0.65~~		U F01, F06
100-41-4	Ethylbenzene		39.4		=
1330-20-7	Xylenes (total)		33.2		=

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP1F2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43658

Matrix: (soil/water) WATER Lab Sample ID: 43658001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N314

Level: (low/med) LOW Date Received: 06/08/01

% Moisture: not dec. _____ Date Analyzed: 06/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	2.0	2.2		=
108-88-3	Toluene		~~0.25~~	JB	U FD1, FD2
100-41-4	Ethylbenzene		2.0	U	U
1330-20-7	Xylenes (total)		1.5	J	J

MAP
7/10/01

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP2F2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43658

Matrix: (soil/water) WATER Lab Sample ID: 43658002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N319

Level: (low/med) LOW Date Received: 06/08/01

% Moisture: not dec. _____ Date Analyzed: 06/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	2.0	0.82	J	J
108-88-3	Toluene		~~0.29~~	JB	U FD1, F06
100-41-4	Ethylbenzene		0.31	J	J
1330-20-7	Xylenes (total)		0.60	J	J

MMP
7/10/01

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP4F2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 43658

Matrix: (soil/water) WATER Lab Sample ID: 43658003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5N316

Level: (low/med) LOW Date Received: 06/08/01

% Moisture: not dec. _____ Date Analyzed: 06/13/01

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q	
71-43-2	Benzene	2.0	0.35	J	J
108-88-3	Toluene		~~0.30~~	JB	U FO1, FOL
100-41-4	Ethylbenzene		2.0	U	U
1330-20-7	Xylenes (total)		5.0	U	U

MMP 7/10/01

FORM I VOA OLM03.0

An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

1 of 2

CHAIN OF CUSTODY RECORD

COC NO.: GH0027

PROJECT NAME: HUNTER, BLDG. 728 PILOT STUDY

PROJECT NUMBER: 01-1624-04-1829-210

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name) Laura Lumley

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
AEP1FZ	6/7/01	1140	water	2	2		43658 001
AEP2FZ	6/7/01	1304		2	2		002
AEP4FZ	6/7/01	1220		2	2		003
AED0FZ	6/7/01	1505		2	2		004
AED4FZ	6/7/01	1440		2	2		005
AED6FZ	6/7/01	1355		2	2		006
AED7FZ	6/7/01	1343		2	2		007
AED9FZ	6/7/01	1515		2	2		008
AE60FZ	6/7/01	1035		2	2		009
AE61FZ	6/7/01	0945		2	2		010
AE63FZ	6/7/01	1115		2	2		011
AER6FZ	6/7/01	1725		2	2		012
AEDBFZ	6/7/01	1600	↓	2	2		013

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road Charleston, SC 29407

PHONE NO: (843) 556-8171

20010697133

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	6/8/01 1110		
COMPANY NAME: SAIC		COMPANY NAME:	
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
	6/8/01 1110		
COMPANY NAME:		COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY: Elizabeth Lyles	Date/Time 6/8/01
	6/8/01 1410		
COMPANY NAME: GEL		COMPANY NAME: GEL	

TOTAL NUMBER OF CONTAINERS:

Cooler ID: #6484

Cooler Temperature:

FEDEX NUMBER:

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2 of 2

CHAIN OF CUSTODY RECORD

COC NO.: GH0027

PROJECT NAME: HUNTER, BLDG. 728 PILOT STUDY

PROJECT NUMBER: 01-1624-04-1829-210

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

Sample ID	Date Collected	Time Collected	Matrix	BTEX	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
EDDFZ	6/7/01	1615	water	2	2		D14
EDGFZ	6/7/01	1625	↓	2	2		015
EDJFZ	6/7/01	1652	↓	2	2		016
IP0042	6/7/01	0730	↓	2	2		017

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	6/8/01		
COMPANY NAME: SAIC	1110	COMPANY NAME:	
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
	6/8/01		
COMPANY NAME:	1110	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY: Elizabeth Lyster	Date/Time 6/8/01
COMPANY NAME:	1410	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 34

Cooler ID: #6834

Cooler Temperature:

FEDEX NUMBER:

V-126

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APPENDIX VI

SITE RANKING FORM

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SITE RANKING FORM

Facility Name: Former Building 728 **Ranked by:** S. Stoller

County: Chatham **Facility ID #:** 9-025049 **Date Ranked:** 7/12/2001

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 WB5901 at 4' – 6'*

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

** 1997 CAP-Part B sample WB5901 at 4' – 6'*

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. 50) + (B. 50) = (100) x (C. 10) = (D. 1000)**

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

** June 2001 Corrective Action Sample (D9)*

Fill in the blanks: **(E. 0) + (F. 50) = (G. 50)**

Facility Name: Former Building 728 **Facility ID #:** 9-025049

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. 50 **) x (L.** 50 **) = M.** 2500

(M. 2500 **) + (D.** 1000 **) = N.** 3500

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.** 3500 **) x (P.** 1 **) = (** 3500 **) + (Q.** 0 **)**

= 3500 (based on June 2001 groundwater concentration in D9)
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 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 are not hydraulically connected to the surficial aquifer.

1.0 REGIONAL AND LOCAL GEOLOGY

Fort Stewart is located within the coastal plain physiographic province. This province is typified by nine southeastward-dipping strata that increase in thickness from 0 feet at the fall line located approximately 150 miles inland from the Atlantic coast, to approximately 4,200 feet at the coast. State geologic records describe a probable petroleum exploration well (the No. 1 Jelks-Rogers) located in the region as encountering crystalline basement rocks at a depth of 4,254 feet below ground surface (BGS). This well provides the most complete record for Cretaceous, Tertiary, and Quaternary sedimentary strata in the region.

The Cretaceous section was found to be approximately 1,970 feet thick and dominated by clastics. The Tertiary section was found to be approximately 2,170 feet thick and dominated by limestone with a 175-foot-thick cap of dark green phosphatic clay. This clay is regionally extensive and is known as the Hawthorn Group. The interval from approximately 110 feet to the surface is Quaternary in age and composed primarily of sand with interbeds of clay or silt. This section is undifferentiated into separate formations (Herrick and Vochis 1963).

State geologic records contain information regarding a well drilled in October 1942, 1.8 miles north of Flemington at Liberty Field of Camp Stewart (now known as Fort Stewart). This well is believed to be an artesian well located approximately one-quarter mile north of the runway at Wright Army Airfield within the Fort Stewart Military Reservation. The log for this well describes a 410-foot section, the lowermost 110 feet of which consisted predominantly of limestone sediments, above which 245 feet of dark green phosphatic clay typical of the Hawthorn Group were encountered. The uppermost portion of the section was found to be Quaternary-age interbedded sands and clays. The top 15 feet of these sediments were described as sandy clay (Herrick and Vochis 1963).

The surface soil located throughout the Fort Stewart garrison area consists of Stilson loamy sand. The surface layer of this soil is typically dark grayish-brown loamy sand measuring approximately 6 inches in depth. The surface layer is underlain by material consisting of pale yellow loamy sand and extends to a depth of approximately 29 inches. The subsoil is predominantly sandy clay loam and extends to a depth of 72 inches or more (Herrick and Vochis 1963).

2.0 REGIONAL AND LOCAL HYDROGEOLOGY

The hydrogeology in the vicinity of Fort Stewart is dominated by two aquifers referred to as the Principal Artesian and the surficial aquifers. The Principal Artesian 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 is composed primarily of Tertiary-age limestone, including the Bug Island Formation, the Ocala Group, and the Suwannee Limestone. These formations are approximately 800 feet thick, and groundwater from this aquifer is used primarily for drinking water (Arora 1984).

The uppermost hydrologic unit is the surficial aquifer, which consists of widely varying amounts of sand and clay ranging from 55 feet to 150 feet in thickness. 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. The base of the aquifer corresponds to the top of the underlying dense clay of the Hawthorn Group. The Hawthorn Group was not encountered during drilling at this site but is believed to be located at 40 feet to 50 feet BGS; thus, the effective aquifer thickness would be approximately 35 feet to 45 feet. Soil surveys for Liberty and Long counties describe the occurrence of a perched water table within the Stilson loamy sands present within Fort Stewart (Looper 1980).

The confining layer for the Principal Artesian aquifer is the phosphatic clay of the Hawthorn Group and ranges in thickness from 15 feet to 90 feet. The vertical hydraulic conductivity of this confining unit is on the order of 10^{-8} cm/sec. There are minor occurrences of aquifer material within the Hawthorn Group; however, they have limited utilization (Miller 1990). The Hawthorn Group has been divided into three formations: Coosawhatchie Formation, Markshead Formation, and Parachula Formation, which are listed from youngest to oldest.

The Coosawhatchie Formation is composed predominantly of clay but also has sandy clay, argillaceous sand, and phosphorite units. The formation is approximately 170 feet thick in the Savannah, Georgia, area. This unit disconformably overlies the Markshead Formation and is distinguished from the underlying unit by dark phosphatic clays or phosphorite in the lower part and fine-grained sand in the upper part.

The Markshead Formation is approximately 70 feet thick in the Savannah, Georgia, area and consists of light-colored phosphatic, slightly dolomitic, argillaceous sand to fine-grained sandy clay with scattered beds of dolostone and limestone.

The Parachula Formation consists of sand, clay, limestone, and dolomite and is approximately 10 feet thick in the Savannah, Georgia, area. The Parachula Formation generally overlies the Suwannee Limestone in Georgia.

Groundwater encountered at all the underground storage tank investigation sites is part of the surficial aquifer system. Based on the facts 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 underground storage tank sites and identified water supply withdrawal points at Fort Stewart.

3.0 REFERENCES

Arora, Ram, 1984. *Hydrologic Evaluation for Underground Injection Control in the Coastal Plain of Georgia,* Department of Natural Resources, Environmental Protection Division, Georgia Geological Survey.

Herrick, S.M., and R.C. Vochis 1963. *Subsurface Geology of the Georgia Coastal Plain*, Georgia Geologic Survey Information Circular 25.

Looper, Edward E., 1980. *Soil Survey of Liberty and Long Counties, Georgia*, U.S. Department of Agriculture, Soil Conservation Service.

Miller, James A., 1990. *Groundwater Atlas of the United States*, U.S. Department of the Interior, U.S. Geological Survey, Hydrologic Inventory Atlas 730G.

APPENDIX VII

UNDERGROUND INJECTION CONTROL PERMIT

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Georgia Department of Natural Resources
205 Butler Street, S.E., East Floyd Tower, Atlanta, Georgia 30334
Lonice C. Barrett, Commissioner
Harold F. Reheis, Director
Environmental Protection Division
(404) 656-4713

January 13, 2001

Mr. Jeffery J. Longaker
Science Applications International Corporation
800 Oak Ridge Turnpike
P.O. Box 2502
Oak Ridge, TN 37831

RE: Revised Underground Injection Control Permit #104, injection of oxygen and air, former Building Site 728, Hunter Army Airfield, Savannah (EPD ID # 9025035 & 9025049).

Dear Mr. Longaker:

Enclosed is the revised Underground Injection Control (UIC) Permit #104 for the Former Building Site 728 site located at Hunter Army Airfield, Savannah, Chatham Co., Georgia. This UIC permit allows Science Applications International Corporation (SAIC) to utilize injection of oxygen and air through twenty-seven (27) wells to assist with the remediation of soil and ground-water contaminated with petroleum hydrocarbons at this site for up to five (5) years. The UIC permit states two (2) standard conditions and seven (7) additional conditions in the attachment.

If you or your staff have any questions about the permit please contact Bruce O'Connor, UIC Coordinator, at (404) 656-3214.

Sincerely,

Harold F. Reheis
Director

Enclosure

cc: UIC Permit #104 File
Wm.E.Logan, EPD-USTMP
L. Rogers, EPD - Brunswick

STATE OF GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

INJECTION WELL OPERATING PERMIT

PERMIT NUMBER: #104 **DATE ISSUED: January 13, 2001**

FACILITY DATA: **INJECTION WELL TYPE: CLASS V (type 5X26)**

FACILITY: Former Building Site 728
Duncan St. & Douglas Ave.
Hunter Army Airfield
Savannah, GA 31409
Chatham County

OPERATOR: Science Applications International Corporation*
6310 Allentown Blvd.
Harrisburg, PA 17112

LOCATION: Lat: 31° 01' 50" N
Long: 81° 08' 04" W

EPD ID # 9025035 & 9025049

In accordance with the provisions of the Georgia Rules for Underground Injection Control, Chapter 391-3-6-.13, this permit is issued for the operation of the herein described injection system. Unless appealed, this permit is effective thirty (30) days after its issuance and is conditioned upon the following:

1) The Permittee's continued compliance with the Georgia Rules for Underground Injection Control, Chapter 391-3-6-.13, the Georgia Rules for Water Quality Control (Revised) and the Georgia Rules for Safe Drinking Water (Revised); and

2) The Permittee's continued compliance with the Permittee's approved injection operation plan which is part of the approved Corrective Action Plan for this site, along with provisions of officially approved plan amendments, if any.

Additional conditions 1 through 7 are attached hereto.

This permit is issued in accordance with the initial application received March 22, 2000, the initial injection operation plan approved on May 12, 2000 and the revised application received November 30, 2000. The permit is based on the statements and supporting data entered herein or attached thereto, all of which are filed with the Environmental Protection Division of the Georgia Department of Natural Resources and hereby made a part of this permit. .

This permit is subject to revocation for noncompliance with aforementioned conditions. This permit expires on **January 13, 2006,** unless previously terminated.

Harold F. Reheis, Director, Environmental Protection Division
Georgia Department of Natural Resources

* SAIC, as consultant to the owner, may be contacted regarding technical questions at (423) 482-3628 or 481-8784.

INJECTION WELL OPERATING PERMIT
ADDITIONAL CONDITIONS

1. Permit Conditions.

   a. This permit is not transferable until any new operator shall agree in writing to these additional permit conditions. Any new operator also shall provide the Environmental Protection Division (Division) with appropriate documentation that they have adequate financial assurances to plug all existing Class V wells.

   b. If Science Applications International Corporation (Operator) wishes to continue an activity regulated by this permit after the expiration of the permit, the Operator must apply for and obtain a new permit.

   c. The Operator shall report any instances of noncompliance with permit conditions to the Division in writing within five (5) working days of such noncompliance, and shall take all reasonable steps to minimize the impact on the environment resulting from noncompliance with this permit and the Georgia Rules for Underground Injection Control.

   d. The Operator shall notify the Division of any proposed changes to the performance of the oxygen and air injection system in writing at least thirty (30) days prior to the change.

   e. All reports submitted to the Division shall be signed and stamped by a Georgia Registered Professional Engineer or Professional Geologist.

2. System Parameters.

   a. This permit is issued to the Operator for the purpose of operating an oxygen and air injection system at the above referenced site to aid in remediation of soil and ground-water contaminated with petroleum hydrocarbons.

   b. Number of Class V injection wells: Twenty-seven (27).

   c. Injected fluid: Oxygen (98%) and air (2%).

   d. Maximum injection rate per well: 0.08 cubic feet of air/min. (cfm)/well.
   Maximum total system injection rate: 2.25 cfm.

   e. Maximum injection volume per well: 120 cubic feet of air/day/well.
   Maximum total system injection volume: 3,240 cf/day.

   f. Maximum daily average injection pressure (at well head): 25 psig.

3. Monitoring and Reporting Requirements.

a. The Operator shall report to the Underground Injection Control Program of the Division the number and exact location of all Class V injection wells it installs or plugs on a quarterly basis. The reports are to be submitted to the UIC Program in accordance with the reporting schedule stipulated by the Underground Storage Tank Management Program.

b. The Operator shall submit to the Division for its approval, a detailed schematic diagram and location map on any Class V injection well that is different in construction from the specifications contained in the UIC permit application, no later than 45 days prior to installation of the injection well. The Operator cannot install such a well until it receives approval from the Division.

c. The Operator shall submit to the UIC Program one (1) copy of any report regarding this site which the Operator is required to submit to the Underground Storage Tank Management Program, or any other program within the Division.

d. The Operator shall submit to the UIC Program an annual report which will contain the following information.

1. Status of the injection system operation;

2. Results of any ground-water sampling and analyses;

3. Results of any soil sampling and analyses;

4. An evaluation of the plume movement through the ground-water, if any;

5. Comparisons of analyses to determine any changes in pollutant concentrations.

The annual reports will be provided to the UIC Program in accordance with the schedule stipulated by the Underground Storage Tank Management Program.

4. Emergency Situations.

a. The Operator is to immediately notify the Division of any emergency situation that affects the injection system and describe the remedial activity that the Operator is utilizing to correct the situation.

b. The Operator is to immediately notify the Division when the emergency situation ceases to exist.

5. The Operator shall grant the Division permission to enter the facility property to conduct inspections of the injection system.

6. The Operator shall maintain a copy of this permit at the facility site.

7. The Operator shall, upon termination of the injection of oxygen and air through a Class V injection well at this site, properly plug and abandon all Class V wells constructed on this site and notify the division within thirty (30) days of such termination and abandonment.