FINAL

IMA

SECOND ANNUAL MONITORING ONLY REPORT

3d Inf Div (Mech)

Underground Storage Tanks 15 & 16
Facility ID #9-089012
Building 1721
Fort Stewart, Georgia

Prepared for

U.S. ARMY CORPS OF ENGINEERS
SAVANNAH DISTRICT

Contract No. DACA21-02-D-0004
Delivery Order 0021

November 2003

SAIC®

FINAL

SECOND ANNUAL MONITORING ONLY REPORT
FOR
UNDERGROUND STORAGE TANKS 15 & 16
FACILITY ID #9-089012
BUILDING 1721
FORT STEWART, GEORGIA

Prepared for

U.S. Army Corps of Engineers, Savannah District
and
Fort Stewart Directorate of Public Works
Under Contract Number DACA21-02-D-0004
Delivery Order 0021

Prepared by

Science Applications International Corporation
151 Lafayette Drive
Oak Ridge, TN 37831

November 2003

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List of Abbreviations and Acronyms

ACL	alternate concentration limit
BTEX	benzene, toluene, ethylbenzene, and xylenes
CAP	Corrective Action Plan
EPA	U.S. Environmental Protection Agency
GA EPD	Georgia Environmental Protection Division
IWQS	In-Stream Water Quality Standard
MCL	maximum contaminant level
NFAR	no further action required
SAIC	Science Applications International Corporation
UST	underground storage tank
USTMP	Underground Storage Tank Management Program

MONITORING ONLY REPORT

Submittal Date: November 2003 Monitoring Report Number: 2nd Annual

For Period Covering: November 2001 to June 2003

Facility Name: USTs 15 & 16, Building 1721 Street Address: West 12th Street west of McFarland Avenue

Facility ID: 9-089012 City: Fort Stewart County: Liberty Zip Code: 31314

Latitude: 31° 52′ 17″ Longitude: 81° 37′ 38″

Submitted by UST Owner/Operator:		Prepared by Consultant/Contractor:	
Name:	Thomas C. Fry/Environmental Branch	Name:	Patricia A. Stoll
Company:	U.S. Army/HQ 3d, Inf. Div. (Mech)	Company:	SAIC
Address:	Directorate of Public Works, Bldg. 1137	Address:	P.O. Box 2501
	1550 Frank Cochran Drive		
City:	Fort Stewart State: GA	City:	Oak Ridge State: TN
Zip Code:	31314-4927	Zip Code:	37830
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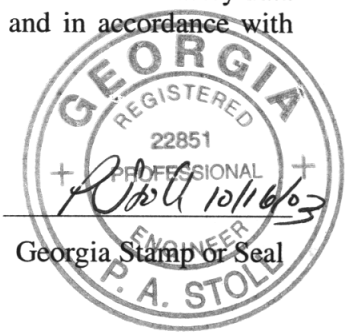
I. REGISTERED PROFESSIONAL ENGINEER OR PROFESSIONAL GEOLOGIST CERTIFICATION

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: 10/16/03



Georgia Stamp or Seal

II. PROJECT SUMMARY

(Appendix I, Figure 1: Site Location Map)

Provide a brief description or explanation of the site and a brief chronology of environmental events leading up to this report.

Underground Storage Tanks (USTs) 15 & 16, Facility ID #9-089012 were located near Building 1721 at Fort Stewart, Georgia. UST 15 had a capacity of 6,000 gal and was used for storing diesel fuel, while UST 16 had a capacity of 6,000 gal and was used for storing gasoline. The tanks and ancillary piping were excavated and removed on May 18, 1995. Science Applications International Corporation (SAIC) performed a Corrective Action Plan (CAP)–Part A investigation in 1996 and 1997. Results of these investigations were documented in the *Corrective Action Plan–Part A Report, Underground Storage Tanks 15 & 16, Facility ID #9-089012, Building 1721, Fort Stewart, Georgia*, which was submitted to the Georgia Environmental Protection Division (GA EPD) in March 1997 (SAIC 1997).

The GA EPD Underground Storage Tank Management Program (USTMP) conducted a technical review of the CAP–Part A Report and provided comments in correspondence dated July 23, 1997 (White 1997). GA EPD requested that soil and groundwater contamination downgradient of the former USTs 15 & 16 tank pit be delineated and that fate and transport modeling be conducted to identify the risk of exposure. Additional soil and groundwater samples were collected in November 1997, and the results were summarized in the *Corrective Action Plan–Part A Addendum Report, Underground Storage Tanks 15 & 16, Facility ID #9-089012, Building 1721, Fort Stewart, Georgia,* which was submitted to GA EPD in July 1998 (SAIC 1998). GA EPD conducted a technical review of the CAP–Part A Addendum Report and provided comments in correspondence dated November 16, 1998 (Logan 1998). The comments indicated that the target risk factor used in developing the benzene alternate concentration limit (ACL) was not sufficiently conservative and that three monitoring wells should be installed at the site at which to perform semiannual monitoring.

On January 27, 1999, representatives from GA EPD USTMP, the Fort Stewart Directorate of Public Works, the U.S. Army Corps of Engineers, and SAIC met to further discuss the actions required at 15 former UST sites at Fort Stewart. The USTs 15 & 16 site was one of the sites discussed. As a result of the meeting, GA EPD stated that USTs 15 & 16 would require additional site investigation. Fort Stewart agreed to revise the conclusions of the CAP–Part A Report, which were submitted to GA EPD in correspondence dated June 17, 1999, and recommended that a CAP–Part B Report be prepared for USTs 15 & 16.

The CAP–Part B investigation was performed in 2000, and the results were documented in the *Corrective Action Plan–Part B Report, Underground Storage Tanks 15 & 16, Facility ID #9-089012, Building 1721, Fort Stewart, Georgia*, which was submitted to GA EPD in August 2000 (SAIC 2000). The CAP–Part B Report recommended semiannual sampling of wells 06-06, 06-07, 06-08, and 06-09 for benzene, toluene, ethylbenzene, and xylenes (BTEX) until the benzene concentrations were below the ACL of 713 µg/L. The CAP–Part B Report was approved by GA EPD in correspondence dated February 9, 2001 (Logan 2001).

The fate and transport modeling performed as part of the CAP–Part A Addendum Report (SAIC 1998) reflected a continuous source of contamination. As part of the First Annual Monitoring Only Report (SAIC 2001), the fate and transport modeling was revised based on the results of the semiannual monitoring events, and the results are summarized in Attachment A of this report. The fate and transport modeling was not revised as part of this document because of the continued decrease in concentrations to below the In-Stream Water Quality Standard (IWQS).

In the First Annual Monitoring Only Report (SAIC 2001), a no-further-action-required (NFAR) status was requested for the site, and the monitoring program was discontinued after the June 2001 sampling event. During a teleconference on February 5, 2002, GA EPD requested that the monitoring be continued at the site. As a result, funding for the site was programmed, and the third and fourth sampling events were conducted in January and June 2003.

The purpose of the annual monitoring summarized in this report was to confirm the results of the fate and transport modeling and that natural attenuation is taking place at the site. The benzene concentrations during the sampling events conducted between January 2001 and June 2003 have remained below the ACL, and the latest site ranking score is 35. Thus, an NFAR status is being recommended for the site.

III. ACTIVITIES AND ASSESSMENT OF EXISTING CONDITIONS

A. Potentiometric Data:

(Appendix I, Figure 2: Potentiometric Surface Map)
(Appendix II, Table 1: Groundwater Elevations)

Discuss groundwater flow at this site and implications for this project.

During the third semiannual sampling event in January 2003, groundwater elevations were measured in all of the monitoring wells to determine the groundwater flow direction. In January 2003, the direction was toward the north and northeast, and the average groundwater gradient was approximately 0.039 ft/ft.

During the fourth semiannual sampling event in June 2003, groundwater elevations were measured in all of the monitoring wells to determine the groundwater flow direction. In June 2003, the direction was toward the east, and the average groundwater gradient was approximately 0.028 ft/ft.

The groundwater flow was to the southwest during the CAP–Part A investigation, to the west during the CAP–Part B investigation, to the east during the first semiannual sampling event, and to the northwest during the second semiannual sampling event. During the numerous investigations at UST sites at Fort Stewart, the groundwater flow direction has often changed 90 to 180° depending on the time of year, the amount of rainfall, and any hydrologic features that might impact the site-specific potentiometric surface; therefore, the phenomenon at USTs 15 & 16 is not uncommon.

B. Analytical Data:

(Appendix I, Figure 3: Groundwater Quality Map)
(Appendix II, Table 2: Groundwater Analytical Results)
(Appendix III: Validated Laboratory Analytical Results)
(Attachment C: Certificates of Analysis)

Discuss groundwater analysis results, trend of contaminant concentrations, and implications for this project.

During the third sampling event in January 2003, monitoring wells 06-06, 06-07, 06-08, and 06-09 were sampled for BTEX using U.S. Environmental Protection Agency (EPA) Method 8021B/8260B. Analytical results from the sampling event are summarized below.

- Benzene was detected in well 06-06 at a concentration of 418 µg/L. The concentration exceeded the IWQS of 71.28 µg/L; however, the concentration did not exceed the ACL of 713 µg/L.

- Toluene was detected in well 06-06 at a concentration of 292 µg/L. The concentration did not exceed the IWQS of 200,000 µg/L.

- Ethylbenzene was detected in well 06-06 at a concentration of 200 µg/L. The concentration did not exceed the IWQS of 28,719 µg/L.

- Total xylenes were detected in well 06-06 at a concentration of 450 µg/L. There is no ACL or IWQS for total xylenes; however, the concentration did not exceed the maximum contaminant level (MCL) of 10,000 µg/L.

BTEX compounds were not detected in wells 06-07, 06-08, and 06-09. The benzene concentration in well 06-06 exceeded the IWQS of 71.28 µg/L, but was below the GA EPD–approved ACL of 713 µg/L. Figure 4 shows the variations in benzene concentrations in groundwater for all the wells.

During the fourth sampling event in June 2003, monitoring wells 06-06, 06-07, 06-08, and 06-09 were sampled for BTEX using EPA Method 8021B/8260B. Analytical results from the sampling event are summarized below.

- Benzene was detected in wells 06-06 and 06-09 at concentrations of 57.9 and 1 µg/L, respectively. The concentrations did not exceeded the IWQS of 71.28 µg/L or the ACL of 713 µg/L.

- Toluene was detected in wells 06-06 and 06-09 at concentrations of 41.4 and 1.2 µg/L. The concentrations did not exceed the IWQS of 200,000 µg/L.

- Ethylbenzene was detected in wells 06-06, 06-07, and 06-09 at concentrations ranging from 0.64J to 166 µg/L. The concentrations did not exceed the IWQS of 28,719 µg/L.

- Total xylenes were detected in wells 06-06, 06-07, and 06-09 at concentrations ranging from 0.88J µg/L to 336 µg/L. There is no ACL or IWQS for total xylenes; however, the concentrations did not exceed the MCL of 10,000 µg/L.

BTEX compounds were not detected in well 06-08. The benzene concentrations in well 06-06 and 06-09 were below the IWQS of 71.28 µg/L and the GA EPD–approved ACL of 713 µg/L. Figure 4 shows the variations in benzene concentrations in groundwater for all the wells.

As recommended in the CAP–Part B Report (SAIC 2000) and approved by GA EPD, polynuclear aromatic hydrocarbon analysis was not performed as part of the Monitoring Only Plan for the site.

IV. SITE RANKING (NOTE: RE-RANK SITE AFTER EACH MONITORING EVENT.)

(Appendix IV: Site Ranking Form)

Environmental Site Sensitivity Score: *(April 1999 version of the Site Ranking Form was used.)*	2,510 (CAP–Part B Report) 260 (Jan. 2001 – First Semiannual Monitoring Event) 260 (June 2001 – Second Semiannual Monitoring Event) 260 (Jan. 2003 – Third Semiannual Monitoring Event) 35 (June 2003 – Fourth Semiannual Monitoring Event)

V. CONCLUSIONS/RECOMMENDATIONS

Provide justification of no-further-action-required recommendation or briefly discuss future monitoring plans for this site.

The Monitoring Only Plan is being conducted in accordance with Section III of the CAP–Part B Report (SAIC 2000) and as approved by the GA EPD USTMP in correspondence dated February 9, 2001 (Logan 2001). Termination conditions approved in the CAP-Part B Report indicated that termination would be recommended once the measured benzene concentrations were less than the ACL of 713 µg/L.

In the First Annual Monitoring Only Report, NFAR status was recommended for the site because the benzene concentrations during the first year of monitoring were less than the ACL. During a teleconference on February 5, 2002, GA EPD denied the request for NFAR and indicated that monitoring should be continued because the benzene concentrations increased between January and June 2001. As a result, semiannual sampling events were conducted in January and June 2003

Fort Stewart respectfully requests that GA EPD USTMP assign Facility ID #9-089012 an NFAR status for the following reasons:

The Monitoring Only Plan is being conducted in accordance with Section III of the CAP–Part B Report (SAIC 2000) and as approved by GA EPD USTMP in correspondence dated February 9, 2001 (Logan 2001) and conditions agreed to in a teleconference on February 5, 2002.

- The site scores for the last two rounds of semiannual groundwater sampling were 260 and 35, which GA EPD USTMP representatives have indicated is an acceptable score for requesting an NFAR status (i.e., January 27, 1999, meeting between GA EPD, Fort Stewart, U.S. Army Corps of Engineers, and SAIC representatives).

- The revised fate and transport model summarized in Attachment A indicates that benzene will never reach the nearest potential preferential pathway (i.e., a drainage ditch) at a concentration above the IWQS of 71.28 μg/L.

- The benzene concentrations in all wells were below the ACL of 713 μg/L during the four semiannual monitoring events from January 2001 to June 2003.

- The closest surface water bodies are a drainage ditch located 750 ft southeast of the site and Mill Creek located 2,500 ft southeast of the site.

- *Natural attenuation will continue to take place at the site, and the benzene concentrations at the site are below the IWQS.*

The monitoring only program at this site will be discontinued.

VI. REIMBURSEMENT

Attached _____ *N/A* *X*

(Appendix V: Reimbursement Application)

Fort Stewart is a federally owned facility and has funded the investigation for the former USTs 15 & 16 site, Building 1721, Facility ID #9-089012 using U.S. Department of Defense Environmental Restoration Account Funds. Application for Georgia Underground Storage Tank Trust Fund reimbursement is not being pursued at this time.

APPENDIX I

REPORT FIGURES

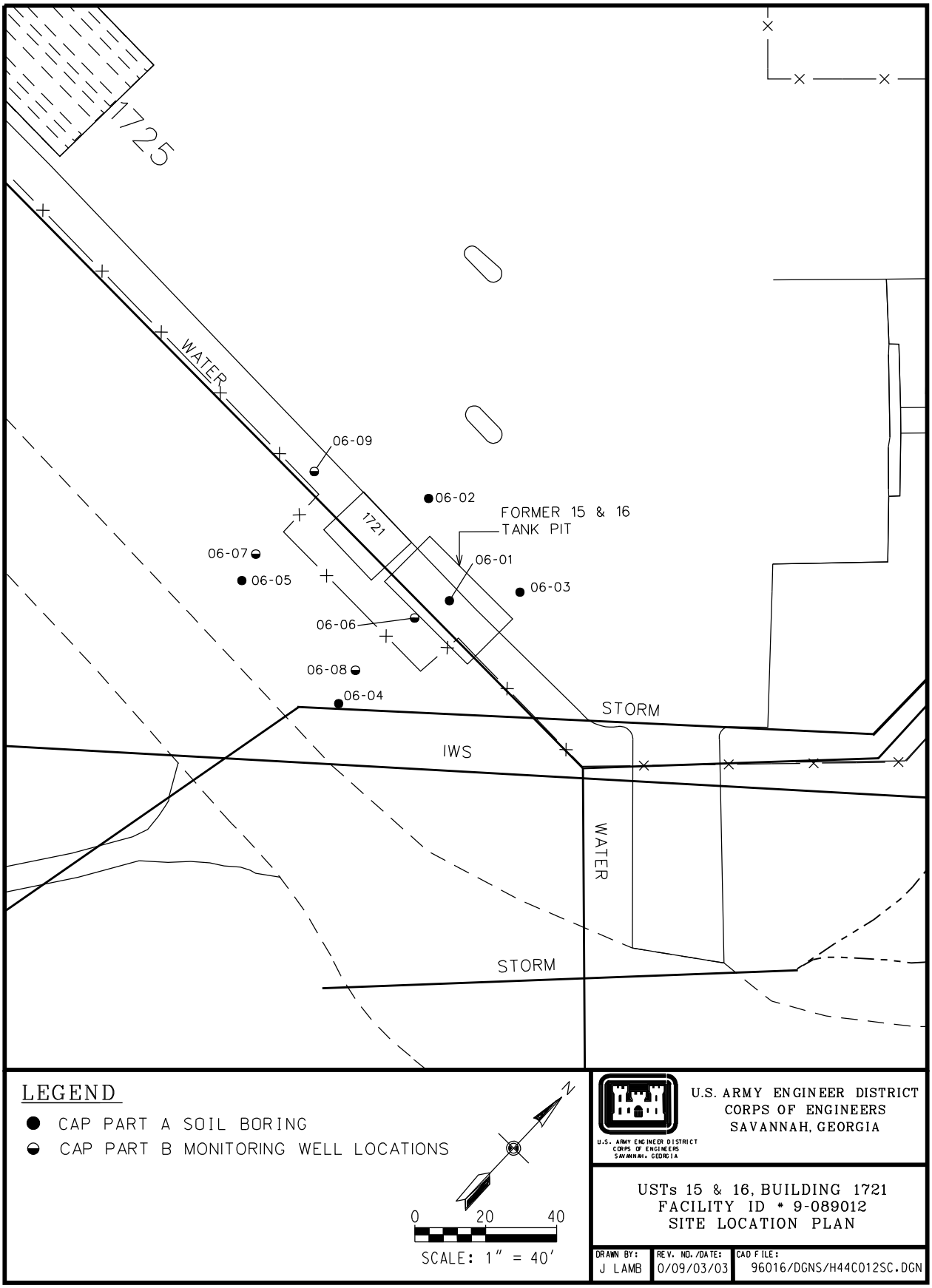


Figure 1. Location Map of USTs 15 & 16 Site at Fort Stewart, Liberty County, Georgia

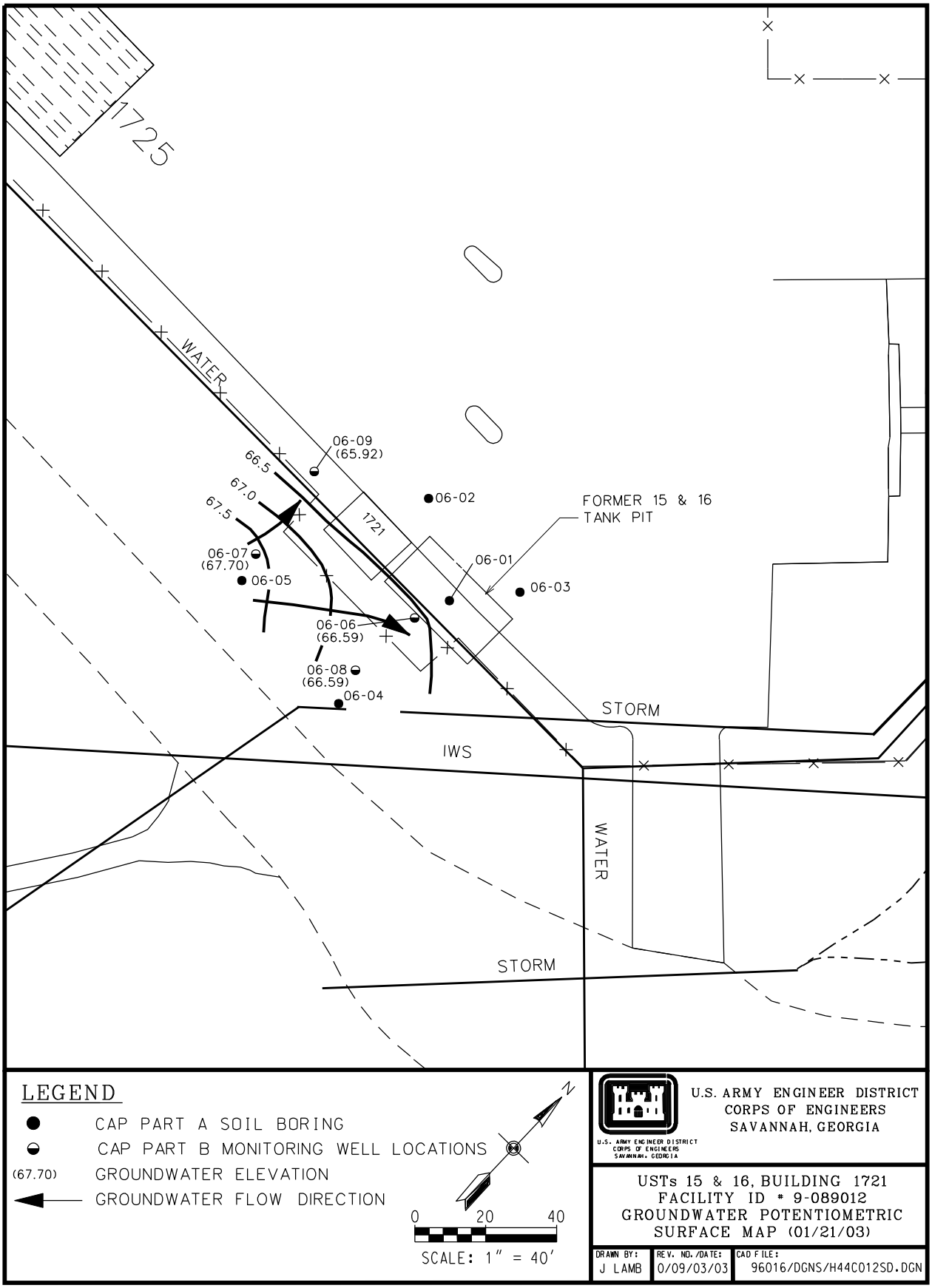


Figure 2a. Potentiometric Surface Map of the USTs 15 & 16 Site (January 2003)

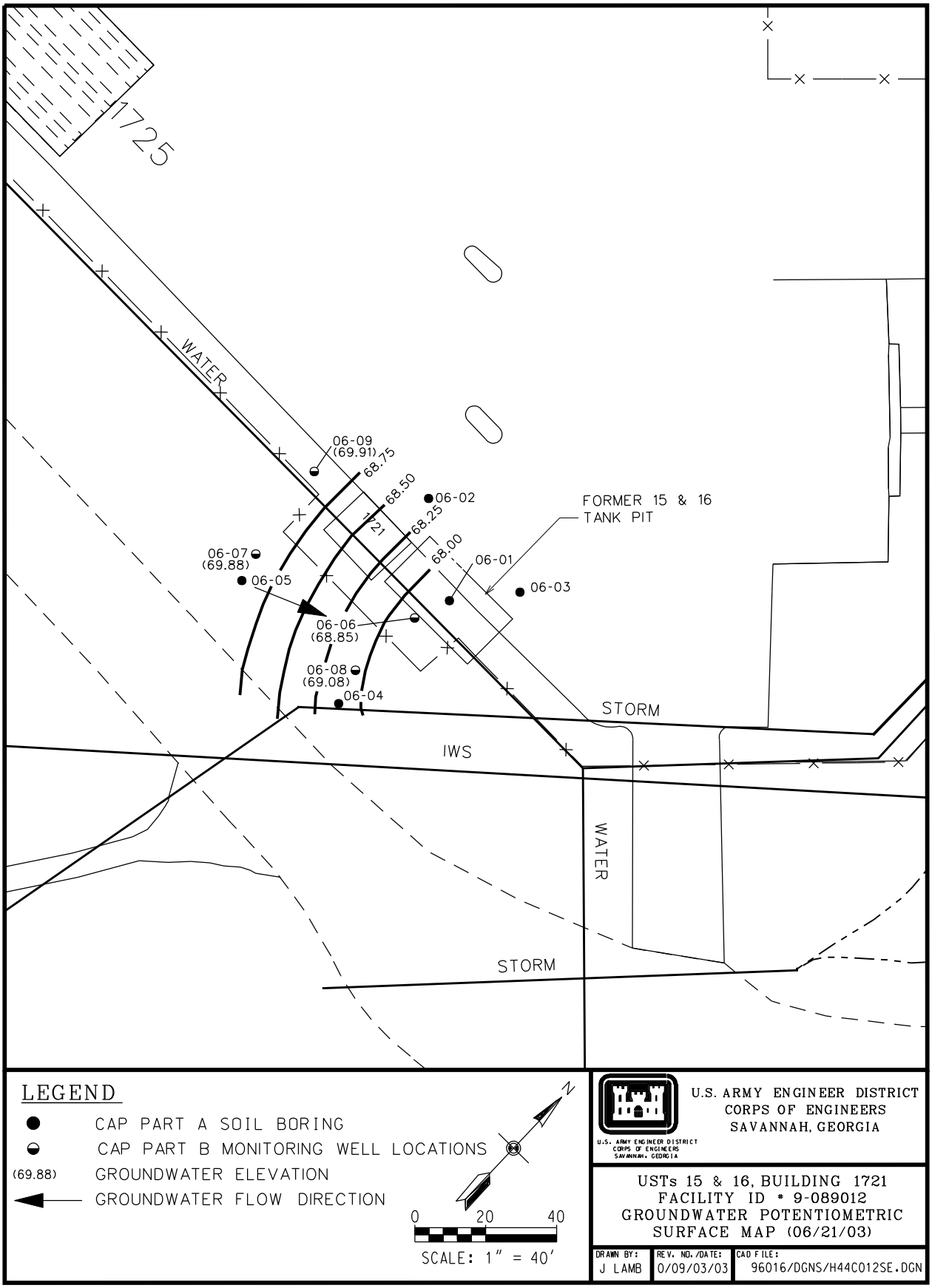


Figure 2b. Potentiometric Surface Map of the USTs 15 & 16 Site (June 2003)

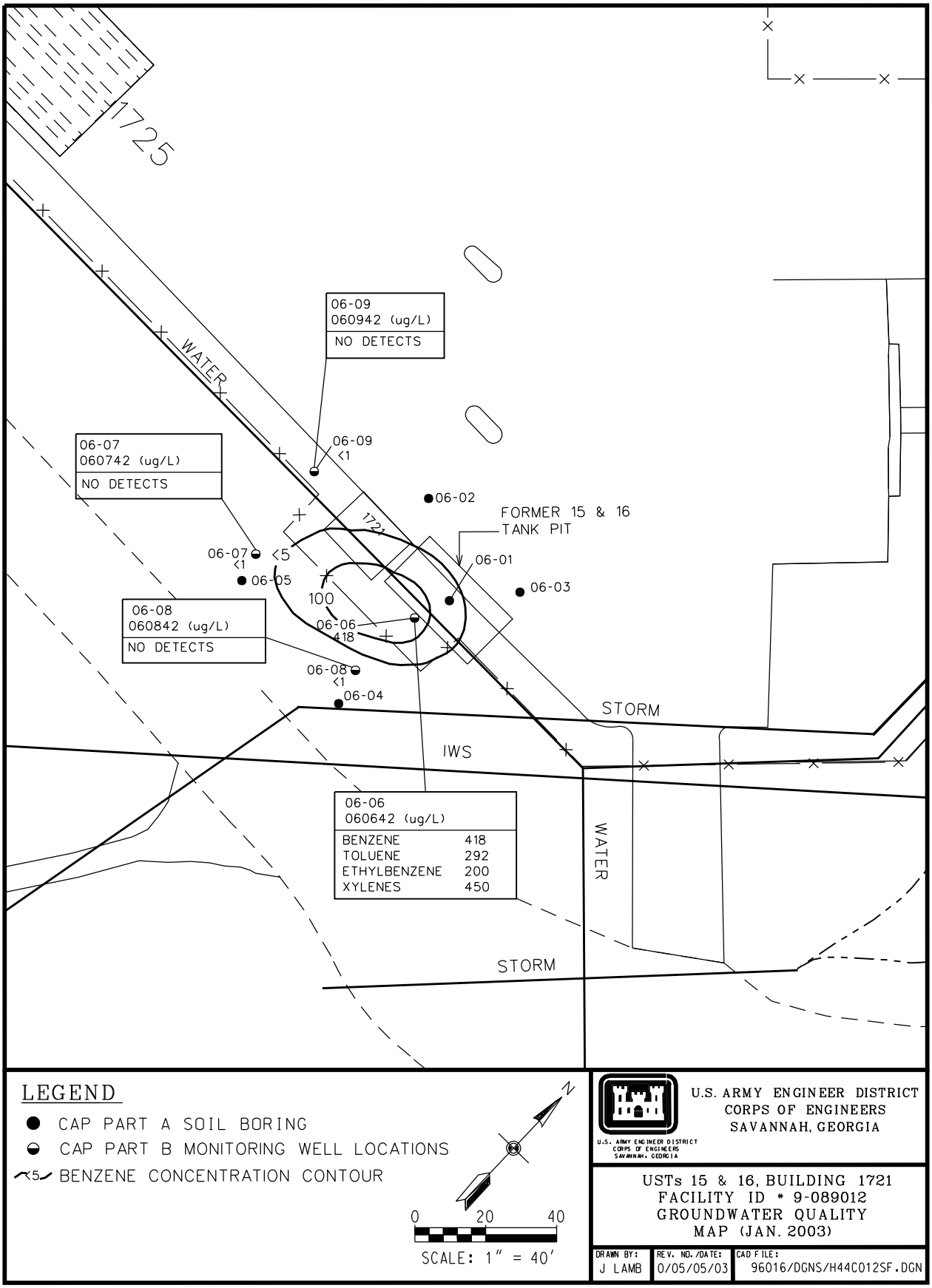


Figure 3a. Groundwater Quality Map for the USTs 15 & 16 Site (January 2003)

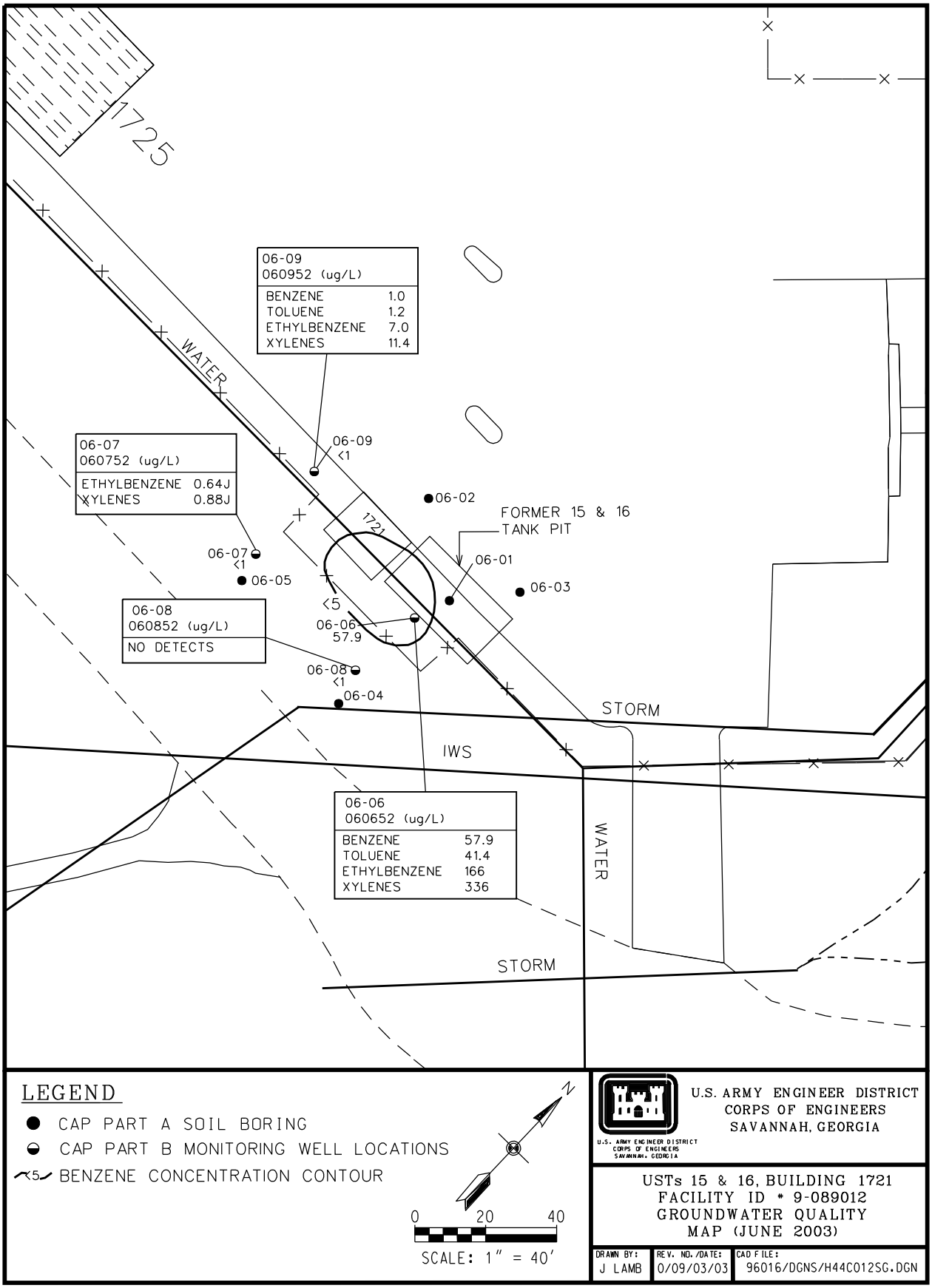


Figure 3b. Groundwater Quality Map for the USTs 15 & 16 Site (June 2003)

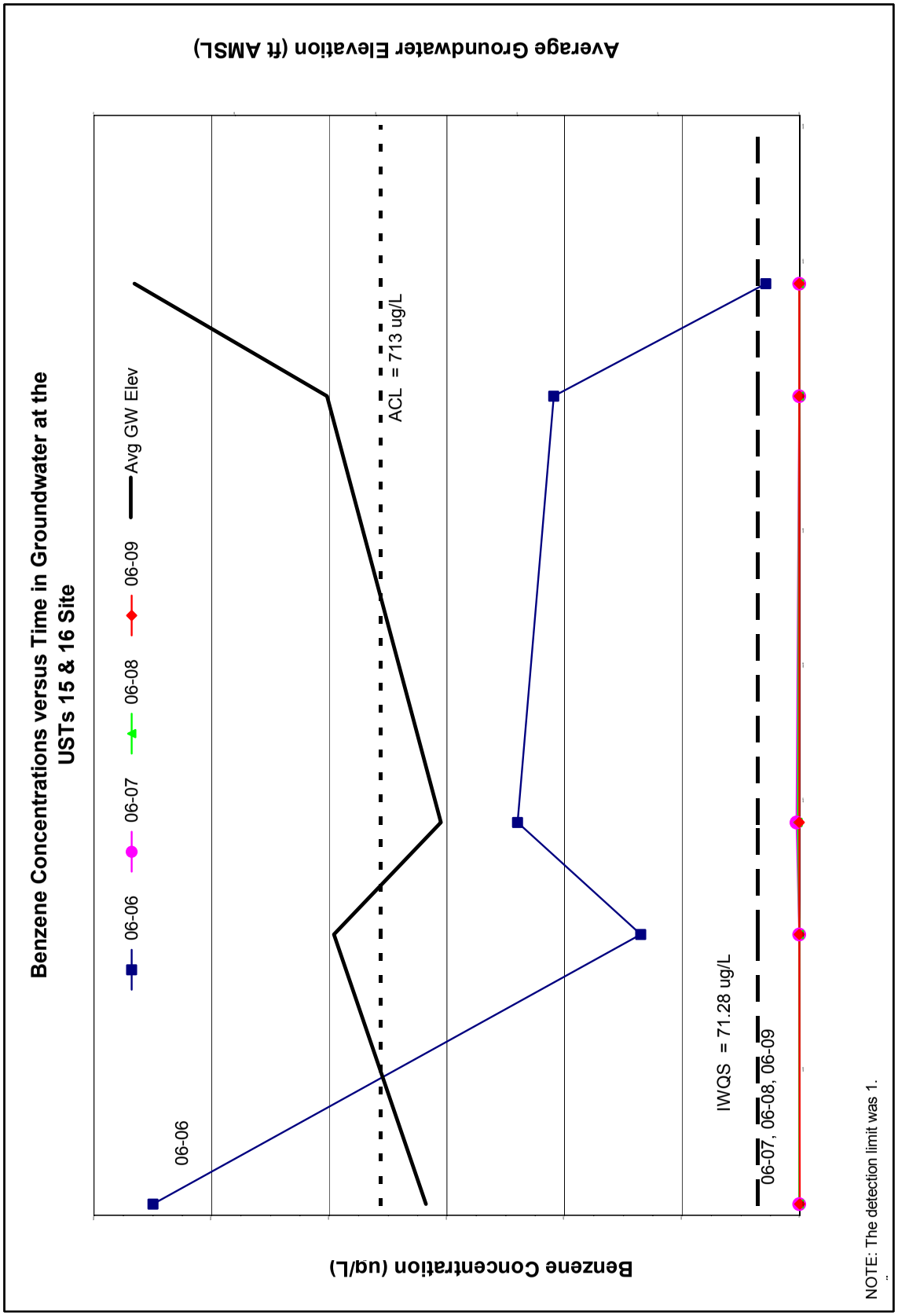


Figure 4. Trend of Benzene Concentrations at the USTs 15 & 16 Site

APPENDIX II

REPORT TABLES

Table 1. Groundwater Elevations

Well Number	Date Measured	Ground Surface Elevation (ft AMSL)	Top of Casing Elevation (ft AMSL)	Depth of Screened Interval (ft BGS)	Depth of Free Product (ft BTOC)	Water Depth (ft BTOC)	Product Thickness (ft)	Groundwater Elevation (ft AMSL)
Corrective Action Plan–Part A Investigation – 1996								
06-01	09/10/96	71.34	—	8.0 – 13.0	—	5.88	0	65.46
06-02	09/10/96	71.34	—	14.0 – 19.0	—	6.51	0	64.83
06-03	09/10/96	71.72	—	9.0 – 14.0	—	6.68	0	65.04
06-04	09/10/96	69.98	—	8.5 – 13.5	—	5.36	0	64.62
Corrective Action Plan–Part B Investigation – 2000								
06-06	02/22/00	71.2	70.87	2.1 – 12.1	—	5.46	0	65.41
06-07	02/22/00	70.7	70.45	2.9 – 12.9	—	5.36	0	65.09
06-08	02/22/00	70.9	70.78	2.8 – 12.8	—	5.39	0	65.39
06-06	06/29/00	71.2	70.87	2.1 – 12.1	—	5.89	0	64.98
06-07	06/29/00	70.7	70.45	2.9 – 12.9	—	5.62	0	64.83
06-08	06/29/00	70.9	70.78	2.8 – 12.8	—	5.80	0	64.98
06-09	06/29/00	71.2	70.83	2.9 – 12.9	—	5.96	0	64.87
First Semiannual Monitoring Event – January 2001								
06-06	01/09/01	71.2	70.87	2.1 – 12.1	—	5.03	0	65.84
06-07	01/09/01	70.7	70.45	2.9 – 12.9	—	2.93	0	67.52
06-08	01/09/01	70.9	70.78	2.8 – 12.8	—	4.96	0	65.82
06-09	01/09/01	71.2	70.83	2.9 – 12.9	—	3.60	0	67.23
Second Semiannual Monitoring Event – June 2001								
06-06	06/08/01	71.2	70.87	2.1 – 12.1	—	5.70	0	65.17
06-07	06/08/01	70.7	70.45	2.9 – 12.9	—	5.39	0	65.06
06-08	06/08/01	70.9	70.78	2.8 – 12.8	—	5.58	0	65.20
06-09	06/08/01	71.2	70.83	2.9 – 12.9	—	5.92	0	64.91
Third Semiannual Monitoring Event – January 2003								
06-06	01/21/03	71.2	70.87	2.1 – 12.1	—	4.28	0	66.59
06-07	01/21/03	70.7	70.45	2.9 – 12.9	—	2.75	0	67.70
06-08	01/21/03	70.9	70.78	2.8 – 12.8	—	4.19	0	66.59
06-09	01/21/03	71.2	70.83	2.9 – 12.9	—	4.91	0	65.92
Fourth Semiannual Monitoring Event – June 2003								
06-06	06/21/03	71.2	70.87	2.1 – 12.1	—	2.02	0	68.85
06-07	06/21/03	70.7	70.45	2.9 – 12.9	—	0.57	0	69.88
06-08	06/21/03	70.9	70.78	2.8 – 12.8	—	1.70	0	69.08
06-09	06/21/03	71.2	70.83	2.9 – 12.9	—	0.92	0	69.91

NOTES:
AMSL Above mean sea level.
BGS Below ground surface.
BTOC Below top of casing.

Table 2. Groundwater Analytical Results

Sample Location	Sample ID	Screened Interval (ft BGS)	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Total BTEX (µg/L)
Corrective Action Plan–Part A Investigation – 1996/1997								
06-01	0601W2	8.0 – 13.0	09/09/96	***16,600*** =	25,600 =	2,960 =	15,400 =	60,560
06-02	0602W2	14.0 – 19.0	09/09/96	5 U	5 U	5 U	5 U	ND
06-03	0603W2	9.0 – 14.0	09/09/96	1.7 J	5 U	5 U	5 U	1.7
06-04	0604W2	8.5 – 13.5	09/08/96	0.23 J	5 U	0.51 J	5 U	0.74
06-05	0605W2	10.0 – 15.0	11/12/97	2 U	2 U	2 U	6.6 J	6.6
Corrective Action Plan–Part B Investigation – 2000								
06-06	060612	2.1 – 12.1	01/16/00	***1,100*** =	151 =	1,820 =	925 =	3,996
06-07	060712	2.9 – 12.9	01/16/00	1 U	1 U	0.078 J	3 U	0.078
06-08	060812	2.8 – 12.8	01/16/00	1 U	1 U	1 U	3 U	ND
06-09	060912	2.9 – 12.9	06/23/00	0.32 J	1 U	1 U	3 U	0.32
First Semiannual Monitoring Event – January 2001								
06-06	060622	2.1 – 12.1	01/10/01	**270** =	49.2 J	112 =	271 =	702.2
06-07	060722	2.9 – 12.9	01/09/01	1 U	1 U	1 U	3 U	ND
06-08	060822	2.8 – 12.8	01/10/01	1 U	1 U	1 U	0.41 J	0.41
06-09	060922	2.9 – 12.9	01/10/01	1 U	1 U	1 U	3 U	ND
Second Semiannual Monitoring Event – June 2001								
06-06	060632	2.1 – 12.1	06/08/01	**480** =	47 =	245 =	342 =	1,114
06-07	060732	2.9 – 12.9	06/08/01	5.5 =	1.7 U	9.6 =	12.8 =	27.9
06-08	060832	2.8 – 12.8	06/08/01	3.2 =	1.3 U	7 =	9.6 =	19.8
06-09	060932	2.9 – 12.9	06/08/01	1 U	1 U	1 U	3 U	ND
Third Semiannual Monitoring Event – January 2003								
06-06	60642	2.1 – 12.1	01/21/03	**418** =	292 =	200 =	450 =	1,360
06-07	60742	2.9 – 12.9	01/21/03	1 U	1 U	1 U	1 U	ND
06-08	60842	2.8 – 12.8	01/21/03	1 U	1 U	1 U	1 U	ND
06-09	60942	2.9 – 12.9	01/21/03	1 U	1 U	1 U	1 U	ND
Fourth Semiannual Monitoring Event – June 2003								
06-06	60652	2.1 – 12.1	06/21/03	57.9 =	41.4 =	166 =	336 =	601.3
06-07	60752	2.9 – 12.9	06/21/03	1 U	1 U	0.64 J	0.88 J	1.52
06-08	60852	2.8 – 12.8	06/21/03	1 U	1 U	1 U	1 U	ND
06-09	60952	2.9 – 12.9	06/21/03	1 =	1.2 =	7 =	11.4 =	20.6
In-Stream Water Quality Standards (Chapter 391-3-6)				71.28	200,000	28,718	NRC	NRC
Alternate Concentration Limits				713	—	—	—	—

NOTES:

Bold values exceed In-Stream Water Quality Standards.
Italic values exceed alternate concentration limits.
BGS Below ground surface.
BTEX Benzene, toluene, ethylbenzene, and xylenes.
ND Not detected.
NRC No regulatory criteria.

Laboratory Qualifiers

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

APPENDIX III

VALIDATED LABORATORY ANALYTICAL RESULTS

ANALYTICAL LABORATORY INFORMATION AND DATA VALIDATION CODES

ANALYTICAL LABORATORY INFORMATION

The analytical laboratory was General Engineering Laboratories, Inc. (GEL). The analytical data sheets provided in this appendix are copies of those provided by GEL with the Science Applications International Corporation validation codes. Representatives from the Georgia Environmental Protection Division Underground Storage Tank Management Program and Fort Stewart agreed upon the format of the analytical data sheets and the information they contain during a meeting held on January 27, 1999.

The "original" laboratory data sheets do not include validation qualifiers. The original certificates of analysis and chain-of-custody forms are provided as an attachment to this report. The analytical process is extended beyond providing the analytical data with laboratory qualifiers by including a formal laboratory independent data validation, and then goes another step by adding specific reason codes to further identify why data have been designated as estimated, "J," or nondetect, "U." As a result of this extended validation process, copies of the original data sheets are not provided in this report. A summary of the validation and reason codes is included in this section. Each data package generated for the underground storage tank project at Fort Stewart and Hunter Army Airfield contains a case narrative that is signed by the analytical laboratory project manager. Laboratory information and third-party certification are provided below.

STATE OF GEORGIA
ENVIRONMENTAL LABORATORY ACCREDITATION

	Name of Laboratory:	**General Engineering Laboratories, Inc.**
	Address:	P.O. Box 30712 2040 Savage Road Charleston, SC 29407
	Contact:	Wendy Dimmick
	Telephone Number:	(843) 556-8171
	Fax Number:	(843) 766-1178
#1	Accrediting Authority:	**State of South Carolina**
	Accreditation Number:	SC-10120001
	Effective Date:	1/27/03
	Expiration Date:	3/26/04
	Accreditation Scope:	SDWA, CWA, RCRA, CERCLA
#2	Accrediting Authority:	**State of Florida**
	Accreditation Number:	E-87156
	Effective Date:	July 1, 2001 (initial and reaccredited on July 1 each year there after)
	Expiration Date:	June 30, 2004
	Accreditation Scope:	SDWA, CWA, RCRA, CERCLA

DATA VALIDATION REASON CODES

Organic, Inorganic, and Radiological Analytical Data

Holding Times

A01 Extraction holding times were exceeded.
A02 Extraction holding times were grossly exceeded.
A03 Analysis holding times were exceeded.
A04 Analysis holding times were grossly exceeded.
A05 Samples were not preserved properly.
A06 Professional judgment was used to qualify the data.

GC/MS Tuning

B01 Mass calibration was in error, even after applying expanded criteria.
B02 Mass calibration was not performed every 12 hours.
B03 Mass calibration did not meet ion abundance criteria.
B04 Professional judgment was used to qualify the data.

Initial/Continuing Calibration – Organics

C01 Initial calibration RRF was <0.05.
C02 Initial calibration RDS was >30%.
C03 Initial calibration sequence was not followed as required.
C04 Continuing calibration RRF was <0.05.
C05 Continuing calibration %D was >25%.
C06 Continuing calibration was not performed at the required frequency.
C07 Resolution criteria were not met.
C08 RPD criteria were not met.
C09 RDS criteria were not met.
C10 Retention time of compounds was outside windows.
C11 Compounds were not adequately resolved.
C12 Breakdown of endrin or DDT was >30%.
C13 Combined breakdown of endrin/DDT was >30%.
C14 Professional judgment was used to qualify the data.

Initial/Continuing Calibration – Inorganics

D01 ICV or CCV was not performed for every analyte.
D02 ICV recovery was above the upper control limit.
D03 ICV recovery was below the lower control limit.
D04 CCV recovery was above the upper control limit.
D05 CCV recovery was below the lower control limit.
D06 Standard curve was not established with the minimum number of standards.
D07 Instrument was not calibrated daily or each time the instrument was set up.
D08 Correlation coefficient was <0.995.
D09 Mid-range cyanide standard was not distilled.
D10 Professional judgment was used to qualify the data.

ICP and Furnace Requirements

E01 Interference check sample recovery was outside the control limit.
E02 Duplicate injections were outside the control limit.
E03 Post-digestion spike recovery was outside the control limit.
E04 MSA was required but not performed.
E05 MSA correlation coefficient was <0.995.
E06 MSA spikes were not at the correct concentration.
E07 Serial dilution criteria were not met.
E08 Professional judgment was used to qualify the data.

Blanks

F01 Sample data were qualified as a result of the method blank.
F02 Sample data were qualified as a result of the field blank.
F03 Sample data were qualified as a result of the equipment rinsate.
F04 Sample data were qualified as a result of the trip blank.
F05 Gross contamination exists.
F06 Concentration of the contaminant was detected at a level below the CRQL.
F07 Concentration of the contaminant was detected at a level less than the action limit, but greater than the CRQL.
F08 Concentration of the contaminant was detected at a level that exceeds the action level.
F09 No laboratory blanks were analyzed.
F10 Blank had a negative value >2 times the IDL.
F11 Blanks were not analyzed at required frequency.
F12 Professional judgment was used to qualify the data.

Surrogate/Radiological Chemical Recovery

G01 Surrogate/radiological chemical recovery was above the upper control limit.
G02 Surrogate/radiological chemical recovery was below the lower control limit.
G03 Surrogate recovery was <10%.
G04 Surrogate recovery was zero.
G05 Surrogate/radiological chemical recovery data was not present.
G06 Professional judgment was used to qualify the data.
G07 Radiological chemical recovery was <20%.
G08 Radiological chemical recovery was >150%.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

H01 MS/MSD recovery was above the upper control limit.
H02 MS/MSD recovery was below the lower control limit.
H03 MD/MSD recovery was <10%.
H04 MS/MSD pairs exceeded the RPD limit.
H05 No action was taken on MS/MSD limit.
H06 Professional judgment was used to qualify the data.
H07 Radiological MS/MSD recovery was <20%.
H08 Radiological MS/MSD recovery was >160%.
H09 Radiological MS/MSD samples were not analyzed at the required frequency.

DATA VALIDATION REASON CODES (continued)

Organic, Inorganic, and Radiological Analytical Data

Matrix Spike I01 MS recovery was above the upper control limit. I02 MS recovery was below the lower control limit. I03 MS recovery was <30%. I04 No action was taken on MS data. I05 Professional judgment was used to qualify the data.	**Laboratory Duplicate** J01 Duplicate RPD/radiological duplicate error ratio (DER) was outside the control limit. J02 Duplicate sample results were >5 times the CRDL. J03 Duplicate sample results were <5 times the CRDL. J04 Professional judgment was used to qualify the data. J05 Duplicate was not analyzed at the required frequency.
Internal Area Summary K01 Area counts were outside the control limits. K02 Extremely low area counts or performance was exhibited by a major drop-off. K03 IS retention time varied by more than 30 sec. K04 Professional judgment was used to qualify the data.	**Pesticide Cleanup Checks** L01 10% recovery was obtained during either check. L02 Recoveries during either check were >120%. L03 GPC cleanup recoveries were outside the control limits. L04 Florisil cartridge cleanup recoveries were outside the control limits. L05 Professional judgment was used to qualify the data.
Target Compound Identification M01 Incorrect identifications were made. M02 Qualitative criteria were not met. M03 Cross contamination occurred. M04 Confirmatory analysis was not performed M05 No results were provided. M06 Analysis occurred outside 12-hour GC/MS window. M07 Professional judgment was used to qualify the data. M08 The %D between the two pesticide/PCB column checks was >25%.	**Compound Quantitation and Reported CRQLs** N01 Quantitation limits were affected by large off-scale peaks. N02 MDLs reported by the laboratory exceeded corresponding CRQLs. N03 Professional judgment used to qualify the data.
Tentatively Identified Compounds (TICs) O01 Compound was suspected laboratory contaminant and was not detected in the blank. O02 TIC result was not above 10 times the level found in the blank. O03 Professional judgment was used to qualify analytical data.	**Laboratory Control Samples (LCSs)** P01 LCS recovery was above upper control limit. P02 LCS recovery was below lower control limit. P03 LCS recovery was <50%. P04 No action was taken on the LCS data. P05 LCS was not analyzed at required frequency. P06 Radiological LCS recovery was <50% for aqueous samples, <40% for solid samples. P07 Radiological LCS recovery was >150% for aqueous samples, >160% for solid samples. P08 Professional judgment was used to qualify the data.
Field Duplicate Q01 Field duplicate RPDs were >30% for waters and/or >50% for soils. Q02 Radiological field duplicate error ratio (DER) was outside the control limit. Q03 Duplicate sample results were >5 times the CRDL. Q04 Duplicate sample results were <5 times the CRDL.	**Radiological Calibration** R01 Efficiency calibration criteria were not met. R02 Energy calibration criteria were not met. R03 Resolution calibration criteria were not met. R04 Background determination criteria were not met. R05 Quench curve criteria were not met. R06 Absorption curve criteria were not met. R07 Plateau curve criteria were not met. R08 Professional judgment was used to qualify the data.
Radiological Calibration Verification S01 Efficiency verification criteria were not met. S02 Energy verification criteria were not met. S03 Resolution verification criteria were not met. S04 Background verification criteria were not met. S05 Cross-talk verification criteria were not met. S06 Professional judgment was used to qualify the data.	

THIRD SEMIANNUAL MONITORING EVENT

JANUARY 2003

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

060642

Lab Name: GENERAL ENGINEERING LABS Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 73973

Matrix: (soil/water) WATER Lab Sample ID: 73973002

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5U429

Level: (low/med) LOW Date Received: 01/24/03

% Moisture: not dec. _____ Date Analyzed: 01/30/03

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	418	
108-88-3	Toluene	292	
100-41-4	Ethylbenzene	200	
1330-20-7	Xylenes (total)	450	

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DATA VALIDATION COPY

DUPLICATE

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

060644

Lab Name: GENERAL ENGINEERING LABS Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 73973

Matrix: (soil/water) WATER Lab Sample ID: 73973003

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5U430

Level: (low/med) LOW Date Received: 01/24/03

% Moisture: not dec. _____ Date Analyzed: 01/30/03

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	414	
108-88-3	Toluene	291	
100-41-4	Ethylbenzene	200	
1330-20-7	Xylenes (total)	439	

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DATA VALIDATION COPY

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
060742

Lab Name: GENERAL ENGINEERING LABS Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 73973

Matrix: (soil/water) WATER Lab Sample ID: 73973005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5U432

Level: (low/med) LOW Date Received: 01/24/03

% Moisture: not dec. _____ Date Analyzed: 01/30/03

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	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	1.0	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

060842

Lab Name: GENERAL ENGINEERING LABS Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 73973

Matrix: (soil/water) WATER Lab Sample ID: 73973004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5U431

Level: (low/med) LOW Date Received: 01/24/03

% Moisture: not dec. _____ Date Analyzed: 01/30/03

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	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	1.0	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

060942

Lab Name: GENERAL ENGINEERING LABS Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 73973

Matrix: (soil/water) WATER Lab Sample ID: 73973001

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 5U428

Level: (low/med) LOW Date Received: 01/24/03

% Moisture: not dec. _____ Date Analyzed: 01/30/03

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	1.0	U
100-41-4	Ethylbenzene	1.0	U
1330-20-7	Xylenes (total)	1.0	U

u

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.: GLTM32

PROJECT NAME: Ft. Stewart LTM-D.O. 21

PROJECT NUMBER: 01-1624-04-5213-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature): P Stoll (Printed Name): PATRICIA A. STOLL

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod, Charleston, SC 29417

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	REQUESTED PARAMETERS: BTEX	VOC	Oil & Grease	Total Phnols	pH	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
Φ6Φ942	1/21/03	1005	WATER	2					2		
Φ6Φ642	1/21/03	1030	WATER	2					2		
Φ6Φ644	1/21/03	1036	WATER	2					2		
Φ6Φ842	1/21/03	1025	WATER	2					2		
Φ6Φ742	1/21/03	1045	WATER	2					2		
751142	1/21/03	1500	WATER	2					2		
751242	1/21/03	1540	WATER	2					2		
751442	1/21/03	1620	WATER	2					2		
751542	1/21/03	1625	WATER	2					2		
751342	1/21/03	1710	WATER	2					2		
TBΦ31Φ	1/21/03	0745	WATER	2					2		

P Stoll 1/24/03

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 22	Cooler Temperature: 4°C
P Stoll	1/24/03 1200	Mike Sumler	1-24-03 1515	Cooler ID: #4	FEDEX NUMBER: N/A
COMPANY NAME: SAIC		COMPANY NAME: GEL			
RECEIVED BY:	Date/Time 1/24/03 1200	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			
RELINQUISHED BY:	Date/Time 1/24/03 1515	RECEIVED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			

FOURTH SEMIANNUAL MONITORING EVENT

JUNE 2003

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

060652

Lab Name: GEL, LLC. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: ~~82889~~ 82890

Matrix: (soil/water) WATER Lab Sample ID: 82889007

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7P436

Level: (low/med) LOW Date Received: 06/24/03

% Moisture: not dec. _____ Date Analyzed: 06/26/03

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	57.9	
108-88-3	Toluene	41.4	
100-41-4	Ethylbenzene	166 ~~177~~	~~E~~ D
1330-20-7	Xylenes (total)	336 ~~352~~	~~E~~ D

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

060654

Lab Name: GEL, LLC. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: ~~82889~~ 8289D

Matrix: (soil/water) WATER Lab Sample ID: 82889008

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7P438

Level: (low/med) LOW Date Received: 06/24/03

% Moisture: not dec. _____ Date Analyzed: 06/26/03

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		58.2	
108-88-3	Toluene		38.2	
100-41-4	Ethylbenzene	377	~~158~~	E D
1330-20-7	Xylenes (total)	751	~~321~~	E D

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

060752

Lab Name: GEL, LLC. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: ~~82890~~ 82890

Matrix: (soil/water) WATER Lab Sample ID: 82889006

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7P414

Level: (low/med) LOW Date Received: 06/24/03

% Moisture: not dec. _____ Date Analyzed: 06/26/03

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	1.0	U	U
100-41-4	Ethylbenzene	0.64	J	J
1330-20-7	Xylenes (total)	0.88	J	J

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

060852

Lab Name: GEL, LLC. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: ~~82889~~ 82890

Matrix: (soil/water) WATER Lab Sample ID: 82889005

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7P413

Level: (low/med) LOW Date Received: 06/24/03

% Moisture: not dec. _____ Date Analyzed: 06/26/03

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	1.0	U	
100-41-4	Ethylbenzene	1.0	U	
1330-20-7	Xylenes (total)	1.0	U	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

060952

Lab Name: GEL, LLC. Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: ~~82889~~ 82890

Matrix: (soil/water) WATER Lab Sample ID: 82889004

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7P435

Level: (low/med) LOW Date Received: 06/24/03

% Moisture: not dec. _____ Date Analyzed: 06/26/03

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	
108-88-3	Toluene	1.2	
100-41-4	Ethylbenzene	7.0	
1330-20-7	Xylenes (total)	11.4	

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Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.: GLTM35

PROJECT NAME: Ft. Stewart LTM-D.O. 21

PROJECT NUMBER: 01-1624-04-5213-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Patricia A Stoll **(Printed Name)** PATRICIA A. STOLL

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod, Charleston, SC 29417

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	VOC	Oil & Grease	Total Phnols	pH	MTBE	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
1A1226	6/20/03	1350	water	2					2	4		
1AØ626	6/21/03	1100	water	2					2	4		
1AØ622	6/21/03	1035	water	2					2	4		
1AØ522	6/21/03	0945	water	2					2	4		
1AØ822	6/21/03	0905	water	2					2	4		
751352	6/21/03	1714	water	2						2		
751252	6/21/03	1826	water	2						2		
751152	6/21/03	1836	water	2						2		
Ø6Ø952	6/21/03	1456	water	2						2		
Ø6Ø852	6/21/03	1541	water	2						2		
Ø6Ø752	6/21/03	1534	water	2						2		
Ø6Ø652	6/21/03	1450	water	2						2		
Ø6Ø654	6/21/03	1450	water	2						2		

RELINQUISHED BY: Patricia A Stoll	Date/Time 6/23/03 12/50	RECEIVED BY: TOM CARTER	Date/Time 6/24/03 1250	TOTAL NUMBER OF CONTAINERS: 96/02 15 6/24/03	Cooler Temperature: 4°C
COMPANY NAME: SAIC		COMPANY NAME: GEL		Cooler ID: #1	FEDEX NUMBER: N/A
RECEIVED BY:	Date/Time	RELINQUISHED BY: TOM CARTER	Date/Time 6/24/03 1530		
COMPANY NAME:		COMPANY NAME: GEL			
RELINQUISHED BY:	Date/Time	RECEIVED BY: Mike Sanders	Date/Time 6-24-03 1530		
COMPANY NAME:		COMPANY NAME: GEL			

APPENDIX IV

SITE RANKING FORM

THIRD SEMIANNUAL MONITORING EVENT

JANUARY 2003

SITE RANKING FORM

Facility Name: USTs 15 & 16, Building 1721 **Ranked by:** S. Stoller

County: Liberty **Facility ID #:** 9-089012 **Date Ranked:** 4/24/03

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

* *CAP-Part A samples (1996)*

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

* *CAP-Part A soil sample 0601D1 (1996)*

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. 0) + (B. 1) = (1) x (C. 10) = (D. 10)

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 +		

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

* *LTM sample 060642 (January 2003)*

Fill in the blanks: (E. 0) + (F. 50) = (G. 50)

Facility Name: USTs 15 & 16 Building 1721 **County:** Liberty **Facility ID #:** 9-089012

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 page X-5.

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'	= 1

* *Drainage ditch located 750 feet west of the site*

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. 5) + (K. 0) = L. 5

(G. 50) x (L. 5) = M. 250

(M. 250) + (D. 10) = N. 260

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. 260) x (P. 1) = (260) + (Q. 0)

= 260 (January 2003 - Third Semiannual Sampling Event)
ENVIRONMENTAL SENSITIVITY SCORE

FOURTH SEMIANNUAL MONITORING EVENT

JUNE 2003

SITE RANKING FORM

Facility Name: USTs 15 & 16, Building 1721 **Ranked by:** S. Stoller

County: Liberty **Facility ID #:** 9-089012 **Date Ranked:** 8/13/03

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

* *CAP-Part A samples (1996)*

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

* *CAP-Part A soil sample 0601D1 (1996)*

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. 0) + (B. 1) = (1) x (C. 10) = (D. 10)

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 +		

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

* *LTM sample 060652 (June 2003)*

Fill in the blanks: (E. 0) + (F. 5) = (G. 5)

Facility Name: USTs 15 & 16 Building 1721 **County:** Liberty **Facility ID #:** 9-089012

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 page X-5.

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'	= 1

* *Drainage ditch located 750 feet west of the site*

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. 5) + (K. 0) = L. 5

(G. 5) x (L. 5) = M. 25

(M. 25) + (D. 10) = N. 35

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. 35) x (P. 1) = (35) + (Q. 0)

= 35 (June 2003 - Fourth Semiannual Sampling Event)
ENVIRONMENTAL SENSITIVITY SCORE

ADDITIONAL GEOLOGIC AND HYDROGEOLOGIC DATA

The following is presented to provide supplemental information to Item H of the Site Ranking Form and details relating to the geologic and hydrogeologic conditions at Fort Stewart that support Fort Stewart's determination that the water withdrawal points 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 ft at the fall line, located approximately 150 miles inland from the Atlantic coast, to approximately 4,200 ft 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 ft 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 ft thick and dominated by clastics. The Tertiary section was found to be approximately 2,170 ft thick and dominated by limestone, with a 175-ft-thick cap of dark green phosphatic clay. This clay is regionally extensive and is known as the Hawthorn Group. The interval from approximately 110 ft 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 have been 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-ft section, the lowermost 110 ft of which consisted predominantly of limestone sediments, above which 245 ft 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 ft 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 in. in depth. The surface layer is underlain by material consisting of pale yellow loamy sand and extends to a depth of approximately 29 in. The subsoil is predominantly sandy clay loam and extends to a depth of 72 in. 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, Ocala Group, and Suwannee Limestone. These formations are approximately 800 ft 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 to 150 ft 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 ft BGS (Geraghty and Miller 1993). 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 to 50 ft BGS; thus, the effective aquifer thickness would be approximately 35 to 45 ft. 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 to 90 ft. 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, Markshead, and Parachula, 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 ft 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 ft 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 ft thick in the Savannah, Georgia, area. The Parachula Formation generally overlies the Suwannee Limestone in Georgia.

Groundwater encountered at all the underground storage tank (UST) investigation sites is part of the surficial aquifer system. Based on the facts that all public and nonpublic water supply wells draw water from the Principal Artesian (Floridan) Aquifer and that the Hawthorn confining unit separates the Principal Artesian Aquifer from the surficial aquifer, it is concluded that there is no hydraulic interconnection between the surficial aquifer (and associated groundwater plumes, if applicable) located beneath former UST sites and identified water supply withdrawal points at Fort Stewart.

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.

Geraghty and Miller 1993. *RCRA Facility Investigation Work Plan, Fort Stewart, Georgia*.

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.

ATTACHMENT A

REVISED FATE AND TRANSPORT MODELING RESULTS

A.1 FATE AND TRANSPORT MODELING

In summary, lateral migration of contaminants from the source to the receptor was modeled using the Analytical Transient 1-, 2-, 3-Dimensional Model. It was used to model contaminant migration to two potential downgradient receptors: a drainage ditch, located 750 ft southeast of the site, and Mill Creek, located approximately 2,500 ft southeast of the site. The steady-state model was calibrated using the maximum groundwater concentration (i.e., 16,600 µg/L in well 06-01 in September 1996) and concentrations recorded at the site in subsequent sampling events. The calibrated model also represented the conditions after the source removal (i.e., the source loading was discontinued after a steady-state condition was reached). Modeling of leaching to groundwater by percolating rainwater was not performed because there was no soil contamination above the water table.

A.1.1 Summary of CAP–Part A and –Part B Report Fate and Transport Modeling Results

The fate and transport modeling performed as part of the *Corrective Action Plan–Part A Addendum Report for USTs 15 & 16, Facility ID #9-089012, Building 1721, Fort Stewart, Georgia,* (SAIC 1998) was based on the assumption of a continuous source of contamination of infinite duration at the site given the maximum predicted benzene concentration in groundwater [i.e., 16,600 µg/L in well 06-01 during the Corrective Action Plan (CAP)–Part A in September 1996]. The modeling was performed to develop alternate concentration limits (ACLs) for the site. Benzene was the only constituent at the site that exceeded its In-Stream Water Quality Standard (IWQS); therefore, an ACL was developed for only benzene.

The dilution attenuation factor (DAF) was estimated to be infinity for the drainage ditch and Mill Creek. The infinite DAF indicates that the contamination will never reach these locations; therefore, no ACLs were developed for the tributary because the ACLs would be infinite for each constituent of potential concern. However, the site ranking score of 2,750 during the CAP–Part B investigation indicated that a corrective action for groundwater was warranted. The CAP–Part B Report (SAIC 2000) proposed that the ACL for benzene be 713 µg/L, which is an order of magnitude above the IWQS. The Georgia Environmental Protection Division (GA EPD) approved the CAP–Part B Report in correspondence dated February 9, 2001 (Logan 2001).

A.1.2 Summary of First Annual Monitoring Only Report Fate and Transport Modeling Results

The fate and transport modeling was revised as part of the First Annual Monitoring Only Report (SAIC 2001) to reflect more recent site conditions and the maximum observed benzene concentration in well 06-06 during the first year of monitoring. The model calibration was performed by matching the highest concentration observed in monitoring well 06-06 (i.e., 480 µg/L in June 2001) during the second sampling event. Based on the groundwater plume calibration, the source area was estimated to be approximately 50 by 150 ft in size, extending from well 06-06 toward the southwest. The estimated DAF for benzene at the drainage ditch and Mill Creek remained infinity. Because the DAF for the site remained the same, the ACL was not revised.

A.1.3 Conclusions Based on Fate and Transport Modeling

The conclusions below are based on fate and transport modeling that assumed a continuous source of contamination of infinite duration at the site, given the maximum observed benzene concentration in

groundwater (i.e., 16,600 μg/L) in September 1996 and the observed benzene concentrations in groundwater in wells 06-06 and 06-07 during sampling events conducted in 2001.

- The modeling of benzene estimated a DAF of infinity for the drainage ditch and Mill Creek, indicating that the contamination will never reach these locations; therefore, no ACLs were developed based on fate and transport modeling results.

- An ACL of 713 μg/L was proposed in the CAP–Part B Report and approved by GA EPD in correspondence dated February 9, 2001 (Logan 2001).

- Benzene concentrations in groundwater did not exceed the approved ACL of 713 μg/L in any of the wells during the January 2001, June 2001, January 2003, and June 2003 sampling events.

A.2 REFERENCES

Logan, William E. 2001. Letter to Colonel Gregory V. Stanley (Fort Stewart Directorate of Public Works, Environmental Branch), February 9.

SAIC (Science Applications International Corporation) 1998. *Corrective Action Plan–Part A Addendum Report, Underground Storage Tanks 15 & 16, Facility ID #9-089012, Building 1721, Fort Stewart, Georgia*, July.

SAIC 2000. *Corrective Action Plan–Part B Report, Underground Storage Tanks 15 & 16, Facility ID #9-089012, Building 1721, Fort Stewart, Georgia*, November.

SAIC 2001. *First Annual Monitoring Only Report, Underground Storage Tanks 15 & 16, Facility ID #9-089012, Building 1721, Fort Stewart, Georgia*, November.

ATTACHMENT B

REFERENCES

REFERENCES

Logan, William E. 1998. Letter to John Spears (Fort Stewart Directorate of Public Works, Environmental Branch), November 16.

Logan, William E. 2001. Letter to Colonel Gregory V. Stanley (Fort Stewart Directorate of Public Works, Environmental Branch), February 9.

SAIC (Science Applications International Corporation) 1997. *Corrective Action Plan–Part A Report, Underground Storage Tanks 15 & 16, Facility ID #9-089012, Building 1721, Fort Stewart, Georgia*, March.

SAIC 1998. *Corrective Action Plan–Part A Addendum Report, Underground Storage Tanks 15 & 16, Facility ID #9-089012, Building 1721, Fort Stewart, Georgia*, July.

SAIC 2000. *Corrective Action Plan–Part B Report, Underground Storage Tanks 15 & 16, Facility ID #9-089012, Building 1721, Fort Stewart, Georgia*, November.

SAIC 2001. *First Annual Monitoring Only Report, Underground Storage Tanks 15 & 16, Facility ID #9-089012, Building 1721, Fort Stewart, Georgia*, November.

White, Kenneth F. 1997. Letter to John Spears (Fort Stewart Directorate of Public Works, Environmental Branch), July 23.

ATTACHMENT C

CERTIFICATES OF ANALYSIS

GENERAL ENGINEERING LABORATORIES, LLC
a Member of THE GEL GROUP, INC.
Meeting Today's Needs with a Vision for Tomorrow

Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: February 11, 2003

Contact: Leslie Barbour
Project: Ft. Stewart LTM-UST 94A

Client Sample ID:	060642	Project:	SAIC00103
Sample ID:	73973002	Client ID:	SAIC038
Matrix:	Water		
Collect Date:	21-JAN-03 10:30		
Receive Date:	24-JAN-03		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
5035/8260B BTEX in Liquid Federal										
Benzene		418	1.65	5.00	ug/L	5	CDS1 01/30/03	2229	230558	1
Ethylbenzene		200	1.05	5.00	ug/L	5				
Toluene		292	1.95	5.00	ug/L	5				
Xylenes (total)		450	1.25	5.00	ug/L	5				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 8260B	8260B Volatiles In Liquid Federal	CDS1	01/30/03	2229	230558

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	5035/8260B BTEX in Liquid Fede	104%	(67%-136%)
Dibromofluoromethane	5035/8260B BTEX in Liquid Fede	119%	(62%-148%)
Toluene-d8	5035/8260B BTEX in Liquid Fede	119%	(58%-139%)

Notes:
The Qualifiers in this report are defined as follows :

< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration exceeds instrument calibration range
H Holding time exceeded
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package
Y QC Samples were not spiked with this compound.

The above sample is reported on an "as received" basis.

GENERAL ENGINEERING LABORATORIES, LLC
a Member of THE GEL GROUP, INC.
Meeting Today's Needs with a Vision for Tomorrow

Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: February 11, 2003

Contact: Leslie Barbour
Project: Ft. Stewart LTM-UST 94A

Client Sample ID: 060642
Sample ID: 73973002

Proiect: SAIC00103
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Valerie Davis
Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
a Member of THE GEL GROUP, INC.
Meeting Today's Needs with a Vision for Tomorrow

Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: February 11, 2003

Contact: Leslie Barbour
Project: Ft. Stewart LTM-UST 94A

Client Sample ID:	060644	Project:	SAIC00103
Sample ID:	73973003	Client ID:	SAIC038
Matrix:	Water		
Collect Date:	21-JAN-03 10:30		
Receive Date:	24-JAN-03		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
5035/8260B BTEX in Liquid Federal										
Benzene		414	1.65	5.00	ug/L	5	CDS1 01/30/03	2258	230558	1
Ethylbenzene		200	1.05	5.00	ug/L	5				
Toluene		291	1.95	5.00	ug/L	5				
Xylenes (total)		439	1.25	5.00	ug/L	5				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 8260B	8260B Volatiles In Liquid Federal	CDS1	01/30/03	2258	230558

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	5035/8260B BTEX in Liquid Fede	103%	(67%-136%)
Dibromofluoromethane	5035/8260B BTEX in Liquid Fede	113%	(62%-148%)
Toluene-d8	5035/8260B BTEX in Liquid Fede	118%	(58%-139%)

Notes:
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> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration exceeds instrument calibration range
H Holding time exceeded
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package
Y QC Samples were not spiked with this compound.

The above sample is reported on an "as received" basis.

GENERAL ENGINEERING LABORATORIES, LLC
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Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: February 11, 2003

Contact: Leslie Barbour
Project: Ft. Stewart LTM-UST 94A

Client Sample ID: 060644
Sample ID: 73973003

Project: SAIC00103
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Valerie Davis

Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
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Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: February 11, 2003

Contact: Leslie Barbour
Project: Ft. Stewart LTM-UST 94A

Client Sample ID: 060742
Sample ID: 73973005
Matrix: Water
Collect Date: 21-JAN-03 10:45
Receive Date: 24-JAN-03
Collector: Client

Project: SAIC00103
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
5035/8260B BTEX in Liquid Federal										
Benzene	U	ND	0.330	1.00	ug/L	1	CDS1 01/30/03	2356	230558	1
Ethylbenzene	U	ND	0.210	1.00	ug/L	1				
Toluene	U	ND	0.390	1.00	ug/L	1				
Xylenes (total)	U	ND	0.250	1.00	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 8260B	8260B Volatiles In Liquid Federal	CDS1	01/30/03	2356	230558

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	5035/8260B BTEX in Liquid Fede	100%	(67%-136%)
Dibromofluoromethane	5035/8260B BTEX in Liquid Fede	112%	(62%-148%)
Toluene-d8	5035/8260B BTEX in Liquid Fede	117%	(58%-139%)

Notes:
The Qualifiers in this report are defined as follows :

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E Concentration exceeds instrument calibration range
H Holding time exceeded
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package
Y QC Samples were not spiked with this compound.

The above sample is reported on an "as received" basis.

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Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: February 11, 2003

Contact: Leslie Barbour
Project: Ft. Stewart LTM-UST 94A

Client Sample ID: 060742
Sample ID: 73973005

Project: SAIC00103
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis.

Valerie Davis

Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
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Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: February 11, 2003

Contact: Leslie Barbour
Project: Ft. Stewart LTM-UST 94A

Client Sample ID:	060842	Project:	SAIC00103
Sample ID:	73973004	Client ID:	SAIC038
Matrix:	Water		
Collect Date:	21-JAN-03 10:25		
Receive Date:	24-JAN-03		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
5035/8260B BTEX in Liquid Federal										
Benzene	U	ND	0.330	1.00	ug/L	1	CDS1 01/30/03	2327	230558	1
Ethylbenzene	U	ND	0.210	1.00	ug/L	1				
Toluene	U	ND	0.390	1.00	ug/L	1				
Xylenes (total)	U	ND	0.250	1.00	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 8260B	8260B Volatiles In Liquid Federal	CDS1	01/30/03	2327	230558

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	5035/8260B BTEX in Liquid Fede	101%	(67%-136%)
Dibromofluoromethane	5035/8260B BTEX in Liquid Fede	112%	(62%-148%)
Toluene-d8	5035/8260B BTEX in Liquid Fede	117%	(58%-139%)

Notes:
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P The response between the confirmation column and the primary column is >40%D
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package
Y QC Samples were not spiked with this compound.

The above sample is reported on an "as received" basis.

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Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: February 11, 2003

Contact: Leslie Barbour
Project: Ft. Stewart LTM-UST 94A

Client Sample ID: 060842
Sample ID: 73973004

Project: SAIC00103
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Valerie Davis
Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
a Member of THE GEL GROUP, INC.
Meeting Today's Needs with a Vision for Tomorrow

Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: February 11, 2003

Contact: Leslie Barbour
Project: Ft. Stewart LTM-UST 94A

Client Sample ID: 060942
Sample ID: 73973001
Matrix: Water
Collect Date: 21-JAN-03 10:05
Receive Date: 24-JAN-03
Collector: Client

Project: SAIC00103
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
5035/8260B BTEX in Liquid Federal										
Benzene	U	ND	0.330	1.00	ug/L	1	CDS1 01/30/03	2201	230558	1
Ethylbenzene	U	ND	0.210	1.00	ug/L	1				
Toluene	U	ND	0.390	1.00	ug/L	1				
Xylenes (total)	U	ND	0.250	1.00	ug/L	1				

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 8260B	8260B Volatiles In Liquid Federal	CDS1	01/30/03	2201	230558

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	5035/8260B BTEX in Liquid Fede	104%	(67%-136%)
Dibromofluoromethane	5035/8260B BTEX in Liquid Fede	113%	(62%-148%)
Toluene-d8	5035/8260B BTEX in Liquid Fede	115%	(58%-139%)

Notes:
The Qualifiers in this report are defined as follows :

< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration exceeds instrument calibration range
H Holding time exceeded
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package
Y QC Samples were not spiked with this compound.

The above sample is reported on an "as received" basis.

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Meeting Today's Needs with a Vision for Tomorrow

Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: February 11, 2003

Contact: Leslie Barbour
Project: Ft. Stewart LTM-UST 94A

Client Sample ID: 060942
Sample ID: 73973001

Project: SAIC00103
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Valerie Davis
Reviewed by

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.: GLTM32

PROJECT NAME: Ft. Stewart LTM-D.O. 21

PROJECT NUMBER: 01-1624-04-5213-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Patricia A Stoll (Printed Name) PATRICIA A. STOLL

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod, Charleston, SC 29417

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	REQUESTED PARAMETERS: BTEX	VOC	Oil & Grease	Total Phnols	pH	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
Ø6Ø942	1/21/03	1005	WATER	2					2		
Ø6Ø642	1/21/03	1030	WATER	2					2		
Ø6Ø644	1/21/03	1036	WATER	2					2		
Ø6Ø842	1/21/03	1025	WATER	2					2		
Ø6Ø742	1/21/03	1045	WATER	2					2		
751142	1/21/03	1500	WATER	2					2		
751242	1/21/03	1540	WATER	2					2		
751442	1/21/03	1620	WATER	2					2		
751542	1/21/03	1625	WATER	2					2		
751342	1/21/03	1710	WATER	2					2		
TBØ31Ø	1/21/03	0745	WATER	2					2		

P Stoll 1/24/03

RELINQUISHED BY	Date/Time	RECEIVED BY	Date/Time	TOTAL NUMBER OF CONTAINERS: 22	Cooler Temperature: 4°C
Patricia A Stoll	1/24/03 1200	Mike Burton	1-24-03 1515	Cooler ID: #4	FEDEX NUMBER: N/A
COMPANY NAME: SAIC		COMPANY NAME: GEL			
RECEIVED BY: Mike Burton	Date/Time 1/24/03 1200	RELINQUISHED BY:	Date/Time	ORIGINAL COC IN UST 122	
COMPANY NAME: GEL		COMPANY NAME:		3rd ANNUAL MO REPORT	
RELINQUISHED BY: Mike Burton	Date/Time 1/24/03 1515	RECEIVED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: July 30, 2003

Contact: Leslie Barbour
Project: Ft. Stewart Long Term Monitoring

Client Sample ID: 060652
Sample ID: 82889007
Matrix: Water
Collect Date: 21-JUN-03 14:50
Receive Date: 24-JUN-03
Collector: Client

Project: SAIC03902
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
5035/8260B BTEX in Liquid Federal										
Benzene		57.9	0.330	1.00	ug/L	1	TLW 06/26/03	2108	259848	1
Ethylbenzene	E	177	0.210	1.00	ug/L	1				
Toluene		41.4	0.390	1.00	ug/L	1				
Xylenes (total)		352	0.250	1.00	ug/L	1				
Benzene		61.5	3.30	10.0	ug/L	10	TLW 06/26/03	1326	259848	2
Ethylbenzene		166	2.10	10.0	ug/L	10				
Toluene		37.2	3.90	10.0	ug/L	10				
Xylenes (total)		336	2.50	10.0	ug/L	10				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	
2	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	5035/8260B BTEX in Liquid Federal	83%	(69%-137%)
Dibromofluoromethane	5035/8260B BTEX in Liquid Federal	84%	(74%-144%)
Toluene-d8	5035/8260B BTEX in Liquid Federal	81%	(76%-129%)
Bromofluorobenzene	5035/8260B BTEX in Liquid Federal	83%	(69%-137%)
Dibromofluoromethane	5035/8260B BTEX in Liquid Federal	88%	(74%-144%)
Toluene-d8	5035/8260B BTEX in Liquid Federal	80%	(76%-129%)

Notes:
The Qualifiers in this report are defined as follows :

< Result is less than amount reported.
> Result is greater than amount reported.
B Target analyte was detected in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration of the target analyte exceeds the instrument calibration range.
H Analytical holding time exceeded.
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D.
U Indicates the target analyte was analyzed for but not detected above the detection limit.
UI Uncertain identification for gamma spectroscopy.

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Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: July 30, 2003

Contact: Leslie Barbour
Project: Ft. Stewart Long Term Monitoring

Client Sample ID: 060652
Sample ID: 82889007

Project: SAIC03902
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
h Sample preparation or preservation holding time exceeded.

The above sample is reported on an "as received" basis.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

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Valerie Davis

Reviewed by

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: July 30, 2003

Contact: Leslie Barbour
Project: Ft. Stewart Long Term Monitoring

Client Sample ID: 060654
Sample ID: 82889008
Matrix: Water
Collect Date: 21-JUN-03 14:50
Receive Date: 24-JUN-03
Collector: Client

Project: SAIC03902
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
5035/8260B BTEX in Liquid Federal										
Benzene		58.2	0.330	1.00	ug/L	1	TLW 06/26/03	2202	259848	1
Ethylbenzene	E	158	0.210	1.00	ug/L	1				
Toluene		38.2	0.390	1.00	ug/L	1				
Xylenes (total)		321	0.250	1.00	ug/L	1				
Benzene		86.7	3.30	10.0	ug/L	10	TLW 06/26/03	1354	259848	2
Ethylbenzene		377	2.10	10.0	ug/L	10				
Toluene		71.5	3.90	10.0	ug/L	10				
Xylenes (total)		751	2.50	10.0	ug/L	10				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	
2	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	5035/8260B BTEX in Liquid Federal	84%	(69%-137%)
Dibromofluoromethane	5035/8260B BTEX in Liquid Federal	84%	(74%-144%)
Toluene-d8	5035/8260B BTEX in Liquid Federal	83%	(76%-129%)
Bromofluorobenzene	5035/8260B BTEX in Liquid Federal	83%	(69%-137%)
Dibromofluoromethane	5035/8260B BTEX in Liquid Federal	84%	(74%-144%)
Toluene-d8	5035/8260B BTEX in Liquid Federal	83%	(76%-129%)

Notes:
The Qualifiers in this report are defined as follows :

< Result is less than amount reported.
> Result is greater than amount reported.
B Target analyte was detected in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration of the target analyte exceeds the instrument calibration range.
H Analytical holding time exceeded.
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D.
U Indicates the target analyte was analyzed for but not detected above the detection limit.
UI Uncertain identification for gamma spectroscopy.

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Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: July 30, 2003

Contact: Leslie Barbour
Project: Ft. Stewart Long Term Monitoring

Client Sample ID: 060654
Sample ID: 82889008

Project: SAIC03902
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
h Sample preparation or preservation holding time exceeded.

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Valerie Davis

Reviewed by

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Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: July 30, 2003

Contact: Leslie Barbour
Project: Ft. Stewart Long Term Monitoring

Client Sample ID: 060752
Sample ID: 82889006
Matrix: Water
Collect Date: 21-JUN-03 15:34
Receive Date: 24-JUN-03
Collector: Client

Project: SAIC03902
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
5035/8260B BTEX in Liquid Federal										
Benzene	U	ND	0.330	1.00	ug/L	1	TLW 06/26/03	0949	259848	1
Ethylbenzene	J	0.640	0.210	1.00	ug/L	1				
Toluene	U	ND	0.390	1.00	ug/L	1				
Xylenes (total)	J	0.876	0.250	1.00	ug/L	1				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	5035/8260B BTEX in Liquid Federal	89%	(69%-137%)
Dibromofluoromethane	5035/8260B BTEX in Liquid Federal	95%	(74%-144%)
Toluene-d8	5035/8260B BTEX in Liquid Federal	87%	(76%-129%)

Notes:
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> Result is greater than amount reported.
B Target analyte was detected in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration of the target analyte exceeds the instrument calibration range.
H Analytical holding time exceeded.
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D.
U Indicates the target analyte was analyzed for but not detected above the detection limit.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
h Sample preparation or preservation holding time exceeded.

The above sample is reported on an "as received" basis.

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: July 30, 2003

Contact: Leslie Barbour
Project: Ft. Stewart Long Term Monitoring

Client Sample ID: 060752
Sample ID: 82889006

Proiect: SAIC03902
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Valerie Davis

Reviewed by

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: July 30, 2003

Contact: Leslie Barbour
Project: Ft. Stewart Long Term Monitoring

Client Sample ID: 060852
Sample ID: 82889005
Matrix: Water
Collect Date: 21-JUN-03 15:41
Receive Date: 24-JUN-03
Collector: Client

Project: SAIC03902
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
5035/8260B BTEX in Liquid Federal										
Benzene	U	ND	0.330	1.00	ug/L	1	TLW 06/26/03	0921	259848	1
Ethylbenzene	U	ND	0.210	1.00	ug/L	1				
Toluene	U	ND	0.390	1.00	ug/L	1				
Xylenes (total)	U	ND	0.250	1.00	ug/L	1				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	5035/8260B BTEX in Liquid Federal	86%	(69%-137%)
Dibromofluoromethane	5035/8260B BTEX in Liquid Federal	87%	(74%-144%)
Toluene-d8	5035/8260B BTEX in Liquid Federal	82%	(76%-129%)

Notes:
The Qualifiers in this report are defined as follows :

< Result is less than amount reported.
> Result is greater than amount reported.
B Target analyte was detected in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration of the target analyte exceeds the instrument calibration range.
H Analytical holding time exceeded.
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D.
U Indicates the target analyte was analyzed for but not detected above the detection limit.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
h Sample preparation or preservation holding time exceeded.

The above sample is reported on an "as received" basis.

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Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: July 30, 2003

Contact: Leslie Barbour
Project: Ft. Stewart Long Term Monitoring

Client Sample ID: 060852
Sample ID: 82889005

Project: SAIC03902
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Valerie Davis

Reviewed by

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: July 30, 2003

Contact: Leslie Barbour
Project: Ft. Stewart Long Term Monitoring

Client Sample ID: 060952
Sample ID: 82889004
Matrix: Water
Collect Date: 21-JUN-03 14:56
Receive Date: 24-JUN-03
Collector: Client

Project: SAIC03902
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Volatile Organics Federal										
5035/8260B BTEX in Liquid Federal										
Benzene	J	0.996	0.330	1.00	ug/L	1	TLW 06/26/03	2041	259848	1
Ethylbenzene		7.01	0.210	1.00	ug/L	1				
Toluene		1.20	0.390	1.00	ug/L	1				
Xylenes (total)		11.5	0.250	1.00	ug/L	1				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate recovery	Test	Recovery%	Acceptable Limits
Bromofluorobenzene	5035/8260B BTEX in Liquid Federal	84%	(69%-137%)
Dibromofluoromethane	5035/8260B BTEX in Liquid Federal	86%	(74%-144%)
Toluene-d8	5035/8260B BTEX in Liquid Federal	84%	(76%-129%)

Notes:
The Qualifiers in this report are defined as follows :

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> Result is greater than amount reported.
B Target analyte was detected in the sample as well as the associated blank.
BD Flag for results below the MDC or a flag for low tracer recovery.
E Concentration of the target analyte exceeds the instrument calibration range.
H Analytical holding time exceeded.
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
P The response between the confirmation column and the primary column is >40%D.
U Indicates the target analyte was analyzed for but not detected above the detection limit.
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
Y QC Samples were not spiked with this compound.
h Sample preparation or preservation holding time exceeded.

The above sample is reported on an "as received" basis.

GENERAL ENGINEERING LABORATORIES, LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : SAIC
Address : 151 Lafayette Drive
Oak Ridge, Tennessee 37831

Report Date: July 30, 2003

Contact: Leslie Barbour
Project: Ft. Stewart Long Term Monitoring

Client Sample ID: 060952
Sample ID: 82889004

Project: SAIC03902
Client ID: SAIC038

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method

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Valerie Davis

Reviewed by

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.: GLTM35

PROJECT NAME: Ft. Stewart LTM-D.O. 21

PROJECT NUMBER: 01-1624-04-5213-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Patricia A Stoll (Printed Name) PATRICIA A. STOLL

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod, Charleston, SC 29417

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	VOC	Oil & Grease	Total Phnols	pH	MTBE	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
1A1226	6/20/03	1350	water	2					2	4		
1AØ626	6/21/03	1100	water	2					2	4		
1AØ622	6/21/03	1035	water	2					2	4		
1AØ522	6/21/03	0945	water	2					2	4		
1AØ822	6/21/03	0905	water	2					2	4		
751352	6/21/03	1714	water	2						2		
751252	6/21/03	1826	water	2						2		
751152	6/21/03	1836	water	2						2		
Ø6Ø952	6/21/03	1456	water	2						2		
Ø6Ø852	6/21/03	1541	water	2						2		
Ø6Ø752	6/21/03	1534	water	2						2		
Ø6Ø652	6/21/03	1450	water	2						2		
Ø6Ø654	6/21/03	1450	water	2						2		

RELINQUISHED BY: Patricia A Stoll	Date/Time 6/23/03 12/50	RECEIVED BY: TOM CARTER	Date/Time 6/24/03 1250	TOTAL NUMBER OF CONTAINERS: 96/02 15 6/24/03	Cooler Temperature: 4°C
COMPANY NAME: SAIC		COMPANY NAME: GEL		Cooler ID: #1	FEDEX NUMBER: N/A
RECEIVED BY:	Date/Time	RELINQUISHED BY: TOM CARTER	Date/Time 6/24/03 1530	ORIGINAL COC IN UST 122 3rd ANNUAL MO REPORT	
COMPANY NAME:		COMPANY NAME: GEL			
RELINQUISHED BY:	Date/Time	RECEIVED BY: Mike Sanders	Date/Time 6-24-03 1530		
COMPANY NAME:		COMPANY NAME: GEL			