Final
Eighth Annual Monitoring Only Report
for
Underground Storage Tanks 25 & 26
Facility ID # 9-025008
Building 1343
Hunter Army Airfield, Georgia

July 2008

Submitted to
U.S. Army Corps of Engineers, Savannah District
And
Fort Stewart Directorate of Public Works

Prepared by
SpecPro Environmental Services LLC
1006 Floyd Culler Court
Oak Ridge, TN 37830

Contract No. W912HN-04-D-0019
Delivery Order 0014

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List of Acronyms and Abbreviations

ACL	alternate concentration limit
ATL	alternate threshold limit
BTEX	benzene, toluene, ethylbenzene, and xylenes
bgs	below ground surface
CAP	Corrective Action Plan
CAPE	CAPE Environmental, Inc.
EPA	U.S. Environmental Protection Agency
F&T	fate and transport
GA EPD	Georgia Environmental Protection Division
HAAF	Hunter Army Airfield
IRA	interim removal action
IWQS	In-Stream Water Quality Standards
MCL	maximum contaminant level
µg/L	microgram per liter
ORC	oxygen releasing compound
PVC	polyvinyl chloride
TCE	trichloroethylene
SAIC	Science Applications International Corporation
SES	SpecPro Environmental Services LLC
STEP	Solutions to Environmental Problems, Inc.
UST	underground storage tank
USTMP	Underground Storage Tank Management Program
VOC	volatile organic compound

MONITORING ONLY REPORT

Submittal Date: July 2008 Monitoring Report Number: 8th Annual

For Period Covering: January 2007 to April 2008

Facility Name: USTs 25 & 26, Building 1343 Street Address: 2nd BN 3rd Aviation Brigade Motor pool, Tubb Street Hunter Army

Facility ID: 9-025008 City: Airfield County: Chatham Zip Code: 31409

Latitude: 32°01'35'' Longitude: 81°07'44''

Submitted by UST Owner/Operator:	Prepared by Consultant/Contractor:
Name: Thomas C. Fry/Environmental Branch	Name: Jeffrey C. Williams, P.E.
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1. 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 the attachments are true, accurate, complete, and in accordance with applicable state rules and regulations.

Name: Jeffrey C. Williams, P.E.

Signature: Jeffrey C. Williams

Date: 7/17/08

2. 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.

Former Underground Storage Tanks (USTs) 25 & 26, Facility ID #9-025008 were located near Building 1343 at Hunter Army Airfield, Georgia. The tanks and piping were closed in-place in 1998. Earth Tech, Inc. performed a Corrective Action Plan (CAP) - Part A investigation in 1998 (Earth Tech 1999), and Science Applications International Corporation (SAIC) performed a CAP-Part B investigation in 1999 to determine the extent of petroleum contamination at the site. Four temporary piezometers, 32 shallow monitoring wells, 3 deep wells, 2 soil borings, and 5 vertical-profile borings were installed during these investigations. The CAP-Part B Report (SAIC 2000a) was submitted to the Georgia Environmental Protection Division (GA EPD) Underground Storage Tank Management Program (USTMP) in February 2000 and was approved by GA EPD USTMP in correspondence dated August 21, 2000 (Logan 2000). The CAP-Part B Report identified a benzene plume in the shallow aquifer emanating from the location of the tanks, and a trichloroethylene (TCE) plume in the shallow aquifer at the intersection of the drainage swales that increases with depth toward the north. The CAP-Part B Report recommended that four of the shallow monitoring wells (AF-02, AF-05, AF-07, and AF-12) be sampled on a semiannual basis for benzene, toluene, ethylbenzene, and xylenes (BTEX), and that the three deep monitoring wells (AF-40, AF-41, and AF-42) be sampled on a semiannual basis for volatile organic compounds (VOCs).

Additional field investigations (i.e., geophysical survey, vertical profiles, and monitoring wells) to determine the horizontal and vertical extents of the TCE plume were conducted in 2000 and 2001, and are documented in the CAP-Part B Addendum #1 Report (SAIC 2000a). In the CAP-Part B Addendum the alternate concentration limit (ACL) for benzene was proposed at 340 micrograms per liter (µg/L). This CAP-Part B Addendum was submitted to GA EPD in June 2001 and approved in correspondence dated September 28, 2001 (Logan 2001). The benzene fate and transport (F&T) modeling performed as part of the CAP-Part B Report (SAIC 2000a) reflected a continuous source of contamination.

GA EPD USTMP provided comments on the Third Annual Monitoring Only Report (SAIC 2003a) in correspondence dated September 5, 2003, and requested that the CAP-Part B be revised to address the issue of free product recovery and that quarterly free product recovery reports be submitted. In response to these comments, Solutions to Environmental Problems, Inc. (STEP) conducted multi-phase extraction activities in wells AF-07, AF-12, and 260-MW-01 in September 2004 (STEP 2005).

GA EPD USTMP provided comments on the Fourth Annual Monitoring Only Report (SAIC 2004) in correspondence dated June 28, 2004, and requested that Fort Stewart address the issue of free product removal. GA EPD USTMP provided comments on the Fifth Annual Monitoring Only Report (SAIC 2005) in correspondence dated March 8, 2006, and requested that Fort Stewart over-excavate the pipe run and add oxygen releasing compounds (ORCs) to the tank pit during the tank excavation activities that were planned for 2006.

Tank excavation and removal activities were performed by CAPE Environmental, Inc. (CAPE) in April 2006. Prior to backfilling activities, 100 lbs of ORC was placed in the bottom of the excavation to enhance aerobic degradation of the BTEX compounds. The backfill material used at the site was the

removed material from the excavation. Monitoring wells AF-12 and 260-MW01 were destroyed during excavation and only AF-12 was replaced (with AF-12R) prior to the July 2006 semiannual sampling event.

The seventh annual monitoring only report showed that free product still remained in Well AF-07 in July 2006. In January 2007, free product was not present, but the benzene concentration in Well AF-07 was elevated to 1,540 µg/L. This concentration was above both the In-Stream Water Quality Standards (IWQS) and the site ACL.

In an attempt to remediate more rapidly the free product historically found in the two wells (AF-07 and AF-12R), an interim removal action (IRA) was implemented in March and April of 2007 to remove wells AF-07 and AF-12R along with the contaminated soil/free product around them in a single excavation for each well. The IRA included replacing the removed wells with new pre-packed wells (AF-7R and AF-12R) and backfilling the pits with gravel to allow any residual free product to migrate to and collect in the new wells. Installation of 4-inch diameter wells to replace the small diameter wells currently at the site was required because standard free product removal systems are not readily adaptable to wells with inside diameters of less than two inches. Because groundwater monitoring well AF-40 (a deep well) was immediately adjacent to groundwater monitoring well AF-07, plugging and abandonment of well AF-40 was required to facilitate the excavation of well AF-07.

The fifteenth semiannual groundwater monitoring conducted in October 2007, showed the benzene concentrations were below both the IWQS (71.28 µg/L) and the site ACL (340 µg/L). The toluene, ethylbenzene, and xylenes concentrations were also below the applicable, respective IWQS with no free product at the site. This implies that the IRA conducted earlier in the year may have been successful.

3. ACTIVITIES AND ASSESSMENT OF EXISTING CONDITIONS

3.1 POTENTIOMETRIC DATA:

(Appendix 1, Figure 2A and 2B: Potentiometric Surface Maps)
(Appendix II, Tables 1a-1o: Groundwater Elevations)

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

Free product was initially observed in well AF-12 at a thickness of 0.13 ft in January 2002. Well AF-12 was a ¾-in. polyvinyl chloride (PVC) well, and installation of absorbent socks or other standard free product removal systems was not readily adaptable to wells with inside diameters that small. Free product has continued to be present in well AF-12 during the semiannual sampling events (June 2002, January 2003, June 2003, January 2004, and July 2004). Free product was also observed in another ¾-in. PVC well, AF-07, in June 2003. Both of these wells are located along the piping that was closed in-place. Multi-phase extraction activities were conducted on wells AF-07, AF-12, and well 260-MW-01 in September 2004, to remove the free product at the site. Free product was again found in well AF-12 in January 2005, and in both wells (AF-12 and AF07) in July 2005.

In April 2006, CAPE performed tank removal activities to remove the potential source of contamination at the site. Removal activities were documented in the Final Closure Report for USTs 25 & 26 (CAPE

2006). Soil removed from the excavation was re-used to fill the excavation after sampling; sampling results indicated that BTEX levels were non-detect with detection limits above the site alternate threshold limit (ATL) for benzene of 159 µg/kg. In addition, prior to backfilling the excavation, 100 lbs of ORC was applied to the bottom of the excavation. The excavation was backfilled and the surface was finished with gravel. In January 2006 and July 2006, free product was found again in wells AF-12 and AF-07, respectively.

During the thirteenth semiannual sampling event in July 2006, groundwater elevations were measured in all of the monitoring wells to determine the groundwater flow direction. In July 2006, the groundwater flow direction was toward the southeast, and the groundwater gradient was approximately 0.02 feet/foot. Free product was observed in well AF-07.

During the fourteenth semiannual sampling event in January 2007, groundwater elevations were measured in 36 wells at the site to determine gradient and groundwater flow direction. Groundwater gradient was approximately 0.025 feet/foot and groundwater flow was still to the southeast. No free product was found at the site.

In an attempt to remediate more rapidly the free product historically found in the two wells (AF-07 and AF-12), an IRA was implemented in March and April of 2007 to remove wells AF-07 and AF-12 along with the contaminated soil/free product around them in a single excavation for each well. The IRA included replacing the removed wells with new pre-packed wells (AF-07R and AF-12R) and backfilling the pits with gravel to allow any residual free product to migrate to and collect in the new wells. Installation of 4-inch-diameter wells to replace the smaller diameter wells at the site was conducted. The excavations were backfilled with gravel to provide a porous media around the wells and the surface was completed with gravel to blend with the surrounding gravel surface.

During the fifteenth semiannual sampling event in October 2007, groundwater elevations were measured in 30 wells at the site to determine gradient and groundwater flow direction. Groundwater gradient was approximately 0.087 feet/foot and groundwater flow was to the southeast. No free product was found at the site.

During the sixteenth semiannual sampling event in April 2008, groundwater elevations were measured in 29 wells at the site to determine gradient and groundwater flow direction. Groundwater gradient was approximately 0.0583 feet/foot and groundwater flow was to the southeast. No free product was found at the site.

3.2 ANALYTICAL DATA

(Appendix I, Figures 3B and 3C: Groundwater Quality Maps)
(Appendix I, Figure 4: Trends of Contaminant Concentrations)
(Appendix II, Tables 2a-2e and 3: Groundwater analysis Results)
(Appendix III, Laboratory Analytical Results)

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

Fourteenth Semiannual Sampling Event:
During the fourteenth semiannual sampling event in January 2007, four shallow monitoring wells (AF-02, AF-05, AF-07, and AF-12) were sampled for BTEX using U.S. Environmental Protection Agency (EPA) Method 8260B. No free product was found at the site. Benzene was detected in three of the shallow wells with concentrations ranging from an estimated value of 0.343 µg/L to 1,540 µg/L, with only the sample from well AF-07 exceeding both the IWQS and the site ACL. Toluene and ethylbenzene were estimated or detected in each of the four shallow wells and no concentration of toluene or ethylbenzene exceeded the IWQS; the xylenes concentrations did not exceed the drinking water maximum contaminant level of 10,000 µg/L (xylenes have no IWQS).

In January 2007, sampling of deep monitoring wells (AF-40, AF-41 and AF-68) for VOCs using EPA Method 8260B was conducted. Benzene was only estimated in well AF-68 at a concentration of 0.993 µg/L, which is less than the IWQS of 71.28µg/L. 1,1-Dichloroethene was detected in three of the four samples with concentrations ranging from 1.05 µg/L to 1.47 µg/L. No concentration exceeded the drinking water maximum contaminant level (MCL) of 7 µg/L. Cis-1,2-Dichloroethene and trans- 1,2-Dichloroethene were combined in the tables and shown as "(Total) 1,2-Dichloroethene", and none of the concentrations exceeded the drinking water MCL of 100 µg/L. Trichloroethene was detected in three groundwater samples at concentrations ranging from 168 µg/L to an estimated 3,373 µg/L. All three concentrations exceeded the drinking water MCL of 5 µg/L and the IWQS of 81 µg/L.

Fifteenth Semiannual Sampling Event:

During the fifteenth semiannual sampling event in October 2007, four shallow monitoring wells (AF07R, AF12R, AF05, and AF02) were sampled for BTEX using EPA Method 8260B. No free product was found at the site. Benzene was found in two of the four wells (AF-05 and AF-07R) at concentrations of an estimated 0.18 µg/L and 41 µg/L respectively. Neither sample exceeded the IWQS of 71.28 µg/L or the site ACL of 340 µg/L. Toluene was detected in three of the four wells (AF-02, AF-05, and AF-07R) at concentrations ranging from an estimated 0.25 µg/L to 1.6 µg/L, and no concentration exceeded the IWQS of 200,000 µg/L. Ethylbenzene was detected in one of the four wells (AF-07R) at a concentration of 8.0 µg/L, which does not exceed the IWQS of 29,000 µg/L. Xylenes were found in two of the four wells (AF-05 and AF-07R) with concentrations of an estimated 0.78 µg/L and 1.4 µg/L respectively. There is no IWQS for total xylenes; the concentrations did not exceed the drinking water MCL of 10,000 µg/L.

In October 2007, sampling of deep monitoring wells AF-41 and AF-68 for VOCs using EPA Method 8021B/8260B was conducted. Benzene was only estimated in well AF-68 at a concentration of 0.41 µg/L, which is less than the IWQS of 71.28 µg/L. 1,1-Dichloroethene was detected in both deep groundwater samples at an estimated concentration of 0.30 µg/L and 1.5 µg/L. Neither concentration exceeded the drinking water MCL of 7 µg/L. Cis-1,2-Dichloroethene and trans- 1,2-Dichloroethene were combined in the tables and shown as "(Total) 1,2-Dichloroethene" and did not exceed the drinking water MCL of 100 µg/L. Trichloroethene was detected in both deep groundwater samples at concentrations of 110 µg/L and 24 µg/L. Both of these concentrations exceed the drinking water MCL of 5 µg/L, and the IWQS of 81 µg/L was exceeded only in well AF-68. It is noted that well AF-68 is upgradient of the USTs 25 & 26 site, and the contaminant concentrations found are assumed to be from an upgradient source.

Sixteenth Semiannual Sampling Event:

During the sixteenth semiannual sampling event in April 2008, six shallow monitoring wells (AF-12R, 260-MW02, 260-MW03, AF-05, AF-04, and AF-07R) were sampled for BTEX using EPA Method 8260B. It is noted that these wells were the six wells selected for monitoring since they are the closest to and downgradient from the contaminant source area for this site. No free product was found at the site. Benzene was found in five of the six wells: an estimated 0.48 µg/L was reported in well AF-12R, 61 µg/L was reported in well 260-MW002, 0.13 µg/L was estimated in well 260-MW03, well AF-05 estimated benzene at 0.56 µg/L, and well AF-07R reported benzene at 140 µg/L. Only the sample from well AF-07R reported benzene above its IWQS of 71.28 µg/L, and no well reported benzene above the ACL of 340 µg/L. Toluene was detected in one sample (well 260-MW02) at a concentration of 4.3 µg/L which is less than the IWQS of 200,000 µg/L. Ethylbenzene was found in three wells: 260-MW02 at a concentration of 84 µg/L, AF-05 at an estimated concentration 0.79 µg/L, and well AF-07R at a concentration of 32 µg/L – none of which exceeds the IWQS of 29,000 µg/L. Xylenes were found in three wells: 260-MW02, AF-05, and AF-07R with concentrations of 28 µg/L, 1.2 µg/L, and 1.9 µg/L respectively. There is no IWQS for total xylenes; however, the concentrations did not exceed the drinking water MCL of 10,000 µg/L.

Due to monitoring the six shallow wells chosen, the deep wells were not sampled during the sixteenth semiannual sampling event.

4. 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 for semiannual monitoring scores.)

The site ranking is determined using the environmental site sensitivity score.

5,750	CAP-Part B Report
25,750	Jun 2000 – First Semiannual Monitoring Event
25,750	Jan 2001 – Second Semiannual Monitoring Event
75,750	Jun 2001 – Third Semiannual Monitoring Event
50,750	Jan 2002 – Fourth Semiannual Monitoring Event
50,750	Jun 2002 – Fifth Semiannual Monitoring Event
130,750	Jan 2003 – Sixth Semiannual Monitoring Event
255,750	Jun 2003 – Seventh Semiannual Monitoring Event
220,750	Jan 2004 – Eighth Semiannual Monitoring Event
50,750	Jul 2004 – Ninth Semiannual Monitoring Event
75,750	Jan 2005 – Tenth Semiannual Monitoring Event
159,750	Jul 2005 – Eleventh Semiannual Monitoring Event
75,750	Jan 2006 – Twelfth Semiannual Monitoring Event
75,750	Jul 2006 – Thirteenth Semiannual Monitoring Event
25,750	Jan 2007 – Fourteenth Semiannual Monitoring Event
1,150	Oct 2007 – Fifteenth Semiannual Monitoring Event
3,400	Apr 2008 – Sixteenth Semiannual Monitoring Event

5. CONCLUSIONS/RECOMMENDATIONS

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

Semiannual monitoring for BTEX has been conducted for over seven years with additional efforts to remove the free product at the site. The last three semiannual sampling events have found no free product at the site.

The last two semiannual sampling events reported the benzene concentrations are below the site ACL of 340 µg/L; and the toluene, ethylbenzene and xylenes concentrations are below the IWQS or the drinking water MCLs, as applicable since xylenes have no IWQS.

Monitoring of the three deep wells for VOCs has been discontinued since it has been demonstrated the VOC contamination in the deep wells are from a separate upgradient source area.

The three objectives of the corrective action for USTs 25 & 26 were presented in the SAIC June 2001 *Corrective Action Plan-Part B, Addendum #1, Underground Storage Tanks 25 & 26, Facility ID #9-025008, Building 1343, Hunter Army Airfield, Georgia,* SAIC, June 2001. This corrective action was approved in correspondence from the Georgia EPD (Logan, 2001a) letter to Gregory Stanley (Fort Stewart Directorate of Public Works, Environmental Branch), September 28.

The corrective action objectives were: 1) remove free product that exceeds one-eighth inch in depth; 2) remediate groundwater contamination of benzene; and 3) remediate soil contamination, even though the CAP Part B recommended the soil did not need to be remediated.

The corrective actions have been met:

1) The last three semiannual monitoring reports show that there is no free product at the site.
2) The last two semiannual monitoring reports show the maximum benzene concentration is less than the site ACL of 340 µg/L.
3) Although remediation of the soil was not a recommendation, two removal actions at the site have occurred and have expedited site cleanup by removing the free product contamination.

Therefore, "No Further Action" status is recommended for this site because the objectives of the corrective action have been met.

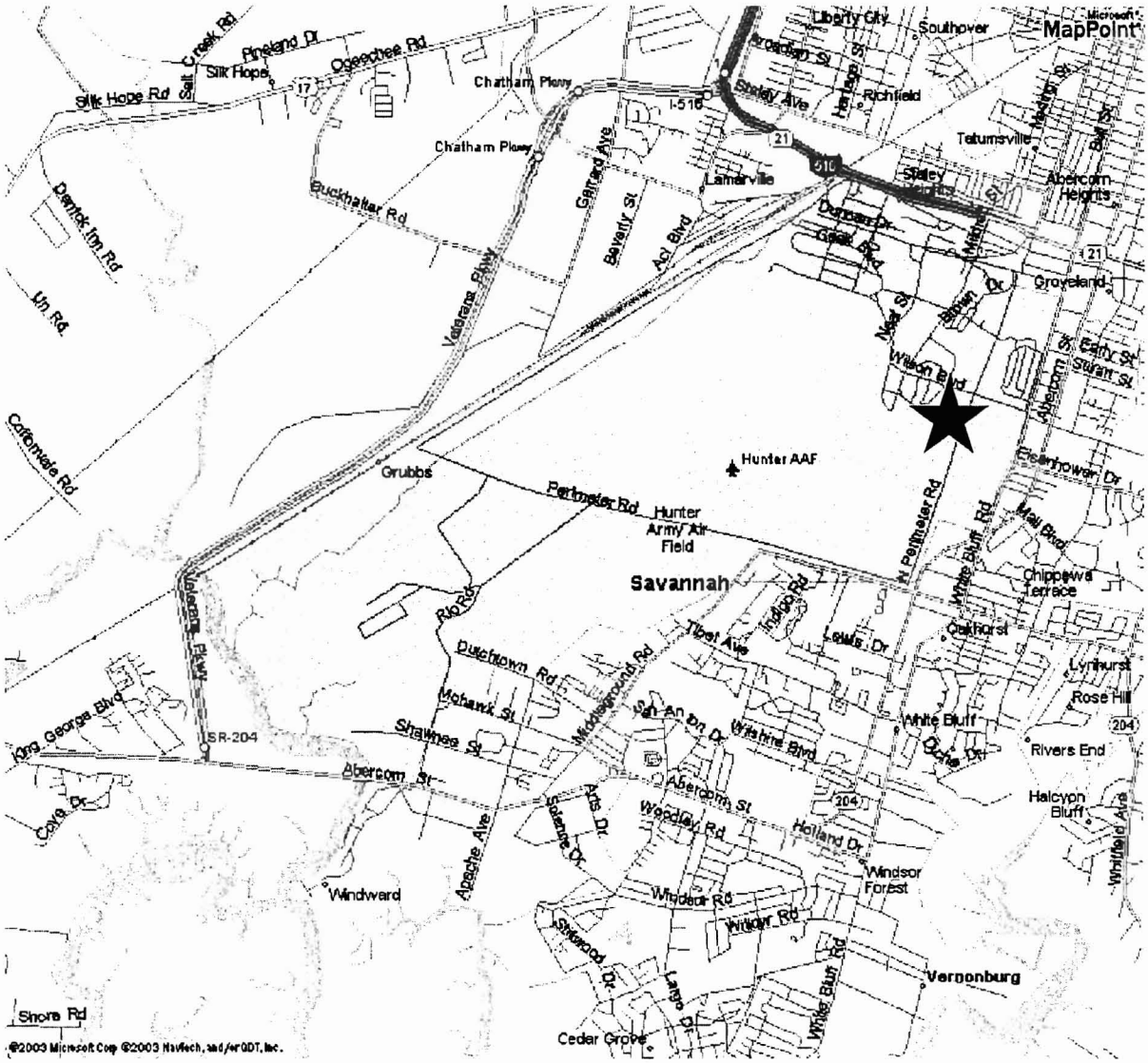
6. REIMBURSEMENT

Attached _____ N/A X___
(Appendix V: Reimbursement Application)

Fort Stewart is a federally owned facility and has funded the investigation for the USTs 25 & 26 Site at Building 1343, Facility ID #9-025008, using U.S. Department of Defense Environmental Restoration Account Funds. Application for Georgia UST Trust Fund reimbursement is not being pursued at this time.

APPENDIX I

REPORT FIGURES



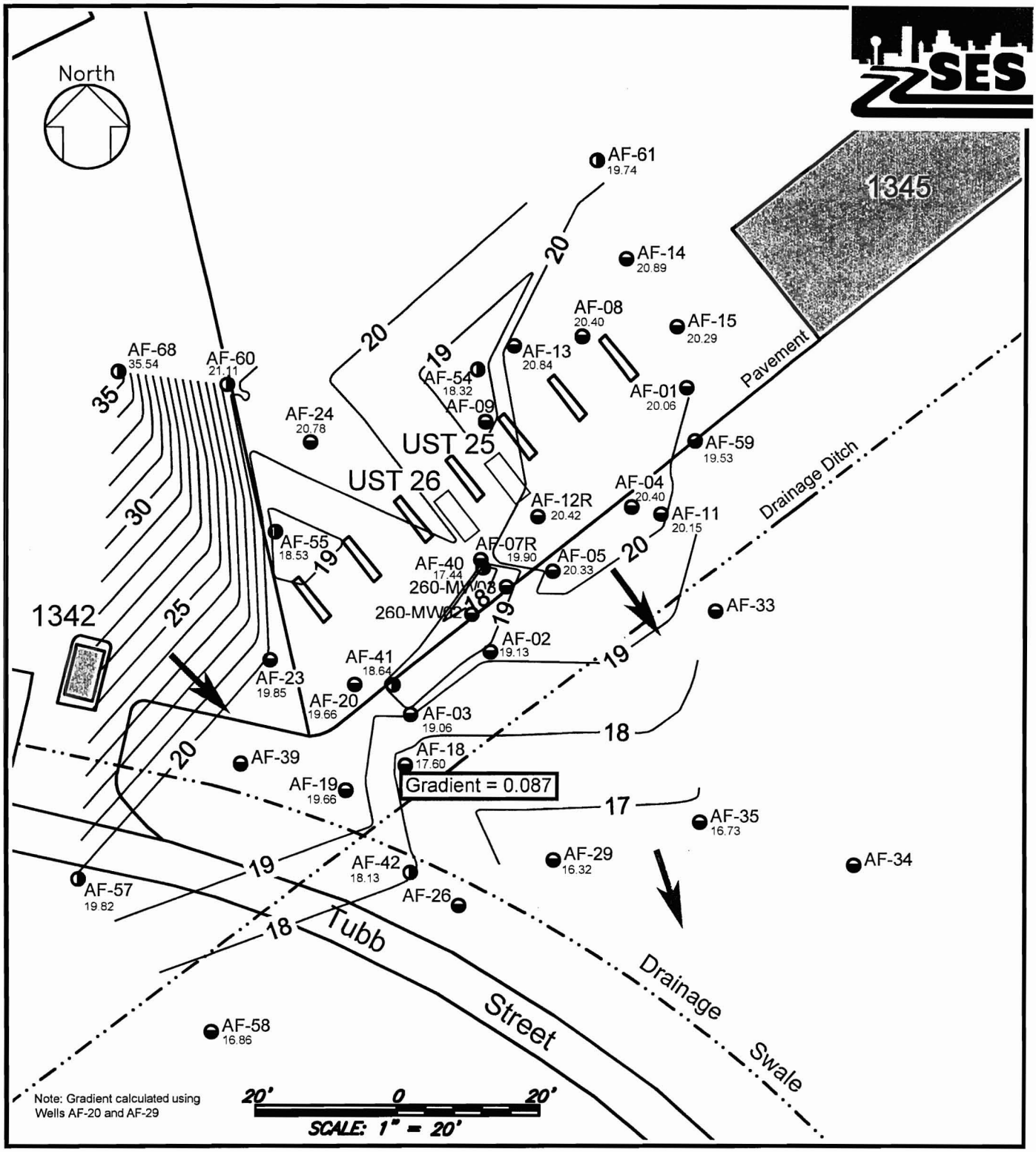
LEGEND

★ UST 25 and 26 Site

Job Title: Final 8th Annual Monitoring Report for the 260th Quartermaster Motor Pool Building 1343, Underground StorageTanks 25 and 26 Hunter Army Airfield Savannah, Georgia

Figure 1 Site Location Map USTs 25 and 26

R:/E0120/E0120.0014/USTs 25&26semi annual GW samplingGraphics/Figure 2-2 Loc Map USTs.mxd(08/01/07)



Legend

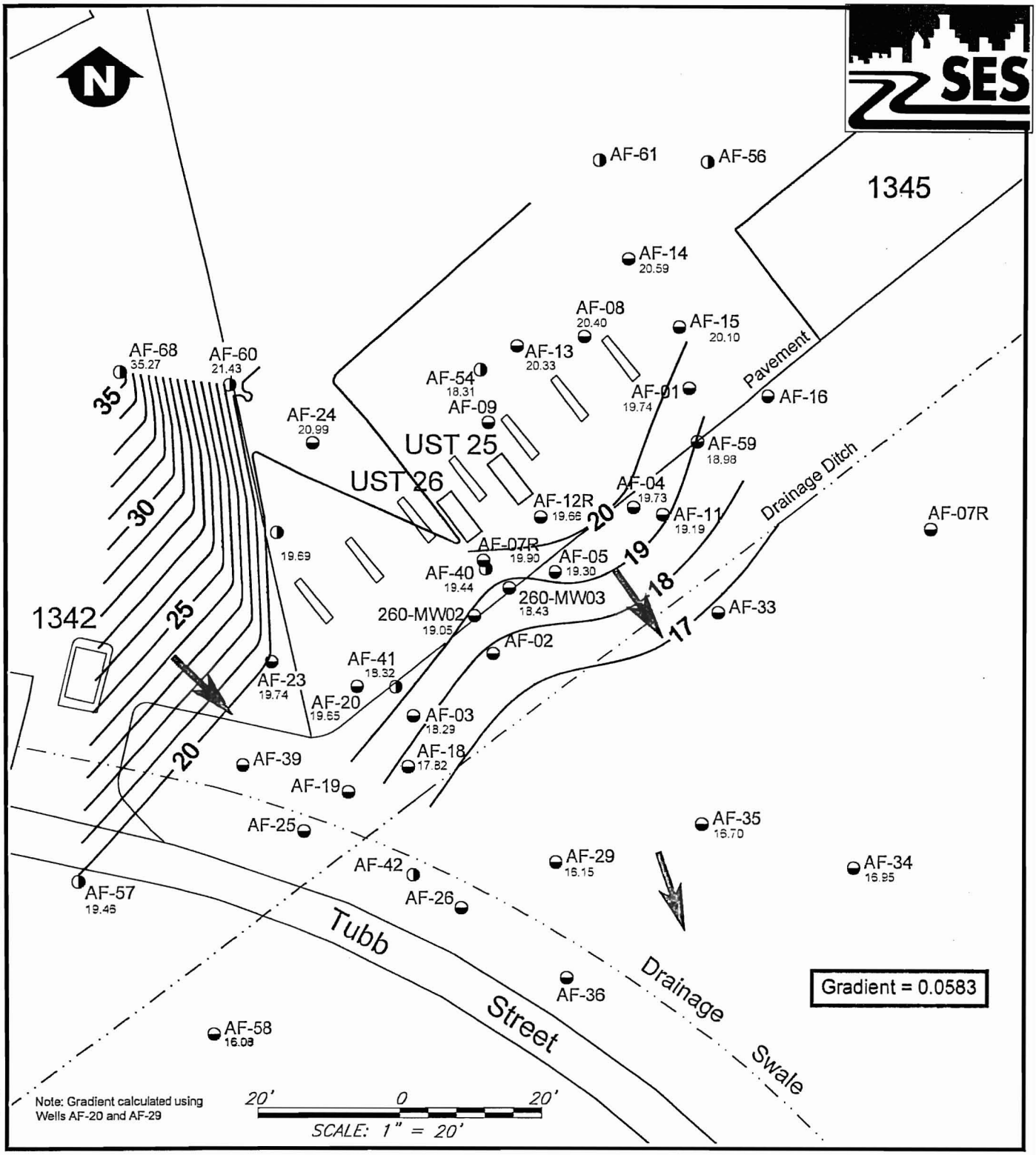
- AF-19 CAP Part B Shallow Monitoring Well
- AF-61 CAP Part B Deep Monitoring Well
- Building
- Groundwater Flow Direction
- 16.86 Groundwater Elevation
- Potentiometric Surface Contour

Source: Fort Stewart GIS
Prepared By: SES LLC Oak Ridge, TN
Job Title: Semi-Annual Monitoring at the 260th Quartermaster Motor Pool Building 1345, Underground Storage Tanks 25 and 26, Facility ID #9-025008
Hunter Army Airfield Fort Stewart, Georgia

Figure 2A Potentiometric Surface Map for USTs 25 and 26 Site (October 8 and 9, 2007)

E0120.0014 07/07/08

R:\E0120\E0120.0014 Grease Trap, 25-26 Sampling\USTs 25 &26 Semi GW Sampling\Eighth Annual Monitoring Report\Graphics\Fig 2A Potentiometric Map.dwg (06/09/08)



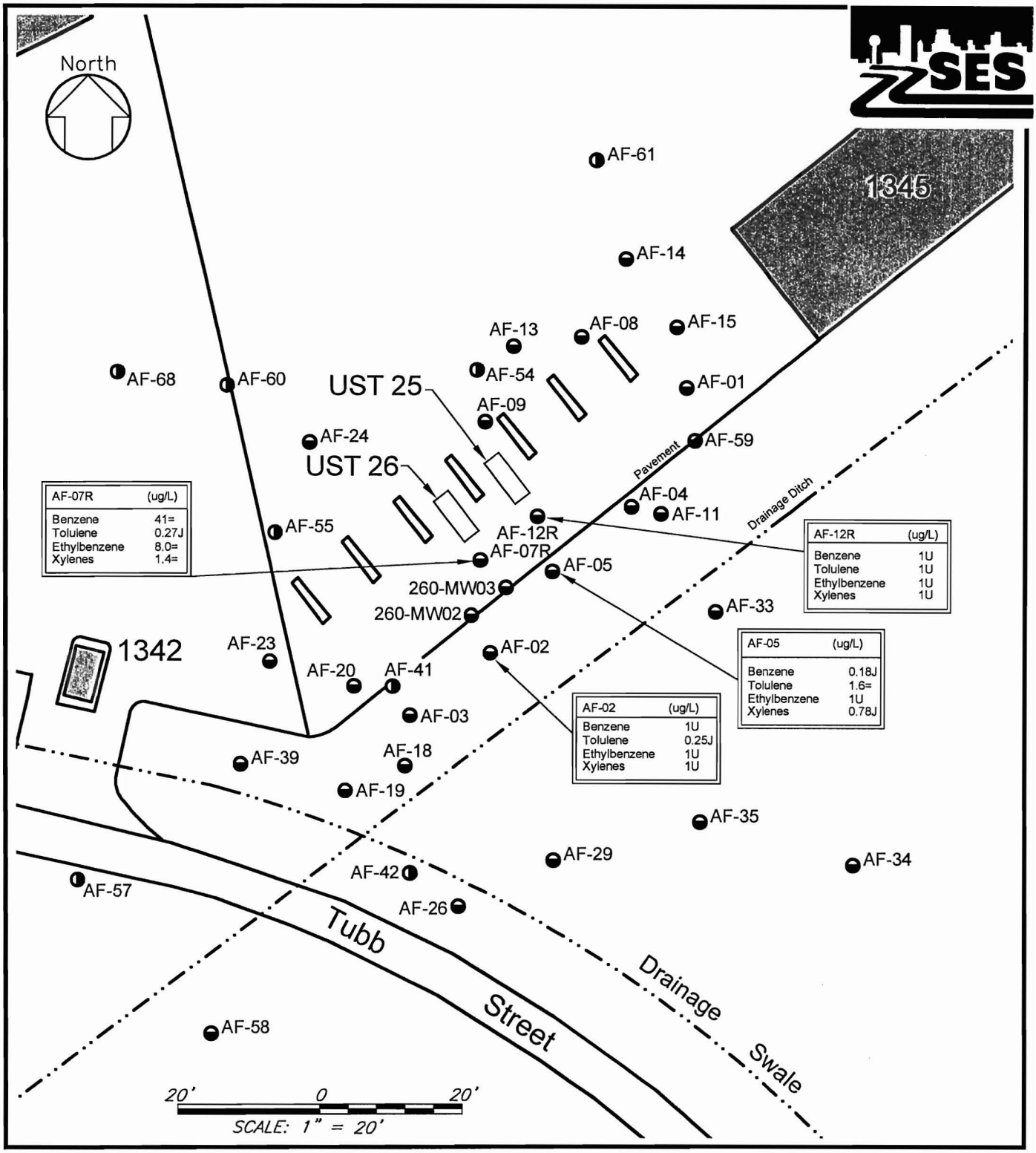
Legend

- AF-19 CAP Part B Shallow Monitoring Well
- AF-61 CAP Part B Deep Monitoring Well
- Building
- Groundwater Flow Direction
- 15.85 Groundwater Elevation
- Potentiometric Surface Contour

Source: Fort Stewart GIS
Prepared By: SES LLC Oak Ridge, TN
Job Title: Semi-Annual Monitoring at the 260th Quartermaster Motor Pool Building 1345, Underground Storage Tanks 25 and 26, Facility ID #9-025008
Hunter Army Airfield Fort Stewart, Georgia

Figure 2B Potentiometric Surface Map for USTs 25 and 26 Site (April 2008)

R:\E0120\E0120.0014 Grease Trap, 25-26 Sampling\USTs 25 &26 Semi GW Sampling\Eighth Annual Monitoring Report\Graphics\Fig Fig 2B Potentiometric Map Apr08.dwg (06/09/08)



Legend

AF-19 CAP Part B Shallow Monitoring Well

AF-61 CAP Part B Deep Monitoring Well

Building

= - Indicated that the compound was detected at the concentration reported.

J - Indicates that the value for the compound is an estimated value.

U - Indicates that the compound was not detected at the concentration reported.

Source: Fort Stewart GIS
Prepared By: SES LLC Oak Ridge, TN
Job Title: Semi-Annual Monitoring at the 260th Quartermaster Motor Pool Building 1345, Underground Storage Tanks 25 and 26, Facility ID #9-025008
Hunter Army Airfield Fort Stewart, Georgia

Figure 3A BTEX Shallow Groundwater Map for USTs 25 and 26 Site (October 2007)

R:\E0120\E0120.0014 Grease Trap, 25-26 Sampling\USTs 25 &26 Semi GW Sampling\Eighth Annual Monitoring Report\Graphics\Fig 3A-B BTEX Shallow-Deep Water.dwg (06/09/08)

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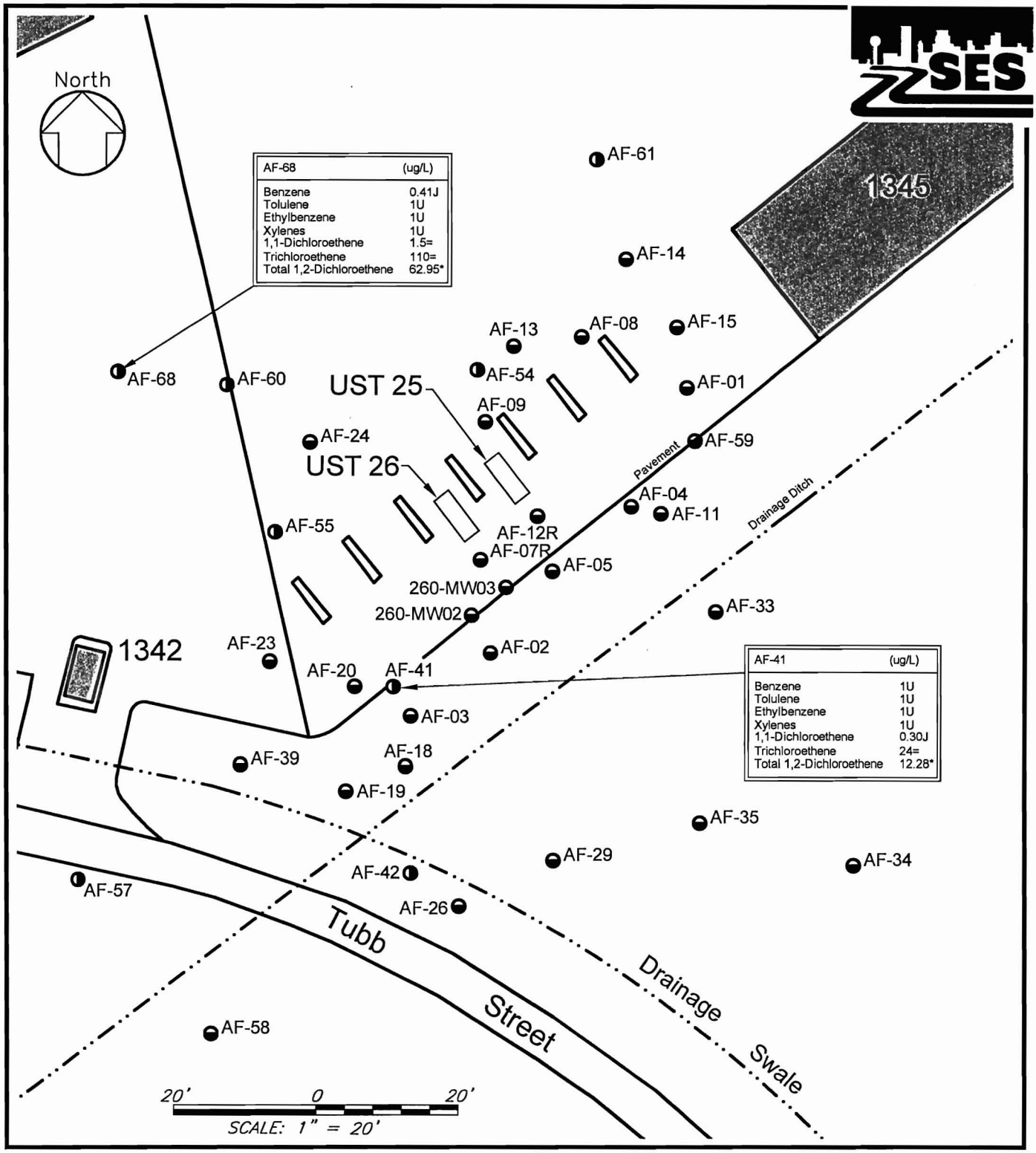
07/17/08



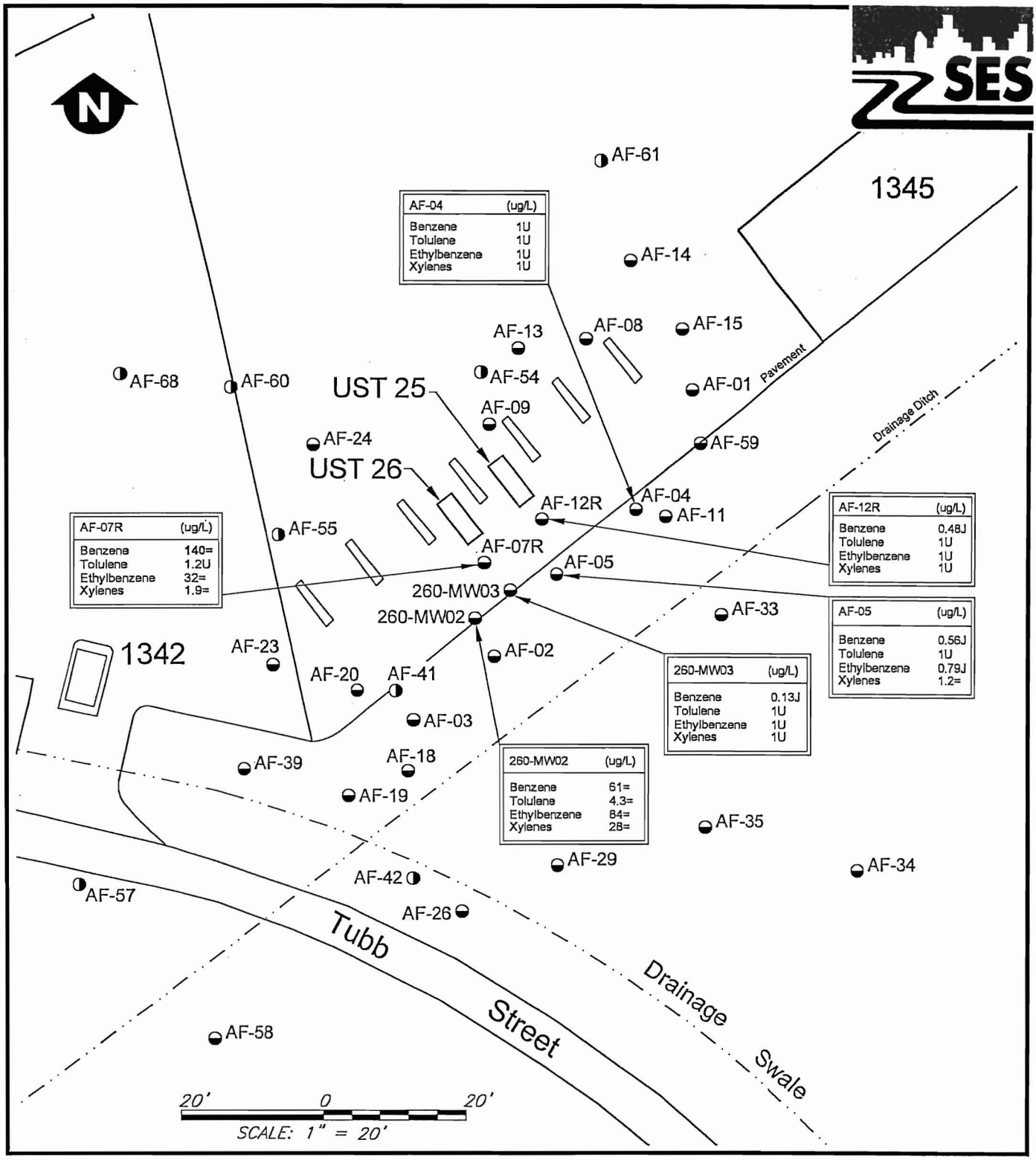
Legend

- AF-19 CAP Part B Shallow Monitoring Well
- AF-61 CAP Part B Deep Monitoring Well
- Building
- * - Indicates cis-1,2-dichloroethtene and trans-1,2-Dichloroethene have been added together (Total)
- = - Indicated that the compound was detected at the concentration reported.
- J - Indicates that the value for the compound is an estimated value.
- U - Indicates that the compound was not detected at the concentration reported.

Source: Fort Stewart GIS
Prepared By: SES LLC Oak Ridge, TN
Job Title: Semi-Annual Monitoring at the 260th Quartermaster Motor Pool Building 1345, Underground Storage Tanks 25 and 26, Facility ID #9-025008
Hunter Army Airfield Fort Stewart, Georgia

Figure 3B Deep Groundwater Map for USTs 25 and 26 Site (October 2007)

R:\E0120\E0120.0014 Grease Trap, 25-26 Sampling\USTs 25 &26 Semi GW Sampling\Eighth Annual Monitoring Report\Graphics\Fig 3A-B BTEX Shallow-Deep Water.dwg (06/09/08)



Legend

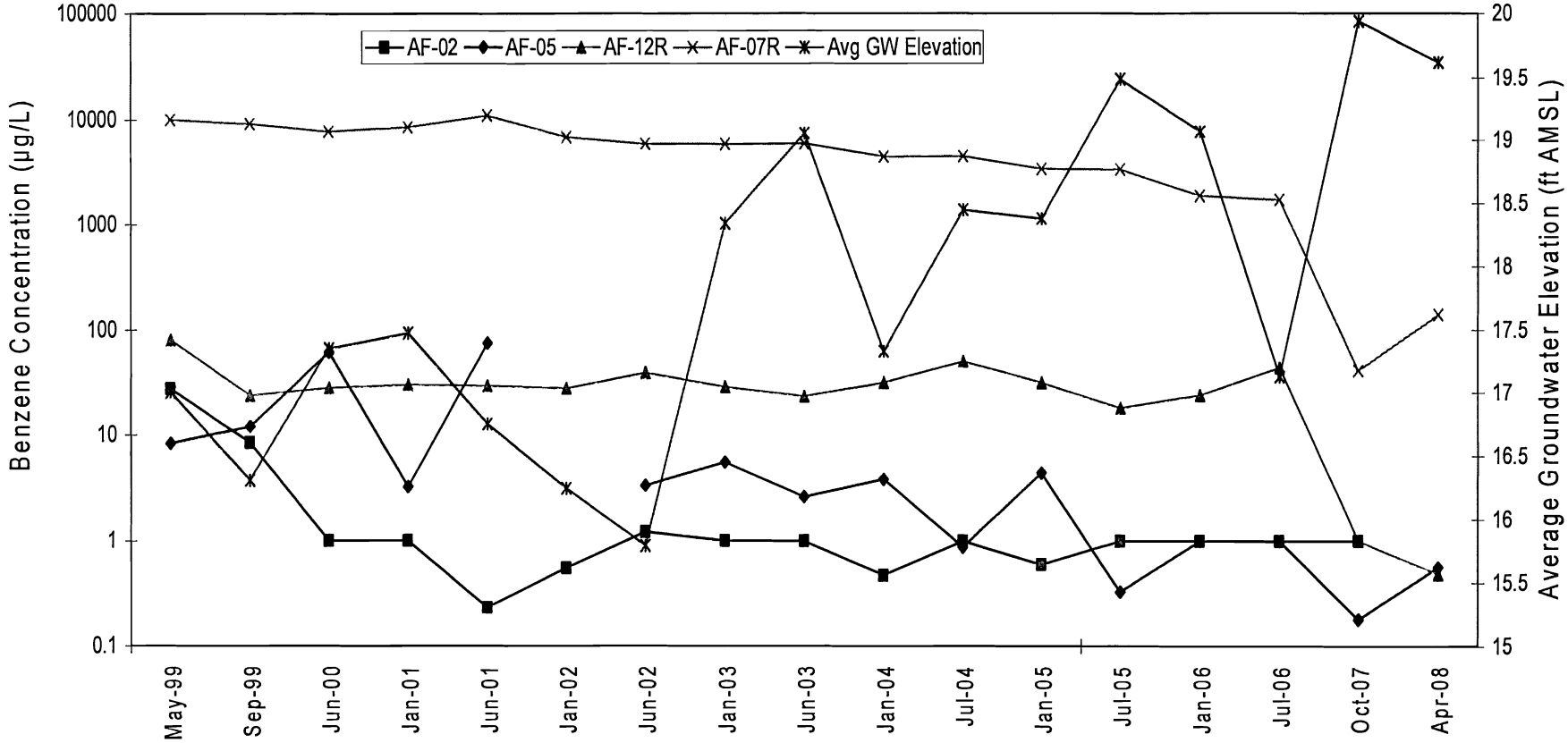
- AF-19 CAP Part B Shallow Monitoring Well
- AF-61 CAP Part B Deep Monitoring Well
- Building

Source: Fort Stewart GIS
Prepared By: SES LLC Oak Ridge, TN
Job Title: Semi-Annual Monitoring at the 260th Quartermaster Motor Pool Building 1345, Underground Storage Tanks 25 and 26, Facility ID #9-025008
Hunter Army Airfield Fort Stewart, Georgia

Figure 3C BTEX Shallow Groundwater Map for USTs 25 and 26 Site (April 2008)

E0120.0014 06/09/08

R:\E0120\E0120.0014 Grease Trap, 25-26 Sampling\USTs 25 &26 Semi GW Sampling\Eighth Annual Monitoring Report\Graphics\Fig 3C BTEX Shallow Water Apr08.dwg (06/09/08)



Note: AF-05 was damaged during the January 2002 sampling event.

Figure 4 Trend of Benzene Concentrations for the USTs 25 & 26 Site

APPENDIX II

REPORT TABLES

(Groundwater elevations for the first through the thirteenth events were taken from the Thirteenth Semiannual Monitoring Only Report)

Table 1a. Groundwater Elevations

Well Number	Date	Top Casing Elevation (ft AMSL)	Screened Interval (ft BGS)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Groundwater Elevation (ft AMSL)
First Semiannual Monitoring Event - June 2000							
AF-01	6/26/2000	23.02	2.5 - 12.5		5.07	0	17.95
AF-02	6/26/2000	21.97	2.0 - 12.0		5.05	0	16.92
AF-03	6/26/2000	22.30	2.0 - 12.0		5.03	0	17.27
AF-04	6/26/2000	22.24	2.0 - 12.0		4.61	0	17.63
AF-05	6/26/2000	22.21	2.0 - 12.0		4.96	0	17.25
AF-07	6/26/2000	22.90	2.5 - 12.5		5.35	0	17.55
AF-08	6/26/2000	23.10	2.5 - 12.5		4.25	0	18.85
AF-09	6/26/2000	22.93	2.0 - 12.0		5.37	0	17.56
AF-11	6/26/2000	21.93	1.0 - 11.0		4.55	0	17.38
AF-12	6/26/2000	22.86	2.5 - 12.5		5.53	0	17.33
AF-13	6/26/2000	22.79	2.5 - 12.5		3.62	0	19.17
AF-14	6/26/2000	23.04	1.4 - 11.4		3.35	0	19.69
AF-15	6/26/2000	23.28	1.5 - 11.5		4.66	0	18.62
AF-16	6/26/2000	23.28	1.6 - 11.6		3.31	0	18.86
AF-17	6/26/2000	18.93	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-18	6/26/2000	19.33	1.3 - 11.3		4.12	0	15.21
AF-19	6/26/2000	19.70	1.4 - 11.4		<1.00		
AF-20	6/26/2000	22.84	3.0 - 13.0		5.22	0	17.62
AF-23	6/26/2000	23.25	3.0 - 13.0		3.12	0	20.13
AF-24	6/26/2000	22.85	2.0 - 12.0	not measured	not measured	not measured	not measured
AF-25	6/26/2000	15.01	0.1 - 10.1	not measured	not measured	not measured	not measured
AF-26	6/26/2000	17.04	2.0 - 12.0		3.01	0	14.03
AF-27	6/26/2000	16.55	1.0 - 11.0		1.29	0	15.26
AF-28	6/26/2000	17.13	2.0 - 12.0		1.93	0	15.20
AF-29	6/26/2000	19.06	2.0 - 12.0		5.15	0	13.91
AF-33	6/26/2000	18.02	2.3 - 11.8		2.93	0	15.09
AF-34	6/26/2000	17.85	1.4 - 10.9		6.31	0	11.54
AF-35	6/26/2000	17.63	1.2 - 10.7		3.64	0	13.99
AF-36	6/26/2000	17.52	1.4 - 10.9		3.68	0	13.84
AF-37	6/26/2000	20.07	4.4 - 14.3		6.5	0	13.57
AF-38	6/26/2000	20.24	4.1 - 14.0		6.44	0	13.80
AF-39	6/26/2000	22.14	4.4 - 14.4		5.12	0	17.02
AF-40	6/26/2000	22.78	28.5 - 33.0		5.76	0	17.02
AF-41	6/26/2000	22.33	28.5 - 33.0		5.8	0	16.53
AF-42	6/26/2000	19.03	28.5 - 33.0		1.42	0	17.61

NOTES:
AMSL = above mean sea level.
BGS = below ground surface.
BTOC = below top of casing.

Table 1b. Groundwater Elevations

Well Number	Date	Top Casing Elevation (ft AMSL)	Screened Interval (ft BGS)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Groundwater Elevation (ft AMSL)
Second Semiannual Monitoring Event – January 2001							
AF-01	1/10/2001	23.02	2.5 - 12.5		5	0	18.02
AF-02	1/10/2001	21.97	2.0 - 12.0		4.61	0	17.36
AF-03	1/10/2001	22.3	2.0 - 12.0		4.94	0	17.36
AF-04	1/10/2001	22.24	2.0 - 12.0		4.85	0	17.39
AF-05	1/10/2001	22.21	2.0 - 12.0		4.85	0	17.36
AF-07	1/10/2001	22.9	2.5 - 12.5		5.27	0	17.63
AF-08	1/10/2001	22.10	2.5 - 12.5		4.39	0	18.71
AF-09	1/10/2001	22.93	2.0 - 12.0		4.54	0	18.39
AF-11	1/10/2001	21.93	1.0 - 11.0		4.59	0	17.34
AF-12	1/10/2001	22.86	2.5 - 12.5		5.32	0	17.54
AF-13	1/10/2001	22.79	2.5 - 12.5		3.59	0	19.20
AF-14	1/10/2001	23.04	1.4 - 11.4		3.82	0	19.22
AF-15	1/10/2001	23.28	1.5 - 11.5		4.87	0	18.41
AF-16	1/10/2001	22.17	1.6 - 11.6		3.70	0	18.47
AF-17	1/10/2001	18.93	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-18	1/10/2001	19.33	1.3 - 11.3	broken	broken	broken	broken
AF-19	1/10/2001	19.70	1.4 - 11.4		3.78	0	15.92
AF-20	1/10/2001	22.84	3.0 - 13.0		5.18	0	17.66
AF-23	1/10/2001	23.25	3.0 - 13.0		5.28	0	17.97
AF-24	1/10/2001	22.85	2.0 - 12.0		3.34	0	19.51
AF-25	1/10/2001	15.01	0.1 - 10.1		0.45	0	14.56
AF-26	1/10/2001	17.04	2.0 - 12.0		2.21	0	14.83
AF-27	1/10/2001	16.55	1.0 - 11.0		0.97	0	15.58
AF-28	1/10/2001	17.13	2.0 - 12.0		0.86	0	16.27
AF-29	1/10/2001	19.06	2.0 - 12.0		3.43	0	15.63
AF-33	1/10/2001	18.02	2.3 - 11.8		1.98	0	16.04
AF-34	1/10/2001	17.85	1.4 - 10.9		4.21	0	13.64
AF-35	1/10/2001	17.63	1.2 - 10.7		1.95	0	15.68
AF-36	1/10/2001	17.52	1.4 - 10.9		2.26	0	15.26
AF-37	1/10/2001	20.07	4.4 - 14.3		5	0	15.07
AF-38	1/10/2001	20.24	4.1 - 14.0	destroyed	destroyed	destroyed	destroyed
AF-39	1/10/2001	22.14	4.4 - 14.4		4.91	0	17.23
AF-40	1/10/2001	22.78	28.5 - 33.0		5.1	0	17.68
AF-41	1/10/2001	22.33	28.5 - 33.0		5.04	0	17.29
AF-42	1/10/2001	19.03	28.5 - 33.0		0.77	0	18.26

NOTES:
AMSL = above mean sea level.
BGS = below ground surface.
BTOC = below top of casing.

Table 1c. Groundwater Elevations

Well Number	Date	Top Casing Elevation (ft AMSL)	Screened Interval (ft BGS)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Groundwater Elevation (ft AMSL)
Third Semiannual Monitoring Event – June 2001							
AF-01	6/8/2001	23.02	2.5 - 12.5		5.42	0	17.60
AF-02	6/8/2001	21.94	2.0 - 12.0		5.98	0	15.96
AF-03	6/8/2001	22.27	2.0 - 12.0		6.23	0	16.04
AF-04	6/8/2001	22.24	2.0 - 12.0		4.06	0	18.18
AF-05	6/8/2001	22.21	2.0 - 12.0		5.63	0	16.58
AF-07	6/8/2001	22.90	2.5 - 12.5		5.51	0	17.39
AF-08	6/8/2001	23.10	2.5 - 12.5		4.46	0	18.64
AF-09	6/8/2001	22.93	2.0 - 12.0		4.52	0	18.41
AF-11	6/8/2001	21.89	1.0 - 11.0		4.62	0	17.27
AF-12	6/8/2001	22.86	2.5 - 12.5		5.77	0	17.09
AF-13	6/8/2001	22.79	2.5 - 12.5		3.84	0	18.95
AF-14	6/8/2001	23.04	1.4 - 11.4		3.59	0	19.45
AF-15	6/8/2001	23.28	1.5 - 11.5		4.87	0	18.41
AF-16	6/8/2001	22.17	1.6 - 11.6		4.31	0	17.86
AF-17	6/8/2001	18.93	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-18	6/8/2001	20.13	1.3 - 11.3		5.33	0	14.80
AF-19	6/8/2001	19.68	1.4 - 11.4		4.89	0	14.79
AF-20	6/8/2001	22.84	3.0 - 13.0		5.31	0	17.53
AF-23	6/8/2001	23.25	3.0 - 13.0		5.26	0	17.99
AF-24	6/8/2001	22.85	2.0 - 12.0		3.12	0	19.73
AF-25	6/8/2001	15.03	0.1 - 10.1		1.18	0	13.85
AF-26	6/8/2001	17.65	2.0 - 12.0		4.10	0	13.55
AF-27	6/8/2001	16.50	1.0 - 11.0		2.81	0	13.69
AF-28	6/8/2001	17.11	2.0 - 12.0		2.62	0	14.49
AF-29	6/8/2001	19.06	2.0 - 12.0		5.86	0	13.20
AF-33	6/8/2001	18.07	2.3 - 11.8		3.13	0	14.94
AF-34	6/8/2001	17.85	1.4 - 10.9		7.19	0	10.66
AF-35	6/8/2001	17.63	1.2 - 10.7		4.30	0	13.33
AF-36	6/8/2001	17.52	1.4 - 10.9		4.26	0	13.26
AF-37	6/8/2001	20.06	4.4 - 14.3		7.03	0	13.03
AF-38	6/8/2001	20.14	4.1 - 14.0		6.71	0	13.43
AF-39	6/8/2001	22.12	4.4 - 14.4		5.09	0	17.03
AF-40	6/8/2001	22.78	28.5 - 33.0		6.05	0	16.73
AF-41	6/8/2001	22.33	28.5 - 33.0		6.18	0	16.15
AF-42	6/8/2001	19.03	28.5 - 33.0		1.75	0	17.28
AF-53	6/8/2001	22.93	20.0 - 30.0		4.83	0	18.10
AF-54	6/8/2001	22.43	32.4 - 42.4		5.06	0	17.37
AF-55	6/8/2001	22.76	24.0 - 34.0		4.84	0	17.92
AF-56	6/8/2001	22.99	19.9 - 29.9		4.74	0	18.25
AF-57	6/8/2001	22.21	57.8 - 62.8		4.60	0	17.61
AF-58	6/8/2001	22.32	2.7 - 12.7		9.51	0	12.81
AF-59	6/8/2001	22.33	2.3 - 12.3		4.99	0	17.34
AF-60	6/8/2001	23.77	20.0 - 30.0		3.71	0	20.06
AF-61	6/8/2001	23.47	20.0 - 30.0		4.35	0	19.12
AF-62	6/8/2001	22.11	3.0 - 13.0		4.39	0	17.72

NOTES:
AMSL = above mean sea level.
BGS = below ground surface.
BTOC = below top of casing.

Table 1d. Groundwater Elevations

Well Number	Date	Top Casing Elevation (ft AMSL)	Screened Interval (ft BGS)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness	Groundwater Elevation (ft AMSL)
Fourth Semiannual Monitoring Event – January 2002							
AF-01	1/16/2002	23.02	2.5 - 12.5		6.32	0	16.70
AF-02	1/16/2002	21.94	2.0 - 12.0		5.48	0	16.46
AF-03	1/16/2002	22.27	2.0 - 12.0		6.17	0	16.10
AF-04	1/16/2002	22.24	2.0 - 12.0		1.97	0	20.27
AF-05	1/16/2002	22.21	2.0 - 12.0		6.10	0	16.11
AF-07	1/16/2002	22.90	2.5 - 12.5		6.57	0	16.33
AF-08	1/16/2002	23.10	2.5 - 12.5		5.54	0	17.56
AF-09	1/16/2002	22.93	2.0 - 12.0		5.79	0	17.14
AF-11	1/16/2002	21.89	1.0 - 11.0		2	0	19.89
AF-12	1/16/2002	22.86	2.5 - 12.5	6.72	6.85	0.13	16.09[a]
AF-13	1/16/2002	22.79	2.5 - 12.5		5.04	0	17.75
AF-14	1/16/2002	23.04	1.4 - 11.4		4.82	0	18.22
AF-15	1/16/2002	23.28	1.5 - 11.5		6.04	0	17.24
AF-16	1/16/2002	22.17	1.6 - 11.6		4.41	0	17.76
AF-17	1/16/2002	18.93	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-18	1/16/2002	20.13	1.3 - 11.3		4.91	0	15.22
AF-19	1/16/2002	19.68	1.4 - 11.4		4.28	0	15.4
AF-20	1/16/2002	22.84	3.0 - 13.0		6.45	0	16.39
AF-23	1/16/2002	23.25	3.0 - 13.0		6.38	0	16.87
AF-24	1/16/2002	22.85	2.0 - 12.0		4.32	0	18.53
AF-25	1/16/2002	15.03	0.1 - 10.1		0.96	0	14.07
AF-26	1/16/2002	17.65	2.0 - 12.0		4.08	0	13.57
AF-27	1/16/2002	16.50	1.0 - 11.0		2.71	0	13.79
AF-28	1/16/2002	17.11	2.0 - 12.0		2.63	0	14.48
AF-29	1/16/2002	19.06	2.0 - 12.0		5.36	0	13.7
AF-33	1/16/2002	18.07	2.3 - 11.8		3.22	0	14.85
AF-34	1/16/2002	17.85	1.4 - 10.9		7.16	0	10.69
AF-35	1/16/2002	17.63	1.2 - 10.7		4.11	0	13.52
AF-36	1/16/2002	17.52	1.4 - 10.9		4.27	0	13.25
AF-37	1/16/2002	20.06	4.4 - 14.3		7	0	13.06
AF-38	1/16/2002	20.14	4.1 - 14.0	damaged	damaged	damaged	damaged
AF-39	1/16/2002	22.12	4.4 - 14.4		5.91	0	16.21
AF-40	1/16/2002	22.78	28.5 - 33.0		6.55	0	16.23
AF-41	1/16/2002	22.33	28.5 - 33.0		6.56	0	15.77
AF-42	1/16/2002	19.03	28.5 - 33.0		2.26	0	16.77
AF-53	1/16/2002	22.93	20.0 - 30.0		5.63	0	17.30
AF-54	1/16/2002	22.43	32.4 - 42.4		5.58	0	16.85
AF-55	1/16/2002	22.76	24.0 - 34.0		5.50	0	17.26
AF-56	1/16/2002	22.99	19.9 - 29.9		5.51	0	17.48
AF-57	1/16/2002	22.21	57.8 - 62.8		5.12	0	17.09
AF-58	1/16/2002	22.32	2.7 - 12.7		9.42	0	12.90
AF-59	1/16/2002	22.33	2.3 - 12.3		5.73	0	16.60
AF-60	1/16/2002	23.77	20.0 - 30.0		4.51	0	19.26
AF-61	1/16/2002	23.47	20.0 - 30.0		5.33	0	18.14
AF-62	1/16/2002	22.11	3.0 - 13.0		4.58	0	17.53

NOTES:

[a] = The water level was corrected for free product, assumed to be gasoline, with a density of 680 kg/m³.

AMSL = above mean sea level.

BGS = below ground surface.

BTOC = below top of casing.

Table 1e. Groundwater Elevations

Well Number	Date	Top Casing Elevation (ft AMSL)	Screened Interval (ft BGS)	Depth to Product (ft BTOC)	*Depth to Water (ft BTOC)*	Product Thickness (ft)	Groundwater Elevation (ft AMSL)
Fifth Semiannual Monitoring Event – June 2002							
AF-01	6/7/2002	23.02	2.5 - 12.5		6.56	0	16.46
AF-02	6/7/2002	21.94	2.0 - 12.0		6.51	0	15.43
AF-03	6/7/2002	22.27	2.0 - 12.0		6.44	0	15.83
AF-04	6/7/2002	22.24	2.0 - 12.0		5.07	0	17.17
AF-05	6/7/2002	22.21	2.0 - 12.0		6.57	0	15.64
AF-07	6/7/2002	22.9	2.5 - 12.5		6.63	0	16.27
AF-08	6/7/2002	23.10	2.5 - 12.5		5.40	0	17.70
AF-09	6/7/2002	22.93	2.0 - 12.0		5.56	0	17.37
AF-11	6/7/2002	21.89	1.0 - 11.0		5.12	0	16.77
AF-12	6/7/2002	22.86	2.5 - 12.5	6.95	7.20	0.25	15.83[a]
AF-13	6/7/2002	22.79	2.5 - 12.5		4.81	0	17.98
AF-14	6/7/2002	23.04	1.4 - 11.4		4.53	0	18.51
AF-15	6/7/2002	23.28	1.5 - 11.5		5.91	0	17.37
AF-16	6/7/2002	22.17	1.6 - 11.6		5.55	0	16.62
AF-17	6/7/2002	18.93	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-18	6/7/2002	20.13	1.3 - 11.3		5.60	0	14.53
AF-19	6/7/2002	19.68	1.4 - 11.4		5.37	0	14.31
AF-20	6/7/2002	22.84	3.0 - 13.0		6.40	0	16.44
AF-23	6/7/2002	23.25	3.0 - 13.0		6.38	0	16.87
AF-24	6/7/2002	22.85	2.0 - 12.0		4.06	0	18.79
AF-25	6/7/2002	15.03	0.1 - 10.1		2.07	0	12.96
AF-26	6/7/2002	17.65	2.0 - 12.0		5.23	0	12.42
AF-27	6/7/2002	16.50	1.0 - 11.0		3.76	0	12.74
AF-28	6/7/2002	17.11	2.0 - 12.0		4.06	0	13.05
AF-29	6/7/2002	19.06	2.0 - 12.0		6.53	0	12.53
AF-33	6/7/2002	18.07	2.3 - 11.8		4.26	0	13.81
AF-34	6/7/2002	17.85	1.4 - 10.9		8.70	0	9.15
AF-35	6/7/2002	17.63	1.2 - 10.7		5.63	0	12
AF-36	6/7/2002	17.52	1.4 - 10.9		5.43	0	12.09
AF-37	6/7/2002	20.06	4.4 - 14.3		8.21	0	11.85
AF-38	6/7/2002	20.14	4.1 - 14.0		7.55	0	12.59
AF-39	6/7/2002	22.12	4.4 - 14.4		6.27	0	15.85
AF-40	6/7/2002	22.78	28.5 - 33.0		7.04	0	15.74
AF-41	6/7/2002	22.33	28.5 - 33.0		7.17	0	15.16
AF-42	6/7/2002	19.03	28.5 - 33.0		2.72	0	16.31
AF-53	6/7/2002	22.93	20.0 - 30.0		6.07	0	16.86
AF-54	6/7/2002	22.43	32.4 - 42.4		6.07	0	16.36
AF-55	6/7/2002	22.76	24.0 - 34.0		5.91	0	16.85
AF-56	6/7/2002	22.99	19.9 - 29.9		5.79	0	17.20
AF-57	6/7/2002	22.21	57.8 - 62.8		5.60	0	16.61
AF-58	6/7/2002	22.32	2.7 - 12.7		10.55	0	11.77
AF-59	6/7/2002	22.33	2.3 - 12.3		6.05	0	16.28
AF-60	6/7/2002	23.77	20.0 - 30.0		4.61	0	19.16
AF-61	6/7/2002	23.47	20.0 - 30.0		5.46	0	18.01
AF-62	6/7/2002	22.11	3.0 - 13.0		5.39	0	16.72

NOTES:
[a] = The water level was corrected for free product, assumed to be gasoline, with a density of 680 kg/m³.
AMSL = above mean sea level.
BGS = below ground surface.
BTOC = below top of casing.

Table 1f. Groundwater Elevations

Well Number	Date	Top Casing Elevation (ft AMSL)	Screened Interval (ft BGS)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Groundwater Elevation (ft AMSL)
Sixth Semiannual Monitoring Event – January 2003							
AF-01	1/27/2003	23.02	2.5 - 12.5		3.73	0	19.29
AF-02	1/27/2003	21.94	2.0 - 12.0		4.11	0	17.83
AF-03	1/27/2003	22.27	2.0 - 12.0		4.18	0	18.09
AF-04	1/27/2003	22.24	2.0 - 12.0		2.94	0	19.30
AF-05	1/27/2003	22.21	2.0 - 12.0		4.05	0	18.16
AF-07	1/27/2003	22.90	2.5 - 12.5		3.94	0	18.96
AF-08	1/27/2003	23.10	2.5 - 12.5		3.34	0	19.76
AF-09	1/27/2003	22.93	2.0 - 12.0		3.28	0	19.65
AF-11	1/27/2003	21.89	1.0 - 11.0		3.25	0	18.64
AF-12	1/27/2003	22.86	2.5 - 12.5	3.83	5.73	1.9	18.42[a]
AF-13	1/27/2003	22.79	2.5 - 12.5		2.78	0	20.01
AF-14	1/27/2003	23.04	1.4 - 11.4		2.68	0	20.36
AF-15	1/27/2003	23.28	1.5 - 11.5		3.76	0	19.52
AF-16	1/27/2003	22.17	1.6 - 11.6		3.08	0	19.09
AF-17	1/27/2003	18.93	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-18	1/27/2003	20.13	1.3 - 11.3		3.15	0	16.98
AF-19	1/27/2003	19.68	1.4 - 11.4		2.77	0	16.91
AF-20	1/27/2003	22.84	3.0 - 13.0		3.96	0	18.88
AF-23	1/27/2003	23.25	3.0 - 13.0		4.11	0	19.14
AF-24	1/27/2003	22.85	2.0 - 12.0		2.15	0	20.70
AF-25	1/27/2003	15.03	0.1 - 10.1		0.10	0	14.93
AF-26	1/27/2003	17.65	2.0 - 12.0		0.60	0	17.05
AF-27	1/27/2003	16.50	1.0 - 11.0		0	0	16.50
AF-28	1/27/2003	17.11	2.0 - 12.0	broken casing	broken casing	broken casing	broken casing
AF-29	1/27/2003	19.06	2.0 - 12.0		2.04	0	17.02
AF-33	1/27/2003	18.07	2.3 - 11.8		0.34	0	17.73
AF-34	1/27/2003	17.85	1.4 - 10.9		0.64	0	17.21
AF-35	1/27/2003	17.63	1.2 - 10.7		0.12	0	17.51
AF-36	1/27/2003	17.52	1.4 - 10.9		0.61	0	16.91
AF-37	1/27/2003	20.06	4.4 - 14.3		3.16	0	16.90
AF-39	1/27/2003	22.12	4.1 - 14.0		4.22	0	17.90
AF-40	1/27/2003	22.78	4.4 - 14.4		3.78	0	19
AF-41	1/27/2003	22.33	28.5 - 33.0		3.65	0	18.68
AF-42	1/27/2003	19.03	28.5 - 33.0	flowing	flowing	flowing	flowing
AF-53	1/27/2003	22.93	28.5 - 33.0		3.10	0	19.83
AF-54	1/27/2003	22.43	20.0 - 30.0		2.84	0	19.59
AF-55	1/27/2003	22.76	32.4 - 42.4		3.07	0	19.69
AF-56	1/27/2003	22.99	24.0 - 34.0		3.04	0	19.95
AF-57	1/27/2003	22.21	19.9 - 29.9		2.40	0	19.81
AF-58	1/27/2003	22.32	57.8 - 62.8		5.53	0	16.79
AF-59	1/27/2003	22.33	2.7 - 12.7		3.53	0	18.8
AF-60	1/27/2003	23.77	2.3 - 12.3		2.42	0	21.35
AF-61	1/27/2003	23.47	20.0 - 30.0		2.92	0	20.55
AF-62	1/27/2003	22.11	20.0 - 30.0		2.98	0	19.13

NOTES:

[a] = The water level was corrected for free product, assumed to be gasoline, with a density of 680 kg/m³.

AMSL = above mean sea level.

BGS = below ground surface.

BTOC = below top of casing.

Table 1g. Groundwater Elevations

Well Number	Date	Top Casing Elevation (ft AMSL)	Screened Interval (ft BGS)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Groundwater Elevation (ft AMSL)
Seventh Semiannual Monitoring Event – June 2003							
AF-01	6/24/2003	23.02	2.5 – 12.5		2.97	0	20.05
AF-02	6/24/2003	21.94	2.0 – 12.0		3.11	0	18.83
AF-03	6/24/2003	22.27	2.0 – 12.0		3.57	0	18.70
AF-04	6/24/2003	22.24	2.0 – 12.0		2.38	0	19.86
AF-05	6/24/2003	22.21	2.0 – 12.0		2.81	0	19.40
AF-07	6/24/2003	22.90	2.5 – 12.5	3.38	3.75	0.37	19.40[a]
AF-08	6/24/2003	23.10	2.5 – 12.5		2.66	0	20.44
AF-09	6/24/2003	22.93	2.0 – 12.0		2.60	0	20.33
AF-11	6/24/2003	21.89	1.0 – 11.0		2.27	0	19.62
AF-12	6/24/2003	22.86	2.5 – 12.5	3.13	6.60	6.6	18.62[a]
AF-13	6/24/2003	22.79	2.5 – 12.5		2.02	0	20.77
AF-14	6/24/2003	23.04	1.4 – 11.4		1.87	0	21.17
AF-15	6/24/2003	23.28	1.5 – 11.5		2.97	0	20.31
AF-16	6/24/2003	22.17	1.6 – 11.6		2.20	0	19.97
AF-17	6/24/2003	18.93	2.0 – 12.0	Destroyed	destroyed	Destroyed	destroyed
AF-18	6/24/2003	20.13	1.3 – 11.3		2.84	0	17.29
AF-19	6/24/2003	19.68	1.4 – 11.4		2.59	0	17.09
AF-20	6/24/2003	22.84	3.0 – 13.0		2.95	0	19.89
AF-23	6/24/2003	23.25	3.0 – 13.0		3.29	0	19.96
AF-24	6/24/2003	22.85	2.0 – 12.0		1.42	0	21.43
AF-25	6/24/2003	15.03	0.1 – 10.1	not measured	Not measured	not measured	not measured
AF-26	6/24/2003	17.65	2.0 – 12.0		1.20	0	16.45
AF-27	6/24/2003	16.50	1.0 – 11.0		0.05	0	16.45
AF-28	6/24/2003	17.11	2.0 – 12.0	Damaged	damaged	Damaged	damaged
AF-29	6/24/2003	19.06	2.0 – 12.0		3.04	0	16.02
AF-33	6/24/2003	18.07	2.3 – 11.8		0.59	0	17.48
AF-34	6/24/2003	17.85	1.4 – 10.9		2.29	0	15.56
AF-35	6/24/2003	17.63	1.2 – 10.7		1.14	0	16.49
AF-36	6/24/2003	17.52	1.4 – 10.9		1.44	0	16.08
AF-37	6/24/2003	20.06	4.4 – 14.3	Damaged	damaged	Damaged	damaged
AF-39	6/24/2003	22.12	4.1 – 14.0		3.73	0	18.39
AF-40	6/24/2003	22.78	4.4 – 14.4		3.75	0	19.03
AF-41	6/24/2003	22.33	28.5 – 33.0		3.77	0	18.56
AF-42	6/24/2003	19.03	28.5 – 33.0	Flowing	flowing	Flowing	flowing
AF-53	6/24/2003	22.93	28.5 – 33.0		2.64	0	20.29
AF-54	6/24/2003	22.43	20.0 – 30.0		2.54	0	19.89
AF-55	6/24/2003	22.76	32.4 – 42.4		2.85	0	19.91
AF-56	6/24/2003	22.99	24.0 – 34.0		2.56	0	20.43
AF-57	6/24/2003	22.21	19.9 – 29.9		2.23	0	19.98
AF-58	6/24/2003	22.32	57.8 – 62.8		6.91	0	15.41
AF-59	6/24/2003	22.33	2.7 – 12.7		2.75	0	19.58
AF-60	6/24/2003	23.77	2.3 – 12.3		1.82	0	21.95
AF-61	6/24/2003	23.47	20.0 – 30.0		2.34	0	21.13
AF-62	6/24/2003	22.11	20.0 – 30.0		2.12	0	19.99

NOTES:

[a] = The water level was corrected for free product, assumed to be gasoline, with a density of 680 kg/m³.

AMSL = above mean sea level.

BGS = below ground surface.

BTOC = below top of casing.

Table 1h. Groundwater Elevations

Well Number	Date	Top Casing Elevation (ft AMSL)	Screened Interval (ft BGS)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Groundwater Elevation (ft AMSL)
Eighth Semiannual Monitoring Event – January 2004							
AF-01	1/23/2004	23.02	2.5 - 12.5		5.08	0	17.94
AF-02	1/23/2004	21.94	2.0 - 12.0		4.72	0	17.22
AF-03	1/23/2004	22.27	2.0 - 12.0		4.96	0	17.31
AF-04	1/23/2004	22.24	2.0 - 12.0		3.47	0	18.77
AF-05	1/23/2004	22.21	2.0 - 12.0		4.83	0	17.38
AF-07	1/23/2004	22.90	2.5 - 12.5	5.08	5.19	0.11	17.78[a]
AF-08	1/23/2004	23.10	2.5 - 12.5		4.30	0	18.80
AF-09	1/23/2004	22.93	2.0 - 12.0		4.36	0	18.57
AF-11	1/23/2004	21.89	1.0 - 11.0		3.24	0	18.65
AF-12	1/23/2004	22.86	2.5 - 12.5	4.98	7.83	2.85	16.97[a]
AF-13	1/23/2004	22.79	2.5 - 12.5		3.75	0	19.04
AF-14	1/23/2004	23.04	1.4 - 11.4		3.55	0	19.49
AF-15	1/23/2004	23.28	1.5 - 11.5		4.82	0	18.46
AF-17	1/23/2004	18.93	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-18	1/23/2004	20.13	1.3 - 11.3		3.32	0	16.81
AF-20	1/23/2004	22.84	3.0 - 13.0		4.99	0	17.85
AF-23	1/23/2004	23.25	3.0 - 13.0		5.02	0	18.23
AF-24	1/23/2004	22.85	2.0 - 12.0		2.98	0	19.87
AF-26	1/23/2004	17.65	2.0 - 12.0		2.39	0	15.26
AF-28	1/23/2004	17.11	2.0 - 12.0	damaged	damaged	damaged	damaged
AF-29	1/23/2004	19.06	2.0 - 12.0		3.73	0	15.33
AF-33	1/23/2004	18.07	2.3 - 11.8		1.97	0	16.10
AF-34	1/23/2004	17.85	1.4 - 10.9		4.35	0	13.50
AF-35	1/23/2004	17.63	1.2 - 10.7		2.61	0	15.02
AF-36	1/23/2004	17.52	1.4 - 10.9		2.62	0	14.90
AF-37	1/23/2004	20.06	4.4 - 14.4	damaged	damaged	damaged	damaged
AF-39	1/23/2004	22.12	4.4 - 14.3		4.89	0	17.23
AF-40	1/23/2004	22.78	28.5 - 33.0		5.18	0	17.60
AF-41	1/23/2004	22.33	28.5 - 33.0		5.22	0	17.11
AF-42	1/23/2004	19.03	28.5 - 33.0		0.97	0	18.06
AF-53	1/23/2004	22.93	20.0 - 30.0		4.37	0	18.56
AF-54	1/23/2004	22.43	32.4 - 42.4		4.31	0	18.12
AF-55	1/23/2004	22.76	24.0 - 34.0		4.22	0	18.54
AF-57	1/23/2004	22.21	57.8 - 62.8		3.86	0	18.35
AF-58	1/23/2004	22.32	2.7 - 12.7		7.76	0	14.56
AF-59	1/23/2004	22.33	2.3 - 12.3		4.68	0	17.65
AF-60	1/23/2004	23.77	20.0 - 30.0		3.31	0	20.46
AF-61	1/23/2004	23.47	20.0 - 30.0		4.04	0	19.43
AF-62	1/23/2004	22.11	3.0 - 13.0		4.13	0	17.98

NOTES:

[a] = The water level was corrected for free product, assumed to be gasoline, with a density of 680 kg/m^3.

AMSL = above mean sea level.

BGS = below ground surface.

BTOC = below top of casing.

Table 1i. Groundwater Elevations

Well Number	Date	Top Casing Elevation (ft AMSL)	Screened Interval (ft BGS)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness	Groundwater Elevation (ft AMSL)
Ninth Semiannual Monitoring Event – July 2004							
AF-01	7/22/2004	23.02	2.5 - 12.5		3.66	0	19.36
AF-02	7/22/2004	21.94	2.0 - 12.0		3.84	0	18.10
AF-03	7/22/2004	22.27	2.0 - 12.0		3.90	0	18.37
AF-04	7/22/2004	22.24	2.0 - 12.0		2.08	0	20.16
AF-05	7/22/2004	22.21	2.0 - 12.0		3.76	0	18.45
AF-07	7/22/2004	22.90	2.5 - 12.5		4.09	0	18.81
AF-08	7/22/2004	23.10	2.5 - 12.5		3.30	0	19.80
AF-09	7/22/2004	22.93	2.0 - 12.0		3.33	0	19.60
AF-11	7/22/2004	21.89	1.0 - 11.0		2.01	0	19.88
AF-12	7/22/2004	22.86	2.5 - 12.5	4.23	4.60	0.37	18.51[a]
AF-13	7/22/2004	22.79	2.5 - 12.5		2.71	0	20.08
AF-14	7/22/2004	23.04	1.4 - 11.4		2.48	0	20.56
AF-15	7/22/2004	23.28	1.5 - 11.5		2.58	0	19.70
AF-17	7/22/2004	18.93	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-18	7/22/2004	20.13	1.3 - 11.3		3.38	0	16.75
AF-20	7/22/2004	22.84	3.0 - 13.0		3.86	0	18.98
AF-23	7/22/2004	23.25	3.0 - 13.0		4	0	19.25
AF-24	7/22/2004	22.85	2.0 - 12.0		2.14	0	20.71
AF-26	7/22/2004	17.65	2.0 - 12.0		1.78	0	15.87
AF-28	7/22/2004	17.11	2.0 - 12.0	damaged	damaged	damaged	damaged
AF-29	7/22/2004	19.06	2.0 - 12.0		3.29	0	15.77
AF-33	7/22/2004	18.07	2.3 - 11.8		1.69	0	16.38
AF-34	7/22/2004	17.85	1.4 - 10.9		3.76	0	14.09
AF-35	7/22/2004	17.63	1.2 - 10.7		2.24	0	15.39
AF-36	7/22/2004	17.52	1.4 - 10.9		1.99	0	15.53
AF-37	7/22/2004	20.06	4.4 - 14.4	damaged	damaged	damaged	damaged
AF-39	7/22/2004	22.12	4.4 - 14.3		3.96	0	18.16
AF-40	7/22/2004	22.78	28.5 - 33.0		4.51	0	18.27
AF-41	7/22/2004	22.33	28.5 - 33.0		4.43	0	17.90
AF-42	7/22/2004	19.03	28.5 - 33.0	flowing	flowing	flowing	flowing
AF-53	7/22/2004	22.93	20.0 - 30.0		3.35	0	19.58
AF-54	7/22/2004	22.43	32.4 - 42.4		3.24	0	19.19
AF-55	7/22/2004	22.76	24.0 - 34.0		3.43	0	19.33
AF-57	7/22/2004	22.21	57.8 - 62.8		2.75	0	19.46
AF-58	7/22/2004	22.32	2.7 - 12.7		7.07	0	15.25
AF-59	7/22/2004	22.33	2.3 - 12.3		3.29	0	19.04
AF-60	7/22/2004	23.77	20.0 - 30.0		2.43	0	21.34
AF-61	7/22/2004	23.47	20.0 - 30.0		3.05	0	20.42
AF-62	7/22/2004	22.11	3.0 - 13.0	not accessible	not accessible	not accessible	not accessible

NOTES:
[a] = The water level was corrected for free product, assumed to be gasoline, with a density of 680 kg/m³.
AMSL = above mean sea level.
BGS = below ground surface
BTOC = below top of casing.

Table 1j. Groundwater Elevations

Well Number	Date	Top Casing Elevation (ft AMSL)	Screened Interval (ft BGS)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Groundwater Elevation (ft AMSL)
Tenth Semiannual Monitoring Event – January 2005							
AF-01	1/17/2005	23.02	2.5 - 12.5	not measured	not measured	not measured	not measured
AF-02	1/17/2005	21.94	2.0 - 12.0		3.51	0	18.43
AF-03	1/17/2005	22.27	2.0 - 12.0		4.15	0	18.12
AF-04	1/17/2005	22.24	2.0 - 12.0		2.36	0	19.88
AF-05	1/17/2005	22.21	2.0 - 12.0		3.90	0	18.31
AF-07	1/17/2005	22.90	2.5 - 12.5		4.19	0	18.71
AF-08	1/17/2005	23.10	2.5 - 12.5		3.45	0	19.65
AF-09	1/17/2005	22.93	2.0 - 12.0		3.50	0	19.43
AF-11	1/17/2005	21.89	1.0 - 11.0		2.23	0	19.66
AF-12	1/17/2005	22.86	2.5 - 12.5	4.22	5.01	0.79	18.39[a]
AF-13	1/17/2005	22.79	2.5 - 12.5		2.95	0	19.84
AF-14	1/17/2005	23.04	1.4 - 11.4		2.85	0	20.19
AF-15	1/17/2005	23.28	1.5 - 11.5		3.81	0	19.47
AF-17	1/17/2005	18.93	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-18	1/17/2005	20.13	1.3 - 11.3		2.81	0	17.32
AF-20	1/17/2005	22.84	3.0 - 13.0	not accessible	not accessible	not accessible	not accessible
AF-23	1/17/2005	23.25	3.0 - 13.0		4.20	0	19.05
AF-24	1/17/2005	22.85	2.0 - 12.0		2.36	0	20.49
AF-26	1/17/2005	17.65	2.0 - 12.0		1	0	16.65
AF-28	1/17/2005	17.11	2.0 - 12.0		0.78	0	16.33
AF-29	1/17/2005	19.06	2.0 - 12.0		3	0	16.06
AF-33	1/17/2005	18.07	2.3 - 11.8		0.77	0	17.30
AF-34	1/17/2005	17.85	1.4 - 10.9		0.80	0	17.05
AF-35	1/17/2005	17.63	1.2 - 10.7		0.85	0	16.78
AF-36	1/17/2005	17.52	1.4 - 10.9		1.35	0	16.17
AF-37	1/17/2005	20.06	4.4 - 14.4	damaged	damaged	damaged	damaged
AF-39	1/17/2005	22.12	4.4 - 14.3		4.30	0	17.82
AF-40	1/17/2005	22.78	28.5 - 33.0		4.22	0	18.56
AF-41	1/17/2005	22.33	28.5 - 33.0		3.87	0	18.46
AF-42	1/17/2005	19.03	28.5 - 33.0	flowing	flowing	flowing	flowing
AF-53	1/17/2005	22.93	20.0 - 30.0		3.38	0	19.55
AF-54	1/17/2005	22.43	32.4 - 42.4		3.20	0	19.23
AF-55	1/17/2005	22.76	24.0 - 34.0		3.35	0	19.41
AF-57	1/17/2005	22.21	57.8 - 62.8		3.30	0	19.69
AF-58	1/17/2005	22.32	2.7 - 12.7		2.65	0	19.56
AF-59	1/17/2005	22.33	2.3 - 12.3		6.24	0	16.08
AF-60	1/17/2005	23.77	20.0 - 30.0		3.59	0	18.74
AF-61	1/17/2005	23.47	20.0 - 30.0		2.59	0	21.18
AF-62	1/17/2005	22.11	3.0 - 13.0		3.15	0	20.32

NOTES:
[a] = The water level was corrected for free product, assumed to be gasoline, with a density of 680 kg/m³.
AMSL = above mean sea level.
BGS = below ground surface.
BTOC = below top of casing.

Table 1k. Groundwater Elevations

Well Number	Date	Top Casing Elevation (ft AMSL)	Screened Interval (ft BGS)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness	Groundwater Elevation (ft AMSL)
Eleventh Semiannual Monitoring Event – July 2005							
AF-01	7/17/2005	23.02	2.5 - 12.5		2.70	0	20.32
AF-02	7/17/2005	21.94	2.0 - 12.0		2.81	0	19.13
AF-03	7/17/2005	22.27	2.0 - 12.0		3.11	0	19.16
AF-04	7/17/2005	22.24	2.0 - 12.0		2.41	0	19.83
AF-05	7/17/2005	22.21	2.0 - 12.0		2.48	0	19.73
AF-07	7/17/2005	22.90	2.5 - 12.5	3.02	3.08	0.06	19.86[a]
AF-08	7/17/2005	23.10	2.5 - 12.5		2.37	0	20.73
AF-09	7/17/2005	22.93	2.0 - 12.0		2.22	0	20.71
AF-11	7/17/2005	21.89	1.0 - 11.0		2.02	0	19.87
AF-12	7/17/2005	22.86	2.5 - 12.5	2.85	5.25	2.4	19.24[a]
AF-13	7/17/2005	22.79	2.5 - 12.5	not measured	not measured	not measured	not measured
AF-14	7/17/2005	23.04	1.4 - 11.4		1.62	0	21.42
AF-15	7/17/2005	23.28	1.5 - 11.5		2.63	0	20.65
AF-16	7/17/2005	22.17	1.6 - 11.6		1.95	0	20.22
AF-17	7/17/2005	18.93	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-18	7/17/2005	20.13	1.3 - 11.3		2.42	0	17.71
AF-19	7/17/2005	19.68	1.4 - 11.4		2.05	0	17.63
AF-20	7/17/2005	22.84	3.0 - 13.0		2.66	0	20.18
AF-23	7/17/2005	23.25	3.0 - 13.0		3.01	0	20.24
AF-24	7/17/2005	22.85	2.0 - 12.0		1.20	0	21.65
AF-25	7/17/2005	15.03	0.1 - 10.1		0.52	0	14.51
AF-26	7/17/2005	17.65	2.0 - 12.0		0.52	0	17.13
AF-28	7/17/2005	17.11	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-29	7/17/2005	19.06	2.0 - 12.0		2.95	0	16.11
AF-33	7/17/2005	18.07	2.3 - 11.8		0.55	0	17.52
AF-34	7/17/2005	17.85	1.4 - 10.9		1.51	0	16.34
AF-35	7/17/2005	17.63	1.2 - 10.7		0.65	0	16.98
AF-36	7/17/2005	17.52	1.4 - 10.9		1.31	0	16.21
AF-37	7/17/2005	20.06	4.4 - 14.4	damaged	damaged	damaged	damaged
AF-39	7/17/2005	22.12	4.4 - 14.3		3.20	0	18.92
AF-40	7/17/2005	22.78	28.5 - 33.0		3.42	0	19.36
AF-41	7/17/2005	22.33	28.5 - 33.0	not accessible	not accessible	not accessible	not accessible
AF-42	7/17/2005	19.03	28.5 - 33.0	flowing	flowing	flowing	flowing
AF-53	7/17/2005	22.93	20.0 - 30.0		2.35	0	20.58
AF-54	7/17/2005	22.43	32.4 - 42.4		2.42	0	20.01
AF-55	7/17/2005	22.76	24.0 - 34.0		2.91	0	19.85
AF-56	7/17/2005	22.99	19.9 - 29.9		2.27	0	20.72
AF-57	7/17/2005	22.21	57.8 - 62.8		1.85	0	20.36
AF-58	7/17/2005	22.32	2.7 - 12.7		5.95	0	16.37
AF-59	7/17/2005	22.33	2.3 - 12.3		2.55	0	19.78
AF-60	7/17/2005	23.77	20.0 - 30.0		1.56	0	22.21
AF-61	7/17/2005	23.47	20.0 - 30.0		2.05	0	21.42
AF-62	7/17/2005	22.11	3.0 - 13.0	not accessible	Not accessible	not accessible	not accessible

NOTES:
[a] = The water level was corrected for free product, assumed to be gasoline, with a density of 680 kg/m³.
AMSL = above mean sea level.
BGS = below ground surface.
BTOC = below top of casing.

Table 1l. Groundwater Elevations

Well Number	Date	Top Casing Elevation (ft AMSL)	Screened Interval (ft BGS)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Groundwater Elevation (ft AMSL)
Twelfth Semiannual Monitoring Event – January 2006							
AF-01	1/11/2006	23.02	2.5 - 12.5		3.39	0	19.63
AF-02	1/11/2006	21.94	2.0 - 12.0		3.25	0	18.69
AF-03	1/11/2006	22.27	2.0 - 12.0		3.58	0	18.69
AF-04	1/11/2006	22.24	2.0 - 12.0		2.37	0	19.87
AF-05	1/11/2006	22.21	2.0 - 12.0		3.09	0	19.12
AF-07	1/11/2006	22.90	2.5 - 12.5		3.47	0	19.43
AF-08	1/11/2006	23.10	2.5 - 12.5		2.95	0	20.15
AF-09	1/11/2006	22.93	2.0 - 12.0		2.84	0	20.09
AF-11	1/11/2006	21.89	1.0 - 11.0		2.30	0	19.59
AF-12	1/11/2006	22.86	2.5 - 12.5	3.51	4.35	0.84	19.08[a]
AF-13	1/11/2006	22.79	2.5 - 12.5		2.30	0	20.49
AF-14	1/11/2006	23.04	1.4 - 11.4		2.20	0	20.84
AF-15	1/11/2006	23.28	1.5 - 11.5		2.32	0	20.96
AF-16	1/11/2006	22.17	1.6 - 11.6		2.70	0	19.47
AF-17	1/11/2006	18.93	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-18	1/11/2006	20.13	1.3 - 11.3		2.96	0	17.17
AF-19	1/11/2006	19.68	1.4 - 11.4		2.39	0	17.29
AF-20	1/11/2006	22.84	3.0 - 13.0		3.49	0	19.35
AF-23	1/11/2006	23.25	3.0 - 13.0		3.64	0	19.61
AF-24	1/11/2006	22.85	2.0 - 12.0		1.74	0	21.11
AF-25	1/11/2006	15.03	0.1 - 10.1		0.57	0	14.46
AF-26	1/11/2006	17.65	2.0 - 12.0		0.37	0	17.28
AF-28	1/11/2006	17.11	2.0 - 12.0		0.42	0	16.69
AF-29	1/11/2006	19.06	2.0 - 12.0	damaged	damaged	damaged	damaged
AF-33	1/11/2006	18.07	2.3 - 11.8		0.22	0	17.85
AF-34	1/11/2006	17.85	1.4 - 10.9		0.43	0	17.42
AF-35	1/11/2006	17.63	1.2 - 10.7		0.10	0	17.53
AF-36	1/11/2006	17.52	1.4 - 10.9		0.58	0	16.94
AF-37	1/11/2006	20.06	4.4 - 14.4	damaged	damaged	damaged	Damaged
AF-39	1/11/2006	22.12	4.4 - 14.3		3.82	0	18.30
AF-40	1/11/2006	22.78	28.5 - 33.0		3.63	0	19.15
AF-41	1/11/2006	22.33	28.5 - 33.0		3.54	0	18.79
AF-42	1/11/2006	19.03	28.5 - 33.0	flowing	flowing	flowing	Flowing
AF-53	1/11/2006	22.93	20.0 - 30.0		2.73	0	20.20
AF-54	1/11/2006	22.43	32.4 - 42.4		2.60	0	19.83
AF-55	1/11/2006	22.76	24.0 - 34.0		2.78	0	19.98
AF-56	1/11/2006	22.99	19.9 - 29.9		2.65	0	20.34
AF-57	1/11/2006	22.21	57.8 - 62.8		2.12	0	20.09
AF-58	1/11/2006	22.32	2.7 - 12.7		5.55	0	16.77
AF-59	1/11/2006	22.33	2.3 - 12.3		3.08	0	19.25
AF-60	1/11/2006	23.77	20.0 - 30.0		1.99	0	21.78
AF-61	1/11/2006	23.47	20.0 - 30.0		2.49	0	20.98
AF-62	1/11/2006	22.11	3.0 - 13.0		2.59	0	19.52

NOTES:
[a] = The water level was corrected for free product, assumed to be gasoline, with a density of 680 kg/m³.
AMSL = above mean sea level.
BGS = below ground surface.
BTOC = below top of casing.

Table 1m. Groundwater Elevations

Well Number	Date	Top Casing Elevation (ft AMSL)	Screened Interval (ft BGS)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Groundwater Elevation (ft AMSL)
Thirteenth Semiannual Monitoring Event – July 2006							
AF-01	7/19/2006	23.02	2.5 - 12.5		4.92	0	18.10
AF-02	7/19/2006	21.94	2.0 - 12.0		4.58	0	17.36
AF-03	7/19/2006	22.27	2.0 - 12.0		4.75	0	17.52
AF-04	7/19/2006	22.24	2.0 - 12.0		3.01	0	19.23
AF-05	7/19/2006	22.21	2.0 - 12.0		2.36	0	19.85
AF-07	7/19/2006	22.90	2.5 - 12.5	4.89	4.92	0.03	[a]
AF-08	7/19/2006	23.10	2.5 - 12.5		3.79	0	19.31
AF-09	7/19/2006	22.93	2.0 - 12.0		NR	0	
AF-11	7/19/2006	21.89	1.0 - 11.0		2.99	0	18.90
AF-12R	7/19/2006	22.86	2.5 - 12.5		8.35	0	14.21
AF-13	7/19/2006	22.79	2.5 - 12.5		2.99	0	19.80
AF-14	7/19/2006	23.04	1.4 - 11.4		2.91	0	20.13
AF-15	7/19/2006	23.28	1.5 - 11.5		3.95	0	19.33
AF-16	7/19/2006	22.17	1.6 - 11.6	not measured	not measured	not measured	not measured
AF-17	7/19/2006	18.93	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-18	7/19/2006	20.13	1.3 - 11.3		3.88	0	16.25
AF-19	7/19/2006	19.68	1.4 - 11.4		1.19	0	18.49
AF-20	7/19/2006	22.84	3.0 - 13.0		4.54	0	18.30
AF-23	7/19/2006	23.25	3.0 - 13.0		4.44	0	18.81
AF-24	7/19/2006	22.85	2.0 - 12.0		2.57	0	20.28
AF-25	7/19/2006	15.03	0.1 - 10.1	not measured	not measured	not measured	not measured
AF-26	7/19/2006	17.65	2.0 - 12.0		3.32	0	14.33
AF-28	7/19/2006	17.11	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-29	7/19/2006	19.06	2.0 - 12.0		4.50		14.56
AF-33	7/19/2006	18.07	2.3 - 11.8		2.60	0	15.47
AF-34	7/19/2006	17.85	1.4 - 10.9		6.02	0	11.83
AF-35	7/19/2006	17.63	1.2 - 10.7		4.18	0	13.45
AF-36	7/19/2006	17.52	1.4 - 10.9		3.45	0	14.07
AF-37	7/19/2006	20.06	4.4 - 14.4	damaged	damaged	damaged	damaged
AF-39	7/19/2006	22.12	4.4 - 14.3		4.53	0	17.59
AF-40	7/19/2006	22.78	28.5 - 33.0		5.34	0	17.44
AF-41	7/19/2006	22.33	28.5 - 33.0	not accessible	not accessible	not accessible	not accessible
AF-42	7/19/2006	19.03	28.5 - 33.0		0.90	0	18.13
AF-53	7/19/2006	22.93	20.0 - 30.0	not measured	not measured	not measured	not measured
AF-54	7/19/2006	22.43	32.4 - 42.4		4.11	0	18.32
AF-55	7/19/2006	22.76	24.0 - 34.0		4.23	0	18.53
AF-56	7/19/2006	22.99	19.9 - 29.9	not measured	not measured	not measured	not measured
AF-57	7/19/2006	22.21	57.8 - 62.8		3.72	0	18.49
AF-58	7/19/2006	22.32	2.7 - 12.7		8.71	0	13.61
AF-59	7/19/2006	22.33	2.3 - 12.3		4.14	0	18.19
AF-60	7/19/2006	23.77	20.0 - 30.0		2.70	0	21.07
AF-61	7/19/2006	23.47	20.0 - 30.0		3.73	0	19.74
AF-62	7/19/2006	22.11	3.0 - 13.0	not measured	not measured	not measured	not measured

NOTES:

a = Top of casing elevation may have changed during 2006 excavation activities
AMSL = above mean sea level.
BGS = below ground surface.
BTOC = below top of casing

Table 1n. Groundwater Elevations

Well Number	Date	Top Casing Elevation (ft AMSL)	Screened Interval (ft BGS)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Groundwater Elevation (ft AMSL)
Fourteenth Semiannual Monitoring Event – January 2007							
AF-01	1/23/07	23.02	2.5 - 12.5		4.24	0	18.78
AF-02	1/23/07	21.94	2.0 - 12.0		3.77	0	18.17
AF-03	1/23/07	22.27	2.0 - 12.0		4.15	0	18.12
AF-04	1/23/07	22.24	2.0 - 12.0		2.25	0	19.99
AF-05	1/23/07	22.21	2.0 - 12.0		3.97	0	18.24
AF-07	1/23/07	22.90	2.5 - 12.5		4.39	0	18.51[a]
AF-08	1/23/07	23.10	2.5 - 12.5		3.7	0	19.40
AF-09	1/23/07	22.93	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-11	1/23/07	21.89	1.0 - 11.0		2.27	0	19.62
AF-12R	1/23/07	22.86	2.5 - 12.5		4.23	0	18.33
AF-13	1/23/07	22.79	2.5 - 12.5		3.20	0	19.59
AF-14	1/23/07	23.04	1.4 - 11.4		3.04	0	20.00
AF-15	1/23/07	23.28	1.5 - 11.5		4.16	0	19.12
AF-16	1/23/07	22.17	1.6 - 11.6	not measured	not measured	not measured	not measured
AF-17	1/23/07	18.93	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-18	1/23/07	20.13	1.3 - 11.3		3.13	0	17.00
AF-19	1/23/07	19.68	1.4 - 11.4	damaged	damaged	damaged	damaged
AF-20	1/23/07	22.84	3.0 - 13.0		4.34	0	18.50
AF-23	1/23/07	23.25	3.0 - 13.0		4.43	0	18.82
AF-24	1/23/07	22.85	2.0 - 12.0		2.71	0	20.14
AF-25	1/23/07	15.03	0.1 - 10.1		0.49	0	14.54
AF-26	1/23/07	17.65	2.0 - 12.0		1.71	0	15.94
AF-28	1/23/07	17.11	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-29	1/23/07	19.06	2.0 - 12.0		3.36	0	15.70
AF-33	1/23/07	18.07	2.3 - 11.8		1.38	0	16.69
AF-34	1/23/07	17.85	1.4 - 10.9		3.56	0	14.29
AF-35	1/23/07	17.63	1.2 - 10.7		1.51	0	16.12
AF-36	1/23/07	17.52	1.4 - 10.9		1.91	0	15.61
AF-37	1/23/07	20.06	4.4 - 14.4	damaged	damaged	damaged	damaged
AF-39	1/23/07	22.12	4.4 - 14.3		4.31	0	17.81
AF-40	1/23/07	22.78	28.5 - 33.0		4.64	0	18.14
AF-41	1/23/07	22.33	28.5 - 33.0		4.61	0	17.72
AF-42	1/23/07	19.03	28.5 - 33.0		0.27	0	18.76
AF-53	1/23/07	22.93	20.0 - 30.0		3.77	0	19.16
AF-54	1/23/07	22.43	32.4 - 42.4		3.62	0	18.81
AF-55	1/23/07	22.76	24.0 - 34.0		3.7	0	19.06
AF-56	1/23/07	22.99	19.9 - 29.9		3.69	0	19.30
AF-57	1/23/07	22.21	57.8 - 62.8		3.2	0	19.01
AF-58	1/23/07	22.32	2.7 - 12.7		7.1	0	15.22
AF-59	1/23/07	22.33	2.3 - 12.3		3.65	0	18.68
AF-60	1/23/07	23.77	20.0 - 30.0		2.88	0	20.89
AF-61	1/23/07	23.47	20.0 - 30.0		3.5	0	19.97
AF-62	1/23/07	22.11	3.0 - 13.0	not measured	not measured	not measured	not measured

NOTES:
[a] = Top of casing elevation may have changed during 2006 excavation activities
AMSL = above mean sea level.
BGS = below ground surface.
BTOC = below top of casing

Table 1n. Groundwater Elevations

Well Number	Date	Top Casing Elevation (ft AMSL)	Screened Interval (ft BGS)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Groundwater Elevation (ft AMSL)
Fifteenth Semiannual Monitoring Event –October 2007							
AF-01	10/8/2007	23.02	2.5 - 12.5		2.96	0	20.06
AF-02	10/8/2007	21.94	2.0 - 12.0		2.81	0	19.13
AF-03	10/8/2007	22.27	2.0 - 12.0		3.21	0	19.06
AF-04	10/8/2007	22.24	2.0 - 12.0		1.84	0	20.40
AF-05	10/8/2007	22.21	2.0 - 12.0		1.88	0	20.33
AF-07R	10/8/2007	22.90	2.5 - 12.5		3	0	19.90
AF-08	10/8/2007	23.10	2.5 - 12.5		2.70	0	20.40
AF-09	10/8/2007	22.93	2.0 - 12.0	not measured	not measured	not measured	not measured
AF-11	10/8/2007	21.89	1.0 - 11.0		1.74	0	20.15
AF-12R	10/8/2007	22.86	2.5 - 12.5		2.44	0	20.42
AF-13	10/8/2007	22.79	2.5 - 12.5		2.13	0	20.84
AF-14	10/8/2007	23.04	1.4 - 11.4		2.15	0	20.89
AF-15	10/8/2007	23.28	1.5 - 11.5		2.99	0	20.29
AF-16	10/8/2007	22.17	1.6 - 11.6	not measured	not measured	not measured	not measured
AF-17	10/8/2007	18.93	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-18	10/8/2007	20.13	1.3 - 11.3		2.53	0	17.60
AF-19	10/8/2007	19.68	1.4 - 11.4		0.02	0	19.66
AF-20	10/8/2007	22.84	3.0 - 13.0		2.96	0	19.88
AF-23	10/8/2007	23.25	3.0 - 13.0		3.40	0	19.85
AF-24	10/8/2007	22.85	2.0 - 12.0		2.07	0	20.78
AF-25	10/8/2007	15.03	0.1 - 10.1	not measured	not measured	not measured	not measured
AF-26	10/8/2007	17.65	2.0 - 12.0	not measured	not measured	not measured	not measured
AF-28	10/8/2007	17.11	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-29	10/9/2007	19.06	2.0 - 12.0		2.74	0	16.32
AF-34	10/9/2007	17.85	1.4 - 10.9	flowing	flowing	flowing	flowing
AF-35	10/9/2007	17.63	1.2 - 10.7		0.90	0	16.73
AF-36	10/8/2007	17.52	1.4 - 10.9	not measured	not measured	not measured	not measured
AF-37	10/8/2007	20.06	4.4 - 14.4	damaged	damaged	damaged	damaged
AF-39	10/8/2007	22.12	4.4 - 14.3	not measured	not measured	not measured	Not measured
AF-40	10/8/2007	22.78	28.5 - 33.0		5.34	0	17.44
AF-41	10/8/2007	22.33	28.5 - 33.0		3.69		18.64
AF-42	10/8/2007	19.03	28.5 - 33.0		0.90	0	18.13
AF-54	10/8/2007	22.43	32.4 - 42.4		2.90	0	18.32
AF-55	10/8/2007	22.76	24.0 - 34.0		3.18	0	18.53
AF-56	10/8/2007	22.99	19.9 - 29.9	not measured	not measured	not measured	not measured
AF-57	10/9/2007	22.21	57.8 - 62.8		2.39	0	19.82
AF-58	10/9/2007	22.32	2.7 - 12.7		5.46	0	16.86
AF-59	10/8/2007	22.33	2.3 - 12.3		2.60	0	19.73
AF-60	10/8/2007	23.77	20.0 - 30.0		2.66	0	21.11
AF-61	10/8/2007	23.47	20.0 - 30.0		3.73	0	19.74
AF-68	10/8/2007	39.65	3.0 - 13.0		4.11	0	35.54

NOTES:
AMSL = above mean sea level.
BGS = below ground surface.
BTOC = below top of casing

Table 1o. Groundwater Elevations

Well Number	Date	Top Casing Elevation (ft AMSL)	Screened Interval (ft BGS)	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (ft)	Groundwater Elevation (ft AMSL)
Sixteenth Semiannual Monitoring Event –April 2008							
AF-01	04/15/08	23.02	2.5 - 12.5		3.28	0	19.74
AF-02	04/15/08	21.94	2.0 - 12.0	not measured	not measured	not measured	not measured
AF-03	04/15/08	22.27	2.0 - 12.0		3.98	0	18.29
AF-04	04/15/08	22.24	2.0 - 12.0		2.51	0	19.73
AF-05	04/15/08	22.21	2.0 - 12.0		2.91	0	19.30
AF-07R	04/15/08	22.90	2.5 - 12.5		3.00	0	19.90
AF-08	04/15/08	23.10	2.5 - 12.5		2.70	0	20.40
AF-09	04/15/08	22.93	2.0 - 12.0	not measured	not measured	not measured	not measured
AF-11	04/15/08	21.89	1.0 - 11.0		2.70	0	19.19
AF-12R	04/15/08	22.86	2.5 - 12.5		3.20	0	19.66
AF-13	04/15/08	22.79	2.5 - 12.5		2.46	0	20.33
AF-14	04/15/08	23.04	1.4 - 11.4		2.45	0	20.59
AF-15	04/15/08	23.28	1.5 - 11.5		3.18	0	20.10
AF-16	04/15/08	22.17	1.6 - 11.6	not measured	not measured	not measured	not measured
AF-17	04/15/08	18.93	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-18	04/15/08	20.13	1.3 - 11.3		2.31	0	17.82
AF-19	04/15/08	19.68	1.4 - 11.4	not measured	not measured	not measured	not measured
AF-20	04/15/08	22.84	3.0 - 13.0		3.19	0	19.65
AF-23	04/15/08	23.25	3.0 - 13.0		3.51	0	19.74
AF-24	04/15/08	22.85	2.0 - 12.0		1.86	0	20.99
AF-25	04/15/08	15.03	0.1 - 10.1	not measured	not measured	not measured	not measured
AF-26	04/15/08	17.65	2.0 - 12.0	not measured	not measured	not measured	not measured
AF-28	04/15/08	17.11	2.0 - 12.0	destroyed	destroyed	destroyed	destroyed
AF-29	04/15/08	19.06	2.0 - 12.0		2.91	0	16.15
AF-34	04/15/08	17.85	1.4 - 10.9		0.90	0	16.95
AF-35	04/15/08	17.63	1.2 - 10.7		0.93	0	16.70
AF-36	04/15/08	17.52	1.4 - 10.9	not measured	not measured	not measured	not measured
AF-37	04/15/08	20.06	4.4 - 14.4	damaged	damaged	damaged	damaged
AF-39	04/15/08	22.12	4.4 - 14.3	not measured	not measured	not measured	Not measured
AF-40	04/15/08	22.78	28.5 - 33.0		3.34	0	19.44
AF-41	04/15/08	22.33	28.5 - 33.0		4.01	0	18.32
AF-42	04/15/08	19.03	28.5 - 33.0	not measured	not measured	not measured	not measured
AF-54	04/15/08	22.43	32.4 - 42.4		4.12	0	18.31
AF-55	04/15/08	22.76	24.0 - 34.0		3.07	0	19.69
AF-56	04/15/08	22.99	19.9 - 29.9	not measured	not measured	not measured	not measured
AF-57	04/15/08	22.21	57.8 - 62.8		2.75	0	19.46
AF-58	04/15/08	22.32	2.7 - 12.7		6.24	0	16.08
AF-59	04/15/08	22.33	2.3 - 12.3		3.35	0	18.98
AF-60	04/15/08	23.77	20.0 - 30.0		2.34	0	21.43
AF-61	04/15/08	23.47	20.0 - 30.0	not measured	not measured	not measured	not measured
AF-68	04/15/08	39.65	3.0 - 13.0		4.38	0	35.27
260-MW02	04/15/08	22.36	4.0-14.0		3.31	0	19.05
260-MW03	04/15/08	22.33	20.0-30.0		3.90	0	18.43

NOTES:
AMSL = above mean sea level.
BGS = below ground surface.
BTOC = below top of casing

Table 2a. Groundwater Analytical Results (BTEX)

Sample Location	Sample ID	Date Sampled	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX
Corrective Action Plan - Part B Investigation - May 1999							
AF-02	AF0212	5/5/1999	27.4 =	1.8 J	3.4 =	1.1 J	33.7
AF-05	AF0512	5/5/1999	8.2 =	2 U	5.2 =	5 U	13.4
AF-07	AF0712	5/4/1999	**9,940** =	200 U	952 =	792 =	11,984
AF-12	AF1212	5/4/1999	**79.3** =	20 U	92.3 =	27.4 J	199
Corrective Action Plan - Part B Investigation - September 1999							
AF-02	AF0222	9/26/1999	8.4 =	0.65 J	2 U	6 U	9.05
AF-05	AF0522	9/26/1999	11.8 =	3 =	9.5 =	46.5 =	70.8
AF-07	AF0722	9/26/1999	**9,130** =	24.8 =	493 =	246 =	9,893.80
AF-12	AF1222	9/26/1999	23.4	4 U	54.8 =	8.5 J	86.7
Additional Well Installation - February 2000							
AF-40	AF4012	2/2/2000	21.3 =	0.6 J	3.2 =	8.8 =	33.9
AF-41	AF4112	2/2/2000	0.2 J	1 U	1 U	3 U	0.21
AF-42	AF4212	2/2/2000	1 U	0.3 J	1 U	3 U	0.3
First Semiannual Monitoring Event - June 2000							
AF-02	AF0232	6/24/2000	1 U	0.37 J	1 U	3 U	0.37
AF-05	AF0532	6/24/2000	60.1 =	0.76 J	31.1 =	9 =	100.96
AF-07	AF0732	6/24/2000	**7,700** =	18.9 =	244 =	30.3 =	7,993.20
AF-12	AF1232	6/24/2000	27.8 =	1 U	63.3 =	2.4 J	93.5
AF-40	AF4032	6/23/2000	1.3 =	1 U	0.57 J	3 U	1.87
AF-41	AF4132	6/23/2000	1 U	1 U	1 U	3 U	ND
AF-42	AF4232	6/23/2000	1 U	0.81 J	1 U	3 U	0.81
IWQS			*71.28*	*200,000*	*28,718*	*NRC*	*NRC*
ACL			*340*				

NOTES:
A = Wells sampled during the Corrective Action Plan-Part B investigation that are in the Monitoring Only Program are summarized in this table.
Bold values exceed the In-Stream Water Quality Standards.
All contaminant values are in µg/L.
BTEX = Benzene, toluene, ethylbenzene, xylenes.
GA EPD = Georgia Environmental Protection Division.
ND = Not detected.
NRC = No regulatory criteria
NS = Not sampled.

Data Qualifiers
J – Indicates that the value for the compound is an estimated value.
U – Indicated that the compound was not detected at the concentration reported.
= – Indicates that the compound was detected at the concentration reported.

Table 2b. Groundwater Analytical Results (BTEX)

Sample Location	Sample ID	Date Sampled	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX
Second Semiannual Monitoring Event - January 2001							
AF-02	AF0252	1/10/2001	1 U	1 U	1 U	3 U	ND
AF-05	AF0552	1/10/2001	3.2 =	1 U	10.5 =	10.9 =	24.6
AF-07	AF0752	1/10/2001	**8,450** =	50 U	515 =	26 J	8,991
AF-12	AF1252	1/10/2001	29.8 =	10 U	73.6 =	30 U	103.4
AF-40	AF4052	1/7/2001	0.39 J	1 U	0.13 J	0.34 J	0.86
AF-41	AF4152	1/7/2001	1 U	1 U	1 U	3 U	ND
AF-42	AF4252	1/7/2001	1 U	1 U	1 U	3 U	ND
Third Semiannual Monitoring Event - June 2001							
AF-02	AF0262	6/8/2001	0.23 J	1 U	1 U	3 U	0.23
AF-05	AF0562	6/8/2001	**74.7** =	0.67 J	28.9 =	6.2 =	110.47
AF-07	AF0762	6/8/2001	**10,900** =	30.4 =	506 =	23.9 J	11,460.30
AF-12	AF1262	6/8/2001	29.1 =	1 U	63.8 =	1 J	93.9
AF-40	AF4062	6/8/2001	0.45 J	1 U	1 U	3 U	0.45
AF-41	AF4162	6/8/2001	0.15 J	1 U	1 U	3 U	0.15
AF-42	AF4262	6/8/2001	1 U	1 U	1 U	3 U	ND
Fourth Semiannual Monitoring Event - January 2002							
AF-01	AF0172	1/19/2002	0.55 J	1 U	1 U	3 U	0.55
AF-02	AF0272	1/19/2002	1 U	1 U	1 U	3 U	ND
AF-05	AF0572	1/19/2002	NS	NS	NS	NS	NS
AF-07	AF0772	1/19/2002	**6,780** =	26.3 U	427 =	11.4 J	7,244.70
AF-12	AF1272	1/19/2002	27.9 =	1 U	73.5 =	1.3 J	102.7
AF-40	AF4072	1/19/2002	1 U	1 U	1 U	3 U	ND
AF-41	AF4172	1/19/2002	1 U	1 U	1 U	3 U	ND
AF-42	AF4272	1/19/2002	1 U	1 U	1 U	3 U	ND
IWQS			*71.28*	*200,000*	*28,718*	*NRC*	*NRC*
ACL			*340*				

NOTES:
A = Wells sampled during the Corrective Action Plan-Part B investigation that are in the Monitoring Only Program are summarized in this table.
Bold values exceed the In-Stream Water Quality Standards.
All contaminant values are in µg/L.
BTEX = Benzene, toluene, ethylbenzene, xylenes.
GA EPD = Georgia Environmental Protection Division.
ND = Not detected.
NRC = No regulatory criteria
NS = Not sampled.

Data Qualifiers
J – Indicates that the value for the compound is an estimated value.
U – Indicated that the compound was not detected at the concentration reported.
= – Indicates that the compound was detected at the concentration reported.

Table 2c. Groundwater Analytical Results (BTEX)

Sample Location	Sample ID	Date Sampled	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX
Fifth Semiannual Monitoring Event - June 2002							
AF-02	AF0282	6/7/2002	1.2 J	1 U	0.28 J	3 U	1.48
AF-05	AF0582	6/7/2002	3.3 J	0.95 J	15.5 J	3.4 J	23.15
AF-07	AF0782	6/7/2002	**5,900** J	46.6 J	616 J	300 U	6,562.60
AF-12	AF1282	6/7/2002	39.2 J	1 U	83.1 J	3 U	122.3
Sixth Semiannual Monitoring Event - January 2003							
AF-02	AF0292	1/27/2003	1 U	1 U	1 U	1 U	ND
AF-05	AF0592	1/27/2003	5.5 =	1 U	2.7 =	8.9 =	17.1
AF-07	AF0792	1/27/2003	**5,930** =	28.4 U	623 =	25.4 =	6,578.40
AF-12	AF0792	1/27/2003	28.8 =	1 U	67.3 =	0.83 J	96.93
Seventh Semiannual Monitoring Event - June 2003							
AF-02	AF0202	6/24/2003	1 U	1 U	1 U	1 U	ND
AF-05	AF0502	6/24/2003	2.6 =	0.82 J	1.5 =	6.8 =	11.72
AF-07	AF0702	6/24/2003	**6,000** =	100 U	722 =	100 U	6,722
AF-12	AF1202	6/24/2003	23.3 =	5 U	80.7 =	2.4 J	106.4
Eighth Semiannual Monitoring Event - January 2004							
AF-02	AF02A2	1/23/2004	0.47 J	0.46 J	1 U	1 U	0.93
AF-05	AF05A2	1/23/2004	3.8 =	0.99 J	7.7 =	4.2 =	16.69
AF-07	AF07A2	1/23/2004	**4,470** =	17.4 =	495 =	13.1 =	4,995.50
AF-12	AF12A2	1/23/2004	31.8 =	0.88 J	119 =	1 U	151.68
Ninth Semiannual Monitoring Event - July 2004							
AF-02	AF02B2	7/20/2004	1 U	1 U	1 U	1 U	ND
AF-05	AF05B2	7/20/2004	0.87 J	1 U	1.2 =	6.9 =	8.97
AF-07	AF07B2	7/20/2004	**4,529** =	17.6 U	591 =	6.3 J	5,134.90
AF-12	AF12B2	7/20/2004	50.3 =	1 U	91.5 =	1 U	131.8
IWQS			*71.28*	*200,000*	*28,718*	*NRC*	*NRC*
ACL			*340*				

NOTES:
A = Wells sampled during the Corrective Action Plan-Part B investigation that are in the Monitoring **Only** Program are summarized in this table.
Bold values exceed the In-Stream Water Quality Standards.
All contaminant values are in µg/L.
BTEX = Benzene, toluene, ethylbenzene, xylenes.
GA EPD = Georgia Environmental Protection Division.
ND = Not detected.
NRC = No regulatory criteria
NS = Not sampled.

Data Qualifiers
J – Indicates that the value for the compound is an estimated value.
U – Indicated that the compound was not detected at the concentration reported.
= – Indicates that the compound was detected at the concentration reported.

Table 2d. Groundwater Analytical Results (BTEX)

Sample Location	Sample ID	Date Sampled	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX
Tenth Semiannual Monitoring Event - January 2005							
AF-02	AF02C2	1/13/2005	0.6 J	1 U	0.61 J	1 U	1.21
AF-05	AF05C2	1/13/2005	4.4 =	1 U	6.3 =	7.0 =	17.7
AF-07	AF07C2	1/13/2005	**3.430** =	119 U	728 =	647 =	4,805
AF-12	AF12C2	1/13/2005	31.7 J	62.4 U	82.2 =	79 U	113.9
Eleventh Semiannual Monitoring Event - July 2005							
AF-02	AF02D2	7/19/2005	1 U	4.1 =	1 U	1 U	4.1
AF-05	AF05D2	7/19/2005	0.33 J	3.3 =	0.81 J	2.7 =	7.14
AF-07	AF07D2	7/19/2005	**3,380** =	22.4 J	723 =	14.7 J	760.1
AF-12	AF12D2	7/19/2005	18.2 =	5.5 =	70.1 =	0.34 J	94.14
Twelfth Semiannual Monitoring Event - January 2006							
AF-02	AF02E2	1/11/2006	1 U	0.255 J	1 U	1 U	0.36
AF-05	AF05E2	1/11/2006	1 U	0.737 J	0.51 J	2.81 =	4.06
AF-07	AF07E2	1/11/2006	**1,890** =	10.6 =	526 =	1.27 =	2,427.87
AF-12	AF12E2	1/11/2006	23.9 =	1.31 =	99.5 =	1 U	124.71
Thirteenth Semiannual Monitoring Event - July 2006							
AF-02	AF02F2	7/25/2006	1 U	1 U	1 U	1 U	ND
AF-05	AF05F2	7/25/2006	1 U	0.663 J	3.97 =	3.55 =	8.183
AF-07	AF07F2	7/25/2006	1730 =	11.4 J	760 =	11.2 J	2512.6
AF-12	AF07F2	7/25/2006	43.3 =	0.361 J	28.2 =	0.854 J	72.715
AF-40	AF40F2	7/25/2006	16.4 =	17.5 =	12.4 =	53.8 =	100.1
AF-41	AF41F2	7/25/2006	1.31 =	2.67 =	2.14 =	9.56 =	15.68
AF-68	AF468F2	7/25/2006	1.18 =	1 U	1 U	1 U	1.18
Fourteenth Semiannual Monitoring Event – January 2007							
Sample Location	**Sample ID**	**Date Sampled**	**Benzene**	**Toluene**	**Ethylbenzene**	**Xylenes**	**Total BTEX**
AF-02	AF02G2	1/23/07	1 U	0.673 J	0.27 J	0.537 J	1.48
AF-05	AF05G2	1/23/07	0.343 J	0.394 J	1.74 =	0.852 J	3.329
AF-07	AF07G2	1/23/07	**1,540** =	15.2 J	887 =	10 J	2,452.2
AF-12	AF12G2	1/23/07	34.7 =	0.331 J	49.2 =	0.586 J	84.117
AF-40	AF40G2	1/23/07	1 U	0.447 J	1 U	0.378 J	0.825
AF-41	AF41G2	1/23/07	1 U	1 U	1 U	1 U	ND
AF-68	AF68G2	1/23/07	0.993 J	0.623 J	1 U	0.873 J	2.489
IWQS			*71.28*	*200,000*	*28,718*	*NRC*	*NRC*
ACL			*340*				

NOTES:
A = Wells sampled during the Corrective Action Plan-Part B investigation that are in the Monitoring Only Program are summarized in this table.
Bold values exceed the In-Stream Water Quality Standards.
All contaminant values are in µg/L.
BTEX = Benzene, toluene, ethylbenzene, xylenes.
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ND = Not detected.
NRC = No regulatory criteria
NS = Not sampled.

Data Qualifiers
J – Indicates that the value for the compound is an estimated value.
U – Indicated that the compound was not detected at the concentration reported.
= – Indicates that the compound was detected at the concentration reported.

Table 2e. Groundwater Analytical Results (BTEX)

Sample Location	Sample ID	Date Sampled	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX
Fifteenth Semiannual Monitoring Event – October 2007							
AF-02	07282G01	10/9/2007	1 U	0.25 J	1 U	1 U	0.25
AF-05	07281G03	10/8/2007	0.18 J	1.6 =	1 U	0.78 J	2.56
AF-07R	07281G01	10/8/2007	41 =	0.27 J	8.0 =	1.4 =	50.67
AF-12R	07281G02	10/8/2007	1 U	1 U	1 U	1 U	ND
AF-41	07281G05	10/8/2007	1 U	1 U	1 U	1 U	ND
AF-68	07281G04	10/8/2007	0.41 J	1 U	1 U	1 U	0.41
Sixteenth Semiannual Monitoring Event – April 2008							
AF-12R	08106G01	4/15/08	0.48 J	1 U	1 U	1 U	0.48
AF-12R	08106901	4/15/08	0.47 J	1 U	1 U	1 U	0.47
260-MW02	08106G02	4/15/08	61 =	4.3 =	84 =	28 =	177.3
260-MW03	08106G03	4/15/08	0.13 J	1 U	1 U	1 U	0.13
AF-05	08106G04	4/15/08	0.56 J	1 U	0.79 J	1.2 =	2.55
AF-04	08106G05	4/15/08	1 U	1 U	1 U	1 U	ND
AF-07R	08106G06	4/15/08	**140** =	1.2 U	32 =	1.9 =	173.9
IWQS			*71.28*	*200,000*	*28,718*	*NRC*	*NRC*
ACL			*340*				

NOTES:
A = Wells sampled during the Corrective Action Plan-Part B investigation that are in the Monitoring Only Program are summarized in this table.
Bold values exceed the In-Stream Water Quality Standards.
All contaminant values are in µg/L.
BTEX = Benzene, toluene, ethylbenzene, xylenes.
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ND = Not detected.
NRC = No regulatory criteria
NS = Not sampled.

Data Qualifiers
J – Indicates that the value for the compound is an estimated value.
U – Indicated that the compound was not detected at the concentration reported.
= – Indicates that the compound was detected at the concentration reported.

Table 3. Groundwater Analytical Results (VOCs)

Sample Location	Sample ID	Date Sampled	1,1 Dichloroethylene (µg/L)	Total 1,2 Dichloroethylene (µg/L)	Trichloroethylene (µg/L)	Vinyl Chloride (µg/L)
Additional Well Information - February 2000						
AF 40	AF4012	2/2/2000	1 U	15.4 =	**53.3** =	1 U
AF41	AF4112	2/2/2000	0.94 J	35.6 =	**158** =	1 U
AF42	AF4212	2/2/2000	1 U	2 U	1 U	1 U
First Semiannual Monitoring Event - June 2000						
AF-40	AF4032	6/23/2000	1.6=	63.3 =	**353** =	1 U
AF-41	AF4132	6/23/2000	3=	**110** =	**636** =	1 U
AF-42	AF4232	6/23/2000	1U	2 U	1 U	1 U
Second Semiannual Monitoring Event - January 2001						
AF-40	AF4052	1/7/2001	0.41J	26 =	**108** J	0.67 J
AF-41	AF4152	1/7/2001	0.82J	32.7 =	**176** =	1 U
AF-42	AF4252	1/7/2001	1U	2 U	1 U	1 U
Third Semiannual Monitoring Event - June 2001						
AF-40	AF4062	6/8/2001	0.89J	48.5 =	**255** J	1 U
AF-41	AF4162	6/8/2001	0.81J	39.5 =	**195** J	1 U
AF-42	AF4262	6/8/2001	1U	2 U	0.36 J	1 U
Fourth Semiannual Monitoring Event - January 2002						
AF-40	AF4072	1/19/2002	1.6=	58.7 =	**379** =	1 U
AF-41	AF4172	1/19/2002	2.3=	76.4 =	**405** =	1 U
AF-42	AF4272	1/19/2002	1U	2 U	1 U	1 U
Fifth Semiannual Monitoring Event - June 2002						
VOC sampling of the chlorinated solvents plume was discontinued						
Thirteenth Semiannual Monitoring Event - July 2006						
AF-40	AF40F2	7/25/2006	1U	14.9 =	49.4 =	1 U
AF-41	AF41F2	7/25/2006	1.32 =	81 =	**252** =	1 U
AF-68	AF68F2	7/25/2006	1.71=	84.9 =	**540** =	1 U
Fourteenth Semiannual Monitoring Event – January 2007						
AF-40	AF40G2	1/23/2007	1.05 =	54.4 =	**201** =	1 U
AF-41	AF41G2	1/23/2007	1.2 =	61.3 =	**168** =	1 U
AF-68	AF68G2	1/23/2007	1.47 =	67.7 =	**373 J**	1 U
Fifteenth Semiannual Monitoring Event – October 2007						
AF-41	07281G05	10/8/2007	0.30J	12.28*	**24** =	2 U
AF-68	07281G04	10/8/2007	1.5=	62.95*	**110** =	2 U
Maximum Contaminant Level			*7*	*100* [a]	*5*	*2*
IWQS			*3.2*	*99*	*81*	*525*

NOTES:

[a] = Maximum contaminant level provided is for *trans*-1,2-dichloroethylene.

* - Indicates that cis-1,2-Dichloroethene and trans-1,2-Dichloroethene have been added together (Total).

Bold values exceed maximum contaminant levels.

VOC = Volatile organic compound

IWQS = In Stream Water Quality Standard

Data Qualifiers

J – Indicates that the value for the compound is an estimated value.

U – Indicated that the compound was not detected at the concentration reported.

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

APPENDIX III

LABORATORY ANALYTICAL RESULTS

STATE OF GEORGIA
ENVIRONMENTAL LABORATORY ACCREDITATION

Name of Laboratory:	ELAB of Tennessee
Address:	227 French Landing Drive, Suite 550 Nashville, TN 37228
Contact:	Marcia McGinnity
Telephone Number:	615-345-1119 x232
Fax Number:	615-846-5426
1. Accrediting Authority:	State of Florida DOH (NELAP Primary)
Accreditation Number:	E-87646
Effective Date:	7/1/07
Expiration Date:	6/30/08
Accreditation Scope:	CWA & RCRA/CERCLA

Validation Report

UST 25/26

Fort Stewart

Prepared by DataChek

November 5, 2007

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ACRONYMS AND ABBREVIATIONS

%	Percent
%D	percent difference
BTEX	benzene, toluene, ethylbenzene, and xylenes
CB	calibration blank
CCAL	continuing calibration
CCV	continuing calibration verification
COC	chain of custody
DRO	diesel range organic
EPH	extractible petroleum hydrocarbons
ER	equipment rinsate
FD	field duplicate
GRO	gasoline range organic
ICAL	initial calibration
ICL	instrument calibration limit
IS	internal standard
J	estimated value
LCS	laboratory control sample
MB	method blank
MDL	method detection limit
MS	matrix spike
MSD	matrix spike duplicate
MTBE	methyl tert butyl ether
PAH	polynuclear aromatic hydrocarbon
PARCC	precision, accuracy, representativeness, comparability, completeness
PRO	petroleum range organics
QC	quality control
R	Rejected
RL	reporting limit
RPD	relative percent difference
RRF	relative response factor
RSD	relative standard deviation
SDG	sample delivery group
TB	trip blank
TPH	total petroleum hydrocarbons
TCE	Trichloroethene
U	not detected
UJ	not detected; associated value is an estimate
VOC	volatile organic compound

1. INTRODUCTION

The data validation of 7 groundwater samples from UST 25/26, Ft Stewart was completed in November, 2007. Level III data validation was performed on all samples collected during the sampling activities. Empirical Laboratories, Nashville, TN, produced all the analytical data. The chemical parameters for which the samples were BTEX and total suite of volatile organic compounds

2. PROCEDURES

The sample data were validated following the logic identified in *The CLP National Functional Guidelines for Organic Data Review (October 1999)* for all areas.

The data validation qualifiers (Table 5-1) applied by the reviewer were recorded in a column adjacent and to the right of the laboratory results. A data validation reason code was also added to each of the reviewer's qualifiers to provide the user with a means to identify which results were qualified and the reason for the qualifiers (Table 5-2).

3. SUMMARY OF DATA VALIDATION FINDINGS

This data validation report reflects the data validation findings for samples associated with UST 25/26. The validated data set consisted of 7 groundwater samples and was validated at Level III. Overall the data was of excellent quality, and all measurements required to satisfy the project quality control (QC) objectives (precision, accuracy, representativeness, comparability, and completeness) were met. Each of these measures and specific data qualifications are discussed below.

Precision: Precision is a measure of the agreement between duplicate sample measurements of the same quantity and is reflected in the relative percent difference (RPD) between spikes and the RPD for the field duplicate analysis. Precision for UST 25/26 was measured at 97.9 percent.

Accuracy: Accuracy is measured by the results from the recovery of known amounts of compounds or elements from laboratory control samples (LCS), matrix spikes (MS), and surrogate recoveries. The overall measure of accuracy for UST 25/26 was calculated by comparing the number of spike recoveries that exceeded the laboratory limits by the total number of LCS, MS and surrogate spikes. For all analyte groups accuracy was measured at 98.8 percent.

Representativeness: The measures of representativeness – sample handling, analytical blank analysis, field blanks – were met for all sites. Acetone was present in the associated QC blanks and was qualified as "U" or not detected according to the 5x/10x rule. Designated analytical protocols were followed. Holding times were met for all analyses. Overall, no major problems were identified resulting from analytical failure.

Comparability: All data were analyzed using appropriate approved methods of analysis. All data results were reported correctly and in standard units

Completeness: Completeness is the amount of valid data compared to the planned amount and is expressed as a percent of the usable data points divided by the total number of analytes for each parameter analyzed. Out of a total of 116 data points, no data points were rejected, resulting in a completeness of 100 percent.

Several sample results for the organic compounds were assigned "J" qualifiers by the laboratory, which is standard practice, because the concentrations were quantified between the method detection limit and the reporting limit. Due to the uncertainty associated with this region of quantification, the validation reviewer retained the "J" qualifiers assigned by the laboratory to indicate an estimated quantity.

Data validation summaries, which function as worksheets for the validation task, are included for each parameter in each data package. The following section highlights the key findings of the data validation for each analysis.

4. ANALYSIS-SPECIFIC DATA VALIDATION SUMMARIES

4.1 BTEX / VOCS BY SW846 8260B

Seven groundwater samples were analyzed for BTEX / VOCs. Overall, the data are of good quality and are usable as reported by the laboratory with the exceptions noted below. Data were reviewed for the following:

Holding Times/Sample Condition. Holding times were met for all sample analyses. All samples were received in acceptable condition.

Initial Calibration and Continuing Calibration. All initial and continuing calibrations (ICALs/CCALs) associated with the project samples met QC criteria.

Blanks. Acetone was present in the equipment rinsate and field blanks associated with samples 07281G04, and 07281G05 and the acetone results in those samples were qualified as "U".

Surrogate Recoveries. All surrogate recoveries were within the QC limits.

Matrix Spike/Matrix Spike Duplicate. The MS or MSD result for trichloroethene were below the QC limit, but the LCS recovery was acceptable so no qualifiers were required.

Laboratory Control Sample. All recoveries were within the QC limits, and no qualifiers were required.

Field Duplicates. No field duplicate was analyzed.

Quantification. All results were acceptable as qualified.

5. DATA QUALIFIER DEFINITIONS

5.1 DATA QUALIFIER DEFINITIONS

Table 5-1 Data Qualifier Definitions

Qualifier	Definition
R	Indicates that the analyte result was rejected. The data was not reliable. Additional supporting analyses required.
U	The analyte was analyzed for, but was not detected above the reported sample quantification limit or the reported analyte value was not detected above 5x or 10x the level reported in laboratory or field blanks.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

5.2 DATA VALIDATION REASON CODES

During the review process, a data validation reason code was added to each of the reviewer's qualifiers to allow the user to identify which results were qualified and the reason(s) for the qualifiers. Reason codes are listed and defined in Table 5-2.

Table 5-2 Data Validation Reason Codes

Reason Code	Definition
01	Sample received outside of 4+/-2 degrees Celsius
01A	Improper sample preservation
02	Holding time exceeded
02A	Extraction
02B	Analysis
03	Instrument performance – outside criteria
03A	BFB
03B	DFTPP
03C	DDT and/or Endrin % breakdown exceeds criteria
03D	Retention time windows
03E	Resolution
04	Initial calibration results outside specified criteria
04A	Compound mean RRF QC criteria not met
04B	Individual % RSD criteria not met
04C	Correlation coefficient >0.995
05	Continuing calibration results outside specified criteria
05A	Compound mean RRF QC criteria not met
05B	Compound % D QC criteria not met
06	Result qualified as a result of the 5x/10x blank correction
06A	Method or preparation blank
06B	ICB or CCB
06C	ER
06D	TB
06E	FB
07	Surrogate recoveries outside control limits
07A	Sample
07B	Associated method blank or LCS
08	MS/MSD/Duplicate results outside criteria
08A	MS and/or MSD recovery not within control limits (accuracy)
08B	% RPD outside acceptance criteria (precision)
09	Post digestion spike outside criteria (GFAA)
10	Internal standards outside specified control limits

10A	Recovery
10B	Retention time
11	Laboratory control sample recoveries outside specified limits
11A	Recovery
11B	% RPD (if run in duplicate)
12	Interference check standard
13	Serial dilution
14	Tentatively identified compounds
15	Quantification
16	Multiple results available; alternate analysis preferred
17	Field duplicate RPD criteria is exceeded
18	Percent difference between original and second column exceeds QC criteria
19	Professional judgment was used to qualify the data
20	Pesticide clean-up checks
21	Target compound identification
22	Radiological calibration
23	Radiological quantification
24	Reported result and/or lab qualifier revised to reflect validation findings

% = percent
%D = percent difference
BFB = bromofluorobenzene
CCB = continuing calibration blank
DFTPP = decafluorotriphenylphosphine
ER = equipment rinseate
FB = field blank
GFAA = graphite furnace atomic absorption
ICB = initial calibration blank
LCS = laboratory control sample
MS = matrix spike
MSD = matrix spike duplicate
QC = quality control
RPD = relative percent difference
RRF = relative response factor
RSD = relative standard deviation
TB = trip blank

6. REFERENCES

EPA (U.S. Environmental Protection Agency), October 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (EPA-540/R-99-008).*

EMPIRICAL LABORATORIES, L[illegible] - CHAIN OF CUSTODY RECORD

39438

SHIP TO: 227 French Landing Drive, Suite 550 ♦ Nashville, TN 37228 ♦ 615-345-1115 ♦ (fax) 615-846-5426

Send Results to:	Send Invoice to:
Name Doug Hamm	Name
Company SES	Company SAME
Address 1006 Floyd Collier	Address
City Oak Ridge	City
State, Zip TN 37830	State, Zip
Phone 865 481 7837	Phone
Fax 481-0290	Fax
E-mail	E-mail
Project No./Name: USTs 25 & 26	**Sampler's (Signature):** D. Hamm

Analysis Requirements: BTEX; VOCs

Lab Use Only:

VOA Headspace	Y	N	NA
Field Filtered	Y	N	NA
Correct Containers	Y		NA
Discrepancies	Y	N	NA
Cust. Seals Intact	Y	N	NA
Containers Intact	Y	N	NA

Airbill #:

CAR #:

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	BTEX	VOCs	Comments	No. of Bottles	Lab Use Only Containers/Pres.
071083-01	10-8-07 1200	07281G01	GW	✓				3D-HY
-02	10-8-07 1210	07281G02		✓				
-03	10-8-07 1212	07281G02		✓				
-04	10-8-07 1300	07281G03		✓				
-05	10-8-07 1430	07281G04			✓			
	10-8-07 1435	07281G04MS			✓			
	10-8-07 1440	07281G04MD			✓			
-06	10-8-07 1545	07281G05			✓			
-07	10-8-07 1900	RS-01	Rinsate		✓			
-08	10-8-07 1910	FS-01	Fieldbls.		✓			
-09	LAB	TB-5156	TB		✓			
-10	10-7-07 0800	07282G01		✓				

	Date/Time	Received By: (Signature)
Sample Kit Prep'd by: (Signature)		
Relinquished by: (Signature) Doug Hamm	10-9-07 0900	
Relinquished by: (Signature)		
Received for Laboratory by: (Signature)	9:00 10-10-07	Temperature 3.0°C

REMARKS:

Details:

Page 1 of 1

Cooler No. ____ of ____

Date Shipped 10-9-07

Shipped By Fed-Ex

Turnaround Normal

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

07281G01

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SES.V10083

Matrix: (soil/water) WATER Lab Sample ID: 0710083-01

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1008301

Level: (low/med) LOW Date Sampled: 10/08/07 12:00

% Moisture: not dec. _____ Date Analyzed: 10/16/07 01:13

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q Rev Qual
71-43-2	Benzene	0.12	1.0	41	
100-41-4	Ethylbenzene	0.35	1.0	8.0	
108-88-3	Toluene	0.16	1.0	0.27	J J
1330-20-7	Xylene (total)	0.47	1.0	1.4	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

07281G02

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SES.V10083

Matrix: (soil/water) WATER Lab Sample ID: 0710083-02

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1008302

Level: (low/med) LOW Date Sampled: 10/08/07 12:10

% Moisture: not dec. _____ Date Analyzed: 10/16/07 01:42

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q
71-43-2	Benzene	0.12	1.0		U
100-41-4	Ethylbenzene	0.35	1.0		U
108-88-3	Toluene	0.16	1.0		U
1330-20-7	Xylene (total)	0.47	1.0		U

Rev Qu. u

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

07281902

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SES.V10083

Matrix: (soil/water) WATER Lab Sample ID: 0710083-03

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1008303

Level: (low/med) LOW Date Sampled: 10/08/07 12:12

% Moisture: not dec. _____ Date Analyzed: 10/16/07 02:12

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q
71-43-2	Benzene	0.12	1.0		U
100-41-4	Ethylbenzene	0.35	1.0		U
108-88-3	Toluene	0.16	1.0		U
1330-20-7	Xylene (total)	0.47	1.0		U

Rev 2 ua

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

07281G03

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SES.V10083

Matrix: (soil/water) WATER Lab Sample ID: 0710083-04

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1008304

Level: (low/med) LOW Date Sampled: 10/08/07 13:00

% Moisture: not dec. _____ Date Analyzed: 10/16/07 02:43

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q
71-43-2	Benzene	0.12	1.0	0.18	J
100-41-4	Ethylbenzene	0.35	1.0		U
108-88-3	Toluene	0.16	1.0	1.6	
1330-20-7	Xylene (total)	0.47	1.0	0.78	J

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

07281G04

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SES.V10083

Matrix: (soil/water) WATER Lab Sample ID: 0710083-05

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1008305

Level: (low/med) LOW Date Sampled: 10/08/07 14:30

% Moisture: not dec. _____ Date Analyzed: 10/16/07 05:11

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.7	10	3.8	J
71-43-2	Benzene	0.12	1.0	0.41	J
75-27-4	Bromodichloromethane	0.12	1.0		U
75-25-2	Bromoform	0.13	1.0		U
74-83-9	Bromomethane	0.13	2.0		U
78-93-3	2-Butanone	1.4	10		U
75-15-0	Carbon disulfide	0.15	1.0		U
56-23-5	Carbon tetrachloride	0.11	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.14	2.0		U
67-66-3	Chloroform	0.13	1.0		U
74-87-3	Chloromethane	0.28	2.0		U
110-82-7	Cyclohexane	0.12	2.0		U
124-48-1	Dibromochloromethane	0.14	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.090	2.0		U
106-93-4	1,2-Dibromoethane	0.14	1.0		U
95-50-1	1,2-Dichlorobenzene	0.11	1.0		U
541-73-1	1,3-Dichlorobenzene	0.38	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.25	2.0		U
75-34-3	1,1-Dichloroethane	0.11	1.0		U
107-06-2	1,2-Dichloroethane	0.13	1.0		U
75-35-4	1,1-Dichloroethene	0.13	1.0	1.5	
156-59-2	cis-1,2-Dichloroethene	0.14	1.0	62	
156-60-5	trans-1,2-Dichloroethene	0.15	1.0	0.95	J
78-87-5	1,2-Dichloropropane	0.11	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.080	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.12	1.0		U
100-41-4	Ethylbenzene	0.35	1.0		U
591-78-6	2-Hexanone	0.18	5.0		U
98-82-8	Isopropylbenzene	0.11	1.0		U
79-20-9	Methyl acetate	0.36	1.0		U
75-09-2	Methylene chloride	0.23	2.0		U
108-87-2	Methyl cyclohexane	0.12	1.0		U
1634-04-4	MTBE	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.35	5.0		U
100-42-5	Styrene	0.090	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.13	1.0		U
127-18-4	Tetrachloroethene	0.10	1.0		U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

07281G04

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SES.V10083

Matrix: (soil/water) WATER Lab Sample ID: 0710083-05

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1008305

Level: (low/med) LOW Date Sampled: 10/08/07 14:30

% Moisture: not dec. _____ Date Analyzed: 10/16/07 05:11

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.16	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.57	1.0		U
71-55-6	1,1,1-Trichloroethane	0.12	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.23	1.0	110	
76-13-1	Trichlorotrifluoroethane	0.11	1.0		U
75-69-4	Trichlorofluoromethane	0.12	2.0		U
75-01-4	Vinyl chloride	0.20	2.0		U
1330-20-7	Xylene(total)	0.47	1.0		U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

07281G05

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SES.V10083

Matrix: (soil/water) WATER Lab Sample ID: 0710083-06

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1008306

Level: (low/med) LOW Date Sampled: 10/08/07 15:45

% Moisture: not dec. _____ Date Analyzed: 10/16/07 03:12

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.7	10	3.9	J
71-43-2	Benzene	0.12	1.0		U
75-27-4	Bromodichloromethane	0.12	1.0		U
75-25-2	Bromoform	0.13	1.0		U
74-83-9	Bromomethane	0.13	2.0		U
78-93-3	2-Butanone	1.4	10		U
75-15-0	Carbon disulfide	0.15	1.0		U
56-23-5	Carbon tetrachloride	0.11	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.14	2.0		U
67-66-3	Chloroform	0.13	1.0		U
74-87-3	Chloromethane	0.28	2.0		U
110-82-7	Cyclohexane	0.12	2.0		U
124-48-1	Dibromochloromethane	0.14	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.090	2.0		U
106-93-4	1,2-Dibromoethane	0.14	1.0		U
95-50-1	1,2-Dichlorobenzene	0.11	1.0		U
541-73-1	1,3-Dichlorobenzene	0.38	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.25	2.0		U
75-34-3	1,1-Dichloroethane	0.11	1.0		U
107-06-2	1,2-Dichloroethane	0.13	1.0		U
75-35-4	1,1-Dichloroethene	0.13	1.0	0.30	J
156-59-2	cis-1,2-Dichloroethene	0.14	1.0	12	
156-60-5	trans-1,2-Dichloroethene	0.15	1.0	0.28	J
78-87-5	1,2-Dichloropropane	0.11	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.080	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.12	1.0		U
100-41-4	Ethylbenzene	0.35	1.0		U
591-78-6	2-Hexanone	0.18	5.0		U
98-82-8	Isopropylbenzene	0.11	1.0		U
79-20-9	Methyl acetate	0.36	1.0		U
75-09-2	Methylene chloride	0.23	2.0		U
108-87-2	Methyl cyclohexane	0.12	1.0		U
1634-04-4	MTBE	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.35	5.0		U
100-42-5	Styrene	0.090	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.13	1.0		U
127-18-4	Tetrachloroethene	0.10	1.0		U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

07281G05

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SES.V10083

Matrix: (soil/water) WATER Lab Sample ID: 0710083-06

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1008306

Level: (low/med) LOW Date Sampled: 10/08/07 15:45

% Moisture: not dec. _____ Date Analyzed: 10/16/07 03:12

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.16	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.57	1.0		U
71-55-6	1,1,1-Trichloroethane	0.12	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.23	1.0	24	
76-13-1	Trichlorotrifluoroethane	0.11	1.0		U
75-69-4	Trichlorofluoromethane	0.12	2.0		U
75-01-4	Vinyl chloride	0.20	2.0		U
1330-20-7	Xylene(total)	0.47	1.0		U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

07282G01

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SES.V10083

Matrix: (soil/water) WATER Lab Sample ID: 0710083-10

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1008310

Level: (low/med) LOW Date Sampled: 10/09/07 08:00

% Moisture: not dec. _____ Date Analyzed: 10/16/07 04:41

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q	Qual
71-43-2	Benzene	0.12	1.0		U	U
100-41-4	Ethylbenzene	0.35	1.0		U	U
108-88-3	Toluene	0.16	1.0	0.25	J	J
1330-20-7	Xylene(total)	0.47	1.0		U	U

Validation Report
Fort Stewart, Georgia
USTs 25/26

Prepared by DataChek

May 8, 2008

TABLE OF CONTENTS

List of Tables

ACRONYMS AND ABBREVIATIONS

%	Percent
%D	percent difference
BTEX	benzene, toluene, ethylbenzene, and xylenes
CB	calibration blank
CCAL	continuing calibration
CCV	continuing calibration verification
COC	chain of custody
DRO	diesel range organic
EPH	extractible petroleum hydrocarbons
ER	equipment rinsate
FD	field duplicate
GRO	gasoline range organic
ICAL	initial calibration
ICL	instrument calibration limit
IS	internal standard
J	estimated value
LCS	laboratory control sample
MB	method blank
MDL	method detection limit
MS	matrix spike
MSD	matrix spike duplicate
MTBE	methyl tert butyl ether
PAH	polynuclear aromatic hydrocarbon
PARCC	precision, accuracy, representativeness, comparability, completeness
QC	quality control
R	Rejected
RL	reporting limit
RPD	relative percent difference
RRF	relative response factor
RSD	relative standard deviation
SDG	sample delivery group
SVOC	Semivolatile organic compound
TB	trip blank
TCE	Trichloroethene
TOC	total organic carbon
TOH	total organic halides
U	not detected
UJ	not detected; associated value is an estimate
VOC	volatile organic compound

1. INTRODUCTION

The data validation of seven water samples analyzed for the BTEX and MTBE compounds, collected from USTs 25/26 at Fort Stewart, GA was completed in May 2008. Level III data validation was performed on all samples. Empirical Laboratories, Nashville, TN produced all the analytical data

2. PROCEDURES

The sample data were validated following the logic identified in *The CLP National Functional Guidelines for Organic Data Review (October 1999).*

The data validation qualifiers (Table 5-1) applied by the reviewer were recorded in a column adjacent and to the right of the laboratory results. A data validation reason code was also added to each of the reviewer's qualifiers to provide the user with a means to identify which results were qualified and the reason for the qualifiers (Table 5-2).

3. SUMMARY OF DATA VALIDATION FINDINGS

This data validation report reflects the data validation findings for samples associated with USTs 25/26. The validated data set consisted of 7 water samples validated at Level III. Overall the data was of excellent quality, and all measurements met the measures required to satisfy the project quality control (QC) objectives (precision, accuracy, representativeness, comparability, and completeness) were met. Each of these measures and specific data qualifications are discussed below.

Precision: Precision is a measure of the agreement between duplicate sample measurements of the same quantity and is reflected in the relative percent difference (RPD) between spikes and the RPD for the field duplicate analysis. Precision was measured at 100.0 percent.

Accuracy: Accuracy is measured by the results from the recovery of known amounts of compounds or elements from laboratory control samples (LCS), matrix spikes (MS), and surrogate recoveries. The overall measure of accuracy for the UST samples was calculated by comparing the number of spike recoveries that exceeded the laboratory limits by the total number of LCS, MS and surrogate recoveries. For the samples accuracy was measured at 100.0 percent.

Representativeness: The measures of representativeness – sample handling, analytical blank analysis, field blanks – were met. Designated analytical protocols were followed. Holding times were met for the analysis. Overall, no major problems were identified resulting from analytical failure.

Comparability: The samples were analyzed using appropriate approved methods of analysis. All data results were reported correctly and in standard units

Completeness: Completeness is the amount of valid data compared to the planned amount and is expressed as a percent of the usable data points divided by the total number of analytes for each parameter analyzed. Out of a total of 35 data points, no data points were rejected, resulting in a completeness of 100 percent.

Data validation summaries, which function as worksheets for the validation task, are included for each parameter in each data package. The following section highlights the key findings of the data validation for each analysis.

4. ANALYSIS-SPECIFIC DATA VALIDATION SUMMARIES

4.1 BTEX/MTBE BY SW846 8260B

Seven water samples were analyzed for the BTEX/MTBE compounds and overall, the data are of good quality and are usable as qualified. Data were reviewed for the following:

Holding Times/Sample Condition. The samples were received in acceptable condition and were analyzed within the QC holding time.

Initial and Continuing Calibration. The ICAL and CCAL analyses were within the QC limits.

Blanks. No contamination was noted in the associated method blanks, however the rinsate and field blanks showed concentrations of toluene. Samples 08106G04, 08106G05, and 08106G06 had the toluene results qualified as "U" due to the 5X rule.

Surrogate Recoveries. All surrogate recoveries were within the acceptable QC limits.

Matrix Spike/Matrix Spike Duplicates. The bfb instrument performance check sample associated with the MS/MSD was analyzed beyond the QC required time interval. No action was taken since all other QC criteria were met and qualification is not done based on the results of the MS/MSD analysis alone.

Laboratory Control Sample. LCS recoveries were within the QC limits.

Field Duplicates. Since the field duplicate RPDs were within the QC limit, no qualifiers were required.

Quantification. Sample 08106G02 had a result for ethylbenzene that exceeded the instrument calibration limit and required a dilution. The dilution result was accepted and the original result was rejected. The sample results were acceptable as qualified.

5. DATA QUALIFIER DEFINITIONS

5.1 DATA QUALIFIER DEFINITIONS

Table 5-1 Data Qualifier Definitions

Qualifier	Definition
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.
U	The analyte was analyzed for, but was not detected above the reported sample quantification limit or the reported analyte value was not detected above 5x or 10x the level reported in laboratory or field blanks.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

5.2 DATA VALIDATION REASON CODES

During the review process, a data validation reason code was added to each of the reviewer's qualifiers to allow the user to identify which results were qualified and the reason(s) for the qualifiers. Reason codes are listed and defined in Table 5-2.

Table 5-2 Data Validation Reason Codes

Reason Code	Definition
01	Sample received outside of 4+/-2 degrees Celsius
01A	Improper sample preservation
02	Holding time exceeded
02A	Extraction
02B	Analysis
03	Instrument performance – outside criteria
03A	BFB
03B	DFTPP
03C	DDT and/or Endrin % breakdown exceeds criteria
03D	Retention time windows
03E	Resolution
04	Initial calibration results outside specified criteria
04A	Compound mean RRF QC criteria not met
04B	Individual % RSD criteria not met
04C	Correlation coefficient >0.995
05	Continuing calibration results outside specified criteria
05A	Compound mean RRF QC criteria not met
05B	Compound % D QC criteria not met
06	Result qualified as a result of the 5x/10x blank correction
06A	Method or preparation blank
06B	ICB or CCB
06C	ER
06D	TB
06E	FB
07	Surrogate recoveries outside control limits
07A	Sample
07B	Associated method blank or LCS
08	MS/MSD/Duplicate results outside criteria
08A	MS and/or MSD recovery not within control limits (accuracy)
08B	% RPD outside acceptance criteria (precision)
09	Post digestion spike outside criteria (GFAA)
10	Internal standards outside specified control limits
10A	Recovery
10B	Retention time
11	Laboratory control sample recoveries outside specified limits
11A	Recovery
11B	% RPD (if run in duplicate)
12	Interference check standard
13	Serial dilution
14	Tentatively identified compounds
15	Quantification

16	Multiple results available; alternate analysis preferred
17	Field duplicate RPD criteria is exceeded
18	Percent difference between original and second column exceeds QC criteria
19	Professional judgment was used to qualify the data
20	Pesticide clean-up checks
21	Target compound identification
22	Radiological calibration
23	Radiological quantification
24	Reported result and/or lab qualifier revised to reflect validation findings

% = percent
%D = percent difference
BFB = bromofluorobenzene
CCB = continuing calibration blank
DFTPP = decafluorotriphenylphosphine
ER = equipment rinseate
FB = field blank
GFAA = graphite furnace atomic absorption
ICB = initial calibration blank
LCS = laboratory control sample
MS = matrix spike
MSD = matrix spike duplicate
QC = quality control
RPD = relative percent difference
RRF = relative response factor
RSD = relative standard deviation
TB = trip blank

6. REFERENCES

EPA (U.S. Environmental Protection Agency), October 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (EPA-540/R-99-008).*

EMPIRICAL LABORATORIES, LL. CHAIN OF CUSTODY RECORD

SHIP TO: 227 French Landing Drive, Suite 550 ♦ Nashville, TN 37228 ♦ 615-345-1115 ♦ (fax) 615-846-5426

Send Results to:	Send Invoice to:
Name Doug Hawn	Name
Company SES	Company
Address 1006 Floyd Culler Ct	Address SAME
City Oak Ridge	City
State, Zip TN 37830	State, Zip
Phone 865-481-7837	Phone
Fax 481-0290	Fax
E-mail	E-mail
Project No./Name: USTs 25 & 26	Sampler's (Signature): C. Hawn

Analysis Requirements: BTEX

Lab Use Only:

VOA Headspace	Y	(N)	NA
Field Filtered	Y	(N)	NA
Correct Containers	(Y)	N	NA
Discrepancies	Y	(N)	NA
Cust. Seals Intact	(Y)	N	NA
Containers Intact	(Y)	N	NA

Airbill #:

CAR #:

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	BTEX	Comments	No. of Bottles	Lab Use Only Containers/Pres.
0804182 -01	4-15-08 0930	08106G01	GW	✓		3	3J-HY
-02	4-15-08 0932	08106G901	GW	✓		3	
-01	4-15-08 0934	08106G01MS	GW	✓		3	
-01	4-15-08 0936	08106G01MSD	GW	✓		3	
-03	4-15-08 1110	08106G02	GW	✓		3	
-04	4-15-08 1335	08106G03	GW	✓		3	
-05	4-15-08 1455	08106G04	GW	✓		3	
-06	4-15-08 1320	FS-01	W	✓		3	
-07	4-15-08 1325	RS-01	W	✓		3	
-08	4-15-08 1400	08106G05	GW	✓		3	
-09	4-15-08 1530	08106G06	GW	✓		3	
-10	LAB	TB 5484	W	✓		2	2J-HY

	Date/Time	Received By: (Signature)
Sample Kit Prep'd by: (Signature) D.J.		
Relinquished by: (Signature) Doug Hawn	Date/Time 1200 4-16-08	Received By: (Signature)
Relinquished by: (Signature)	Date/Time	Received By: (Signature)
Received for Laboratory by: (Signature)	Date/Time 9:00 4-17-08	Temperature 3.5°C

REMARKS:

UST Facility ID
~~0890037~~
9025008

Details:

Page 1 of 1

Cooler No. ____ of ____

Date Shipped 4-16-08

Shipped By Fed-Ex

Turnaround Normal

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

08106G01

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SES.V04182

Matrix: (soil/water) WATER Lab Sample ID: 0804182-01

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 0418201

Level: (low/med) LOW Date Sampled: 04/15/08 09:30

% Moisture: not dec. _____ Date Analyzed: 04/21/08 20:11

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q
71-43-2	Benzene	0.12	1.0	0.48	J
100-41-4	Ethylbenzene	0.35	1.0		U
1634-04-4	MTBE	0.10	1.0		U
108-88-3	Toluene	0.16	1.0		U
1330-20-7	Xylene(total)	0.47	1.0		U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

08106G901

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SES.V04182

Matrix: (soil/water) WATER Lab Sample ID: 0804182-02

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 0418202

Level: (low/med) LOW Date Sampled: 04/15/08 09:32

% Moisture: not dec. _____ Date Analyzed: 04/21/08 20:42

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q Rev Qual
71-43-2	Benzene	0.12	1.0	0.47	J J
100-41-4	Ethylbenzene	0.35	1.0		U U
1634-04-4	MTBE	0.10	1.0		U
108-88-3	Toluene	0.16	1.0		U
1330-20-7	Xylene(total)	0.47	1.0		U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

08106G02

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SES.V04182

Matrix: (soil/water) WATER Lab Sample ID: 0804182-03

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 0418203

Level: (low/med) LOW Date Sampled: 04/15/08 11:10

% Moisture: not dec. _____ Date Analyzed: 04/21/08 21:11

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q
71-43-2	Benzene	0.12	1.0	61	
100-41-4	Ethylbenzene	0.35	1.0	100	E R 16
1634-04-4	MTBE	0.10	1.0	4.3	
108-88-3	Toluene	0.16	1.0	4.3	
1330-20-7	Xylene(total)	0.47	1.0	28	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

08106G02DL

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SES.V04182

Matrix: (soil/water) WATER Lab Sample ID: 0804182-03DL

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 0418203D

Level: (low/med) LOW Date Sampled: 04/15/08 11:10

% Moisture: not dec. _____ Date Analyzed: 04/23/08 22:08

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 2.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q	Rev Qual	
71-43-2	Benzene	0.24	2.0	53	D	R	16
100-41-4	Ethylbenzene	0.70	2.0	84	D		
1634-04-4	MTBE	0.20	2.0	4.0	D	R	16
108-88-3	Toluene	0.32	2.0	3.4	D		
1330-20-7	Xylene(total)	0.94	2.0	20	D		

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

08106G03

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SES.V04182

Matrix: (soil/water) WATER Lab Sample ID: 0804182-04

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 0418204

Level: (low/med) LOW Date Sampled: 04/15/08 12:35

% Moisture: not dec. _____ Date Analyzed: 04/21/08 21:41

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q
71-43-2	Benzene	0.12	1.0	0.13	J
100-41-4	Ethylbenzene	0.35	1.0		U
1634-04-4	MTBE	0.10	1.0	0.27	J
108-88-3	Toluene	0.16	1.0		U
1330-20-7	Xylene(total)	0.47	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

08106G04

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SES.V04182

Matrix: (soil/water) WATER Lab Sample ID: 0804182-05

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 0418205

Level: (low/med) LOW Date Sampled: 04/15/08 12:55

% Moisture: not dec. _____ Date Analyzed: 04/21/08 22:10

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q	Rej Qual
71-43-2	Benzene	0.12	1.0	0.56	J	J
100-41-4	Ethylbenzene	0.35	1.0	0.79	J	J
1634-04-4	MTBE	0.10	1.0	2.2		
108-88-3	Toluene	0.16	1.0	~~0.96~~ 1.0	J	46c,e
1330-20-7	Xylene (total)	0.47	1.0	1.2		

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

08106G05

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SES.V04182

Matrix: (soil/water) WATER Lab Sample ID: 0804182-08

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 0418208

Level: (low/med) LOW Date Sampled: 04/15/08 14:00

% Moisture: not dec. _____ Date Analyzed: 04/21/08 23:40

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q Rev Qual
71-43-2	Benzene	0.12	1.0		U U
100-41-4	Ethylbenzene	0.35	1.0		U U
1634-04-4	MTBE	0.10	1.0		U U
108-88-3	Toluene	0.16	1.0	1.00 ~~36~~	J U GCS
1330-20-7	Xylene (total)	0.47	1.0		U U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

08106G06

Lab Name: EMPIRICAL LABS Contract: SES

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SES.V04182

Matrix: (soil/water) WATER Lab Sample ID: 0804182-09

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 0418209

Level: (low/med) LOW Date Sampled: 04/15/08 15:30

% Moisture: not dec. _____ Date Analyzed: 04/22/08 00:10

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND	MDL	RL	CONC	Q Rev Qual
71-43-2	Benzene	0.12	1.0	140	
100-41-4	Ethylbenzene	0.35	1.0	32	
1634-04-4	MTBE	0.10	1.0	4.0	
108-88-3	Toluene	0.16	1.0	1.2	u 6
1330-20-7	Xylene(total)	0.47	1.0	1.9	

APPENDIX IV

SITE RANKING FORM

SITE RANKING FORM
Fifteenth Semiannual Monitoring Event

Facility Name: USTs 25 & 26 **Ranked by:** Jeff Williams

County: Chatham **Facility ID #:** 9-025008 **Date Ranked:** 01/16/08

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	= 0
__	>1 - 10 mg/kg	= 25
X	>10 mg/kg	= 50

* Closure Sample HAAF-260-PIPE-D-2-S

B. Total Benzene-
Maximum Concentration found on the site

__	≤0.005 mg/kg	= 0
__	>0.005 – 0.05 mg/kg	= 1
__	>0.05 – 1 mg/kg	= 10
__	>1 – 10 mg/kg	= 25
X	>10 – 50 mg/kg	= 40
__	>50 mg/kg	= 50

* Closure Sample HAAF-260-PIPE-D-2-S

C. Depth to Groundwater
(bls = below land surface)

__	>50'bls	= 1
__	>25' – 50'bls	= 2
__	>10' – 25'bls	= 5
X	≤10'bls	= 10

Fill in the blanks: **(A. 50) + (B. 40) = (90) x (C. 10) = (D. 900)**

GROUNDWATER CONTAMINATION (CAP B groundwater data)

E.. Free Product (Nonaqueous-phase liquid hydrocarbons; See Guidelines For definition of "sheen").

X	No free product	= 0
__	Sheen – 1/8"	= 250
__	>1/8" – 6"	= 200
__	>6" – 1ft.	= 1000
__	For every additional inch, add another 100 points = ___	

F. Dissolved Benzene -
Maximum Concentration at the site
(One well must be located at the source of the release.)

__	≤5µg/L	= 0
X	>5 – 100 µg/L	= 5
__	>100 – 1,000 µg/L	= 50
__	>1,000 – 10,000 µg/L	= 500
__	>10,000 µg/L	= 1500

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

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	= 2,000
__	≤500'	= 500
__	>500' - ¼ mi	= 25
__	¼ mi – 1 mi	= 10
__	>1 mi – 2 mi	= 2
X	>2 mi	= 0

For lower susceptibility areas only:

__	>1 mi	= 0

I. Non-Public Water Supply

__	Impacted	= 2,000
__	≤100'	= 500
__	>100' – 500'	= 2
__	>500' - ¼ mi	= 5
__	>¼ - ½ mi	= 2
X	> ½ mi	= 0

For lower susceptibility areas only:

__	>¼ mi	= 0

Note: If site is in lower susceptibility area, do not use the shaded areas.
For justification that withdrawal point is not hydraulically connected, see attached text.

J. Distance from nearest Contaminant Plume boundary to downgradient Surface Waters **OR UTILITY TRENCHES & VAULTS** (a utility trench may be omitted from ranking if its invert elevation is more than 5 feet above the water table.

__	Impacted	= 500
X	≤500'	= 50
__	>500' – 1000'	= 5
__	>1000'	= 2

K. Distance from any Free Product to basements and crawlspaces

__	Impacted	= 500
__	<500'	= 50
__	>500' – 1000'	= 5
X	>1000' or no free product	= 0

Fill in the blanks: (H. 0) + (I. 0) + (J. 50) + (K. 0) = L. 50

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

(M. 250) + (D. 900) = N. 1150

P. **SUSCEPTIBILITY AREA MULTIPLIER**

__ If site is located in a Low Ground-Water Pollution Susceptibility Area = 0.5

X 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

X No = 0

Fill in the blanks: (N. 1150) x (P. 1) = (1150) + (Q. 0)

= 1150 (October 2007 – Fifteenth Semiannual Sampling Event ENVIRONMENTAL SENSITIVITY SCORE

SITE RANKING FORM
Sixteenth Semiannual Monitoring Event

Facility Name: USTs 25 & 26 **Ranked by:** Jeff Williams

County: Chatham **Facility ID #:** 9-025008 **Date Ranked:** 06/04/08

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	= 0
__	>1 - 10 mg/kg	= 25
X	>10 mg/kg	= 50

* Closure Sample HAAF-260-PIPE-D-2-S

B. Total Benzene-
Maximum Concentration found on the site

__	≤0.005 mg/kg	= 0
__	>0.005 – 0.05 mg/kg	= 1
__	>0.05 – 1 mg/kg	= 10
__	>1 – 10 mg/kg	= 25
X	>10 – 50 mg/kg	= 40
__	>50 mg/kg	= 50

* Closure Sample HAAF-260-PIPE-D-2-S

D. Depth to Groundwater
(bls = below land surface)

__	>50'bls	= 1
__	>25' – 50'bls	= 2
__	>10' – 25'bls	= 5
X	≤10'bls	= 10

Fill in the blanks: (A. 50) + (B. 40) = (90) x (C. 10) = (D. 900)

GROUNDWATER CONTAMINATION (CAP B groundwater data)

E.. Free Product (Nonaqueous-phase liquid hydrocarbons; See Guidelines For definition of "sheen").

X	No free product	= 0
__	Sheen – 1/8"	= 250
__	>1/8" – 6"	= 200
__	>6" – 1 ft.	= 1000
__	For every additional inch, add another 100 points = ___	

F. Dissolved Benzene -
Maximum Concentration at the site
(One well must be located at the source of the release.)

__	≤5µg/L	= 0
__	>5 – 100 µg/L	= 5
X	>100 – 1,000 µg/L	= 50
__	>1,000 – 10,000 µg/L	= 500
__	>10,000 µg/L	= 1500

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

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	= 2,000
__	≤500'	= 500
__	>500' - ¼ mi	= 25
__	¼ mi – 1 mi	= 10
__	>1 mi – 2 mi	= 2
X	>2 mi	= 0

For lower susceptibility areas only:

__	>1 mi	= 0

I. Non-Public Water Supply

__	Impacted	= 2,000
__	≤100'	= 500
__	>100' – 500'	= 2
__	>500' - ¼ mi	= 5
__	>¼ - ½ mi	= 2
X	> ½ mi	= 0

For lower susceptibility areas only:

__	>¼ mi	= 0

Note: If site is in lower susceptibility area, do not use the shaded areas.
For justification that withdrawal point is not hydraulically connected, see attached text.

J. Distance from nearest Contaminant Plume boundary to downgradient Surface Waters **OR UTILITY TRENCHES & VAULTS** (a utility trench may be omitted from ranking if its invert elevation is more than 5 feet above the water table.

__	Impacted	= 500
X	≤500'	= 50
__	>500' – 1000'	= 5
__	>1000'	= 2

K. Distance from any Free Product to basements and crawlspaces

__	Impacted	= 500
__	<500'	= 50
__	>500' – 1000'	= 5
X	>1000' or no free product	= 0

Fill in the blanks: (H. 0) + (I. 0) + (J. 50) + (K. 0) = L. 50

(G. 50) x (L. 50) = M. 2,500

(M. 2,500) + (D. 900) = N. 3,400

P. **SUSCEPTIBILITY AREA MULTIPLIER**

__ If site is located in a Low Ground-Water Pollution Susceptibility Area = 0.5

X 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

X No = 0

Fill in the blanks: (N. 3,400) x (P. 1) = (3400) + (Q. 0)

= 3,400 (April 2008 – Sixteenth 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 Hunter Army Airfield (HAAF), which support HAAF's determination that the water withdrawal points located at the airfield cannot be hydraulically connected to the surficial aquifer.

1.0 REGIONAL GEOLOGY

Southeast Georgia is located within the Coastal Plain physiographic province of the southeast United States (Clark and Zisa 1976). In this region, the thickness of the southeastward-dipping subsurface strata ranges from 0 ft at the Fall Line, located approximately 350 miles inland from the Atlantic coast, to approximately 4,200 ft below ground surface (bgs) at the coast. Herrick (1961) provides detailed lithologic descriptions of the stratigraphic units encountered during the installation of water and petroleum exploration wells in Chatham County. The well log of GGS Well 125, located on White Bluff Road, 700 ft west and 0.3 miles north of Buckhalter Road, Savannah, provides one of the more complete lithologic descriptions of upper Eocene, Miocene, and Pliocene to recent sedimentary strata in Chatham County.

The upper Eocene (Ocala Limestone) section of GGS Well 125 is approximately 225 ft thick and dominated by light gray to white, fossiliferous limestone. The Miocene section is approximately 250 ft thick and consists of limestone, with a 160 ft thick cap dark green phosphatic clay. This clay is regionally extensive and is known to occupy the Coosawhatchie Formation of the Hawthorn Group (Furlow 1969; Aorora 1984; Huddlestun 1988). The interval from approximately 80 ft to the surface is Pliocene to Recent in age and composed primarily of sand interblended with clay and silt. This section is occupied by the Satilla and Cypresshead Formations (Huddlestun 1988).

2.0 LOCAL GEOLOGY

HAAF is located within the Barrier Island Sequence District of the Coastal Plain physiographic province of the southeast United States (Clark and Zisa 1976). The Barrier Island Sequence in Chatham and Bryan Counties is characterized by the existence of several marine terraces (step-like topographic surfaces that decrease in elevation toward the coast). These marine terraces, and their associated deposits, are the result of sea level fluctuations that occurred during the Pleistocene epoch. The surficial (Quaternary) deposits in Chatham and Bryan Counties, in decreasing elevation and age, are part of the Okefenokee, Wicomico, Penholoway, Pamlico, and Silver Bluff terrace complexes (Wilkes et al. 1974; GA DNR 1976; Hudlestun 1988).

HAAF, as well as most of Chatham County, is underlain by the Pleistocene Pamlico terrace. The Pleistocene Satilla Formation (formerly known as the Pamlico Formation) consists of deposits of the Pamlico terrace complex and other terrace complexes in the region (Huddlestun 1988). The Satilla Formation is a lithologically heterogeneous unit that consists of variably bedded to non-bedded sand and variably bedded silty to sandy clay. During the Pleistocene epoch, these sand and clay deposits were formed in offshore and inner continental shelf, barrier island, and march/lagoonal-type environments (Huddlestun 1988). According to the Geologic Map of Georgia (GA DNR 1976), clay beds of marsh origin, which were deposited on the northwestern side of the former Pamlico barrier island complex, exist in the western quarter of HAAF. Very fine to coarse grained sand deposits of barrier island origin are more common throughout the remaining areas of HAAF.

Based on the coring and sampling of unconsolidated strata at HAAF during the Corrective Action Plan-Part A investigations, it was concluded that all former underground storage tanks (USTs) were buried within the Satilla Formation, which is overlain by various soil types. Soil groups at HAAF include the Chipley, Leon, Ellabelle, Kershaw, Pelham, Albany, Wahee, and Ogeechee (Wilkes et al. 1974).

3.0 REGIONAL AND LOCAL HYDROGEOLOGY

The hydrogeology in the vicinity of HAAF is mostly influenced by two aquifer systems. These are referred to as the principal artesian (Floridan) aquifer and the surficial aquifer (Miller 1990). 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, approximately 800 ft in total thickness, is composed primarily of Tertiary-age limestone, including the Bug Island Formation, Ocala Group, and Suwannee Limestone. Groundwater from the Floridan is used primarily for drinking water (Arora 1984). According to Miller (1990), one of the largest cones of depression produced in the upper system between the predevelopment period and 1980 exceeded 80 ft beneath Savannah. In addition, according to 1980 estimates, more than 500 million gallons of water per day were withdrawn from the Floridan for public and industrial use in southeast Georgia, more than any other region.

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

The surficial aquifer consists of widely varying amounts of sand and clay, ranging from 55 to 150 ft in thickness, and is composed primarily of the Satilla and Cypresshead Formations in the Savannah vicinity (Arora 1984). This aquatic is primarily used for domestic lawn and agricultural irrigation. The top of the water table ranges from approximately 2 to 10 ft bgs (Miller 1990). Groundwater in the surficial aquifer system is under unconfined, or water table, conditions; however, locally, thin clay beds create confined or semiconfined conditions, as is the case at HAAF where thin, surficial clay beds are present in the western quadrant (GA DNR 1976).

Groundwater encountered at all the UST investigation sites is part of the surficial aquifer system. Based on the fact that all public and non-public water supply wells draw water from the principal 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 HAAF.

4.0 REFERENCES

Arora, Ram 1984. *Hydraulic Evaluation for Underground Injection Control in the Coastal Plain of Georgia,* Department of Natural Resources, Environmental Protection Division, Georgia Geological Survey.

Clark, W.Z., Jr., and A.C. Zisa 1976. *Physiographic Map of Georgia,* Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey (reprinted 1988).

Furlow, J.W. 1969. *Stratigraophy and Economic Geology of the Eastern Chatham County Phosphatic Deposit,* Department of Mines and Mining, Division of Conservation, Georgia Geologic Survey, Bulletin 82.

GA DNR (Georgia Department of Natural Resources) 1976. *Geologic Map of Georgia,* Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey (reprinted 1997).

Herrick, S.M. 1961. *Well Logs of the Coastal Plain of Georgia,* Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey.

Huddlestun, P.F. 1988. *A Revision of the Lithostratigraphic Units of the Coastal Plain of Georgia, The Miocene through Holocene,* Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey, Bulletin 104.

Miller, James A. 1990. *Groundwater Atlas of the United States,* U.S. Department of the Interior, U.S. Geological Survey, Hydrologic Inventory Atlas 730G.

Wilkes, R.L., J.H. Johnson, H.T. Stoner, and D.D. Bacon 1974. *Soil Survey of Bryan and Chatham Counties, Georgia,* U.S. Department of Agriculture Soil Conservation Service.

APPENDIX V

REIMBURSEMENT APPLICATION

Fort Stewart is a federally owned facility and has funded the investigation of the Underground Storage Tanks 25 & 26 Site, Building 1343, Facility ID #9-205008 using U.S. Department of Defense Environmental Restoration Account Funds. Application for Georgia UST Trust Fund reimbursement is not being pursued at this time.

ATTACHMENT A

SUMMARY OF FATE AND TRANSPORT MODELING

A.1. FATE AND TRANSPORT MODELING

In summary, the Analytical Transient 1-, 2-, and 3-Dimentional Model was used to model contaminant migration to a potential downgradient receptor: a drainage ditch located approximately 75 ft southeast of the Underground Storage Tanks 25 & 26 site.

A.1.1 Summary of Corrective Action Plan-Part B Report Fate and Transport Modeling Results

The fate and transport modeling that was conducted as part of the Corrective Action Plan (CAP) Part B Report (SAIC 200) was based on the analytical data collected during the CAP-Parts A and B investigations. The assumption of a continuous source of contamination of indefinite duration at the site was based on the maximum observed benzene concentration in groundwater (i.e., 9,940 µg/L in well AF07) in May 1999. Modeling of leaching to groundwater by percolating rainwater was performed using the water table interface. The predicted leachate concentration was less than the maximum observed benzene concentration, so the steady state model was developed by calibrating the model against the maximum observed benzene concentration of 9,940 µg/L in well AF07. A second F&T model was run for the polycyclic aromatic hydrocarbon constituents based on the maximum observed concentration of naphthalene in groundwater. This modeling was performed to develop alternate concentration limits (ACLs) for the site. Benzene, benzo(*a*)pyrene, and naphthalene were the only constituents at the site that exceeded their In-Stream Water Quality Standards (IWQSs) or risk-based screening levels. Based on the modeling results, the dilution attenuation factor (DAF) for benzene at the drainage ditch was 4.8, and the DAF for naphthalene at the drainage ditch was 3,600. The ACLs associated with the drainage ditch were determined to be

- 340 µg/L for benzene
- 936 µg/L for benzo(a)pyrene
- 23,400 µg/L for naphthalene

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

The F&T modeling was revised as part of the First Annual Monitoring Only Report (SAIC 2001) to reflect the maximum observed benzene concentrations in well AF07. As a result of the benzene concentrations observed during the first year of semiannual monitoring, the F&T modeling results were revised in the First Annual Monitoring Only Report (SAIC 2001) using the highest concentration observed in AF07 in May 1999 (i.e., 9,940 µg/L) and in January 2001 (i.e., 8,450 µg/L) to calibrate the model. The source was assumed to be 20 by 32 ft based on the plume and was calibrated as a 551-mg/hr continuous pulse for 15 years. The hydraulic gradient was 0.027 ft/ft based on the January 2001 potentiometric surface. In the original F&T model, the fractional organic carbon was set to the U.S. Environmental Protection Agency default of 0.002; however, for the revised model, this value was updated to 0.0091, which is the average for several sites located at Hunter Army Airfield. Based on the revised modeling results, the DAF for benzene was 15.1 at the drainage ditch. As a result, the proposed benzene ACL was revised to 1,076 µg/L (i.e., 15.1 x 71.28 µg/L). No revisions were made to the naphthalene F&T model.

A.1.3 Summary of Third Annual Monitoring Only Report Fate and Transport Modeling Results

The F&T modeling was revised as part of the Third Annual Monitoring Only Report (SAIC 2003) to reflect the maximum observed benzene concentrations in well AF-07. The previous F&T model was revised based on the observations from the semiannual groundwater monitoring. It has been observed

that although the concentration in the source (AF-07) has not significantly decreased, the concentrations in the surrounding wells have significantly decreased; therefore, for calibration purposes, the source size was reduced and the degradation rate was increased, whereas source loading was continued with a first-order decay. The source was assumed to be 6 by 12 ft based on the plume and was calibrated as a 15.6-mg/hr source loading. The model calibration was performed by matching the most recent maximum observed benzene concentration in AF-07 (i.e., 5.930 µg/L in January 2003). Based on the revised modeling results, the estimated DAF for benzene at the drainage ditch was 783. The time period necessary to attain a concentration of 71.28 µg/L for benzene through natural attenuation was predicted to be 11 years from January 2003. No revisions were made to the naphthalene F&T model.

The Third Annual Monitoring Only Report, which included the revised ACL proposed in the First Annual Monitoring Only Report, was approved by the Georgia Environmental Protection Division in correspondence dated September 5, 2001.

A.1.4 Fourth Annual Monitoring Only Report Fate and Transport Modeling Results

The F&T modeling was revised as part of the Fourth Annual Monitoring Only Report (SAIC 2004) to reflect the latest site conditions for benzene. The F&T model predictions from the May 2003 model were in agreement with the observed data collected in January 2004; therefore further calibration of the model was not necessary. However, because the hydraulic gradient has slightly changed, the AT123D Model simulations for future predictions were performed using the revised gradient. The source was assumed to be 13 by 7 ft based on the plume and was calibrated as a 15.6-mg/hr source loading. Based on the revised modeling results, the DAF for benzene was 743 at the drainage ditch. The time period necessary to attain a concentration of 71.28 µg/L for benzene through natural attenuation was predicted to be 10 years from January 2004. No revisions were made to the naphthalene F&T model.

A.1.5 Seventh Annual Monitoring Only Report Fate and Transport Modeling Results

The F&T modeling was revised as part of the Seventh Annual Monitoring Only Report, Underground Storage Tanks 25 & 26, Facility ID #9-025008, Building 1343, Hunter Army Airfield, Georgia (SAIC 2007) to reflect the latest site conditions and to take into account the removal action that occurred in April 2006. The removal action performed by CAPE Environmental, Inc., in May 2006 removed the concrete/asphalt from the site. The removal of this material changed the infiltration of rainwater to the subsurface and could have an effect on the leaching of contaminants from the subsurface soils to the groundwater. The source was assumed to be 24 by 3 ft based on the source plume and was calibrated as a 15.6-mg/hr source loading. Based on the revised modeling results, the DAF for benzene was 961 at the drainage ditch. This DAF is higher than previously calculated DAFs and, as such, the ACL was not revised. The time period necessary to attain a concentration of 71.28 ug/L for benzene through natural attenuation was predicted to be 9 years from July 2006.

A.1.6 Eighth Annual Monitoring Only Report Fate and Transport Modeling Results

Analytical results from the October 2007 monitoring indicate the continuous source of benzene may have been removed during the 2007 interim removal action. BTEX constituents were all at concentrations below the IWQS. In April 2008, only the benzene concentration was in excess of the IWQS with a concentration of 140 ug/L. Since the benzene concentration was still less than the approval ACL for this site of 340 ug/L, the Fate and Transport Modeling was not revised.

ATTACHMENT B

REFERENCES

REFERENCES

CAPE (CAPE Environmental, Inc.) 2006. *Final Closure Report, Former 260th Quartermaster Motor Pool, 3rd AVN BDE, Hunter Army Airfield, USTs 25 & 26, Building 1343, 3rd Infantry Division, Fort Stewart, Georgia, August.*

Earth Tech (Earth Tech, Inc.) 1999. *CAP-Part A Report for USTs 25 & 26, Facility ID #9-025008, Building 1343, Hunter Army Airfield, Georgia, March.*

Logan, William E. 2000. Letter to Gregory Stanley (Fort Stewart Directorate of Public Works, Environmental Branch), August 21.

Logan, William E. 2001. Letter to Gregory Stanley (Fort Stewart Directorate of Public Works, Environmental Branch), September 28.

SAIC (Science Applications International Corporation) 2000a. *Corrective Action Plan-Part B, Underground Storage Tanks 25 & 26, Facility ID #9-025008, Building 1343, Hunter Army Airfield, Georgia, Oak Ridge, Tennessee, February.*

SAIC 2000b. *First Semiannual Monitoring Only Report, Underground Storage Tanks 25 & 26, Facility ID #9-025008, Building 1343, Hunter Army Airfield, Georgia, Oak Ridge, Tennessee, November.*

SAIC 2001a. *Corrective Action Plan-Part B, Addendum #1, Underground Storage Tanks 25 & 26, Facility ID #9-025008, Building 1343, Hunter Army Airfield, Georgia, Oak Ridge, Tennessee, June.*

SAIC 2001b. *First Annual Monitoring Only Report, Underground Storage Tanks 25 & 26, Facility ID #9-025008. Building 1343, Hunter Army Airfield, Georgia, Oak Ridge, Tennessee, July.*

SAIC 2001c. *Third Semiannual Monitoring Only Report, Underground Storage Tanks 25 & 26, Facility ID #9-025008, Building 1343, Hunter Army Airfield, Georgia, Oak Ridge, Tennessee, November.*

SAIC 2002. *Second Annual Monitoring Only Report, Underground Storage Tanks 25 & 26, Facility ID #9-025008, Building 1343, Hunter Army Airfield, Georgia, Oak Ridge, Tennessee, July.*

SAIC 2003a. *Third Annual Monitoring Only Report, Underground Storage Tanks 25 % 26, Facility ID #9-035008. Building 1343. Hunter Army Airfield, Georgia, Oak Ridge, Tennessee, July.*

SAIC 2003b. *Corrective Action Plan-Part B, Addendum #2, Underground Storage Tanks 25 & 26, Facility ID #9-035008, Building 1343, Hunter Army Airfield, Georgia, Oak Ridge, Tennessee, April.*

SAIC 2004. *Fourth Annual Monitoring Only Report, Underground Storage Tanks 25 & 26, Facility ID #9-035008, Building 1343, Hunter Army Airfield, Georgia, Oak Ridge, Tennessee, May.*

SAIC 2005. *Fifth Annual Monitoring Only Report, Underground Storage Tanks 25 & 26, Facility ID #9-035008, Building 1343, Hunter Army Airfield, Georgia, Oak Ridge, Tennessee, September.*

SAIC 2007a, *Thirteenth Semiannual Monitoring Only Report, Underground Storage Tanks 25 & 26, Facility ID#9-035008, Building 1343, Hunter Army Airfield, Georgia, January.*

SAIC 2007b, *Seventh Annual Monitoring Only Report, Underground Storage Tanks 25 & 26, Facility ID#9-035008, Building 1343, Hunter Army Airfield, Georgia, Oak Ridge, Tennessee, August.*

SES (SpecPro Environmental Services LLC) 2008, Final Fifteenth *Semiannual Monitoring Only Report, Underground Storage Tanks 25 & 26, Facility ID#9-035008, Building 1343, Hunter Army Airfield, Georgia, April.*

STEP (Solutions to Environmental Problems, Inc.) 2005. *Project Summary for Corrective Action at 260th Quartermaster Motor Pool, Building 1343, USTs 25 & 26, Georgia UST Facility ID #9-035008, Hunter Army Airfield, Savannah, Georgia.*

STEP (Solutions to Environmental Problems, Inc.) 2007. *Interim Removal Activities at the 260th Quartermaster Motor Pool, Building 1343, USTs 25 & 26, Georgia UST Facility ID #9-035008, Hunter Army Airfield, Savannah, Georgia, May*

STEP 2007, *Final Completion Report for Interim Remedial Action at 260th Quartermaster Motor Pool, Building 1343, USTs 25 & 26, Georgia UST Facility ID #9-035008, Hunter Army Airfield, Savannah, Georgia, August.*