

## ***2.0 Summary of Existing Environmental Studies***

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An environmental baseline survey (EBS) was conducted to document current environmental conditions of all FTMC property (ESE, 1998). The study identified sites that, based on available information, have no history of contamination and comply with U.S. Department of Defense (DOD) guidance on fast-track cleanup at closing installations. The EBS also provides a baseline picture of FTMC properties by identifying and categorizing the properties by seven criteria.

1. Areas where no storage, release, or disposal (including migration) has occurred
2. Areas where only release or disposal of petroleum products has occurred
3. Areas of contamination below action levels
4. Areas where all necessary remedial actions have been taken
5. Areas of known contamination with removal and/or remedial action underway
6. Areas of known contamination where required response actions have not been taken
7. Areas that are not evaluated or require further evaluation.

The EBS was conducted in accordance with the Community Environmental Response Facilitation Act (CERFA) (CERFA-Public Law 102-426) protocols and DOD policy regarding contamination assessment. Record searches and reviews were performed on all reasonably available documents from FTMC, ADEM, EPA Region IV, and Calhoun County, as well as a database search of Comprehensive Environmental Response, Compensation, and Liability Act-regulated substances, petroleum products, and Resource Conservation and Recovery Act-regulated facilities. Available historic maps and aerial photographs were reviewed to document historic land uses. Personal and telephone interviews of past and present FTMC employees and military personnel were conducted. In addition, visual site inspections were conducted to verify conditions of specific property parcels.

The Former Chemical Munitions Disposal Area, Parcel 187(7) is identified as a CERFA Category 7 site: areas that are not evaluated or require further evaluation. This CERFA site is a parcel where smoke munitions, fog oil, and other petroleum products were stored, and possibly released onto the site or to the environment, and/or were disposed on site property. Training activities conducted here reportedly included disposal of chemical warfare materials (CWM)

munitions filled with CG, BZ, GB, and HD. The decontaminants STB and DS2 were also used here.

The two square burning pits were repeatedly used in chemical munitions disposal training. Each pit's depth has been assumed to be 6 feet based on standard operating procedures (Roy R. Weston, Inc. [Weston], 1990). Personnel interviewed during the EBS site visit recall the pits measuring approximately 12 feet across and 4 feet deep. Within the pits, military personnel reportedly burned dunnage and then used a shaped charge to blow chemical warfare agent (CWA) from the munition into the fire to destroy the CWA (Toole, 1996). GB was the CWA cited by Mr. Toole as being used during these exercises. After each training exercise, the area was sprayed with STB (ESE, 1984).

Each pit was reportedly filled with soil at closure in 1973. During the closure, soil samples were collected from 3 to 10 centimeters depth (April and July 1973), and results were negative for CWMs in question. However, the depths may not have represented the depths at which the CWM could still be present (ESE, 1984).

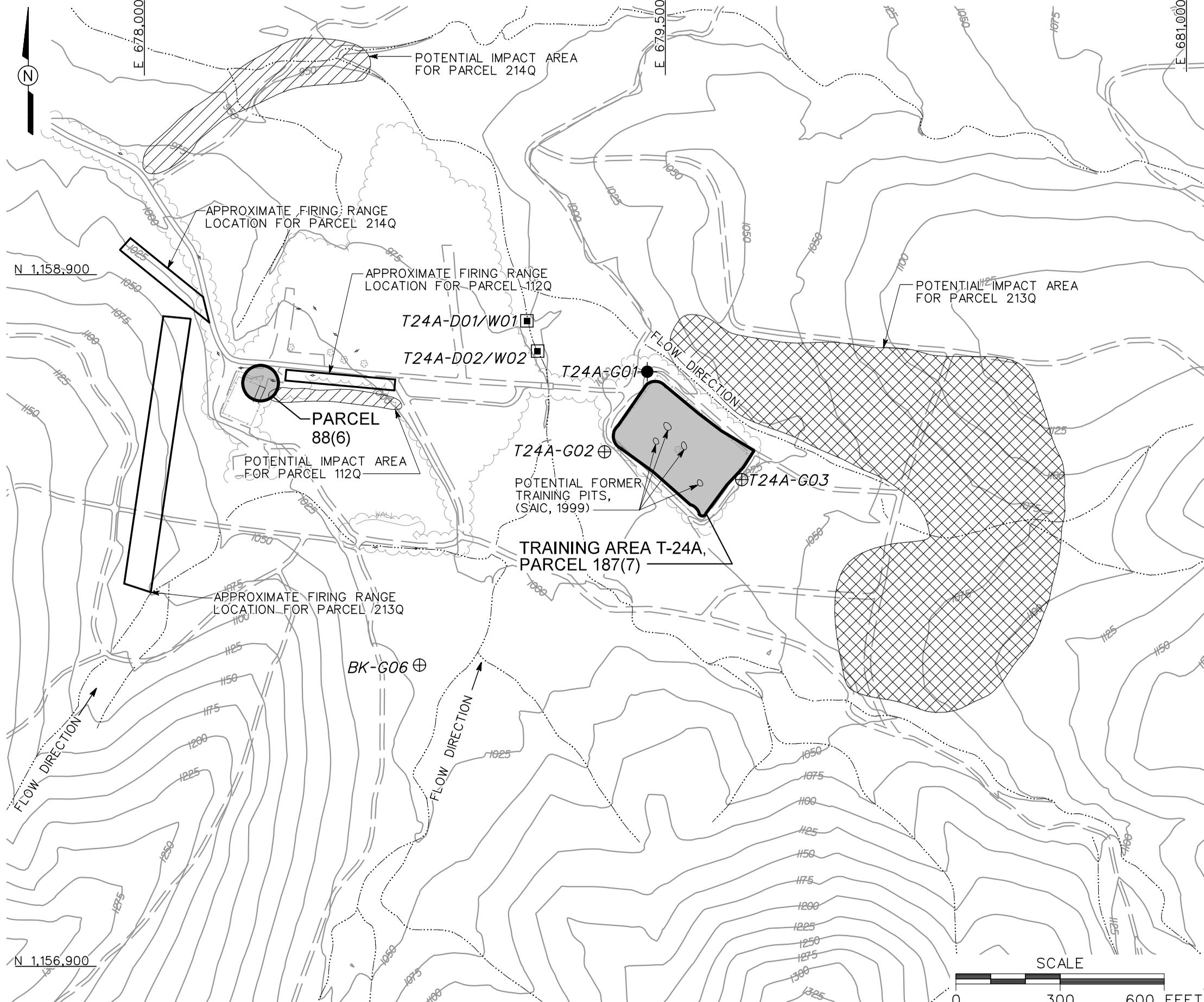
This area may have experienced a large HD spill, according to Weston (Weston, 1990). Investigations during the RI unearthed two fuzed 105 millimeter howitzer rounds, one 155 millimeter howitzer round, four 4.2-inch mortar rounds, and a burster tube located west of a concrete monument. CWM was not present in any of these ordnance items (SAIC, 1995). Geophysical surveys during the RI identified the potential former training pits (Figure 2-1). Numerous smaller anomalies were also identified. Buried ordnance was also identified within the fenced enclosure. Anomalies indicated metallic material buried between 0 and 15 feet-below ground surface (bgs).

An unauthorized dump was reported at western edge of the fence. Materials reportedly disposed of include drums, metal poles, lights, an automobile, and wood. This area requires further evaluation.

Parcel 187(7) lacks adequate documentation and therefore requires additional evaluation to determine the environmental condition of the parcel.

The Former Machine Gun Range, Parcel 112Q, Former Demolition Area, Parcel 113Q-X, Former Bandholtz Machine Gun Qualifying Range, Parcel 213Q, and Former Bandholtz Field Firing Range, Parcel 214Q are identified as CERFA Category 1 sites: areas where no storage,

DWG. NO.: ...796887es.073  
 PROJ. NO.: 796887  
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 STARTING DATE: 05/09/00  
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- LEGEND**
- UNIMPROVED ROADS AND PARKING
  - PAVED ROADS AND PARKING
  - TOPOGRAPHIC CONTOURS (CONTOUR INTERVAL - 25 FOOT)
  - TREES / TREELINE
  - PARCEL BOUNDARY
  - BRIDGE
  - SURFACE DRAINAGE / CREEK
  - FENCE
  - AREAS OF MOUNDS AND TRENCHES
  - AREA OF SURFACE MOUNDS
  - BEDROCK MONITORING WELL LOCATION
  - RESIDUUM MONITORING WELL LOCATION
  - SURFACE WATER/SEDIMENT SAMPLE LOCATION

**FIGURE 2-1**  
 SAMPLE LOCATION MAP  
 SAIC SITE INVESTIGATION/  
 REMEDIAL INVESTIGATION  
 RANGES NEAR TRAINING  
 AREA T-24A  
 PARCELS 187(7), 112Q, 113Q-X, 213Q  
 AND 214Q

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release, or disposal (including migration) has occurred. The environmental or safety concern at these sites is the potential occurrence of lead in environmental media from the use of firearms.

### **2.1 Site Investigation, Former Chemical Munitions Disposal Area, Parcel 187(7)**

During an SI of the Former Chemical Munitions Disposal Area, Parcel 187(7) in 1992, a surface water sample and a sediment sample (T24A-D01/T24A-W01) were collected by U.S. Army Technical Escort Unit from the tributary of South Branch Cane Creek, downgradient of the Former Chemical Munitions Disposal Area (Figure 2-1). The samples were analyzed for HD and GB breakdown products. The sample results did not show the presence of chemical CWM breakdown products (Table 2-1) (SAIC, 1993).

### **2.2 Remedial Investigation, Former Chemical Munitions Disposal Area, Parcel 187(7)**

In 1994, a surface water sample and a sediment sample (T24A-W02/T24A-D02) were again collected from the tributary of South Branch Cane Creek, downgradient of the Former Chemical Munitions Disposal Area (Figure 2-1). These samples were collected as part of a RI of the former Chemical Munitions Disposal Area (SAIC, 1995). These samples were analyzed for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), explosives, metals, and HD and GB CWM breakdown products. The analytical data for these samples did not show the presence of CWM breakdown products. The complete list of analytical results for these samples is contained in Appendix B of this SFSP. The sample results for the surface water sample (T24A-W02) contained trace metals. Low-level metals, including lead and arsenic, and benzyl alcohol (a typical laboratory contaminant), were detected in the sediment sample. These samples did not contain any CWM breakdown products or other organic compounds. A summary of the detected analytes from the analyses of these samples is presented in Table 2-2.

Screening and analysis of soil sample data from within the former Chemical Munitions Disposal Area, Parcel 187(7) during the 1992 SI and the 1994 RI did not detect any chemical agents or CWM breakdown products (SAIC, 1995).

Four monitoring wells were installed around the former Chemical Munitions Disposal Area (Area T24A), Parcel 187(7) (Figure 2-1) in 1994 as part of the RI (SAIC, 1995). Two rounds of groundwater samples were collected from the wells in 1994 and 1995. The groundwater samples were analyzed for VOCs, SVOCs, pesticides/polychlorinated biphenyls (PCB), explosives, metals, and HD, GB, and nerve agent (O-ethyl-S-[diisopropylaminoethyl]-methylphosphothiolate) breakdown products. Well T24A-G01 (redesignated FTA-108-T24A-

**Table 2-1**

**Surface Water and Sediment Sample Data<sup>a</sup>  
 1992 Site Investigation Results  
 Ranges Near Training Area T-24A,  
 Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q  
 Fort McClellan, Calhoun County, Alabama**

**Sample Analysis for Chemical Agent Breakdown Products**

Site ID Site Type Sample Matrix Collection Date		T24A-W01 Creek Water 4/24/1992	T24A-D01 Creek Sediment 4/24/1992	
Parameters	Units			
<u>Method UT02</u>				
Isopropylmethyl phosphonic acid	µg/L	ND(100)	µg/g	ND(2.10)
Methyl phosphonic acid	µg/L	ND(128)	µg/g	ND(2.0)
<u>Method UL04</u>				
1,4-Oxathiane	µg/L	ND(1.98)	µg/g	ND(0.856)
1,4-Dithiane	µg/L	ND(1.11)	µg/g	ND(1.47)
p-Chlorophenylmethylsulfoxide	µg/L	ND(4.23)	µg/g	ND(2.25)
p-Chlorophenylmethylsulfone	µg/L	ND(4.72)	µg/g	ND(2.37)
<u>Method UW22</u>				
Thiodiglycol	µg/L	ND(48.8)	µg/g	ND(3.94)
<u>Method T8</u>				
Diisopropylmethylphosphonate	µg/L	ND(10.5)	µg/g	ND(0.114)
Dimethylmethylphosphonate	µg/L	ND(15.2)	µg/g	ND(0.133)

<sup>a</sup> Science Applications International Corporation (SAIC) 1993, *Site Investigation Report, Fort McClellan, Alabama*, August.

µg/L - Micrograms per liter.

µg/g - Micrograms per gram.

ND - Analyte not detected at the reporting limit in parenthesis (X).

Table 2-2

**Summary of Detected Analytes for Surface Water and Sediment Sample Data<sup>a</sup>  
1994 Remedial Investigation Results  
Ranges Near Training Area T-24A,  
Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q  
Fort McClellan, Calhoun County, Alabama**

Site ID		T24A-W02		T24A-D02	
Field Sample Number		SAIC01		SAIC01	
Site Type		Creek		Creek	
Sample Matrix		Water		Sediment	
Collection Date		6/23/1994		6/19/1994	
Parameters	Units				
Arsenic	µg/L	ND(2.35)	µg/g		5.38
Lead	µg/L	8.82	µg/g		11.6
Aluminum	µg/L	209	µg/g		9810
Barium	µg/L	23.5	µg/g		130
Beryllium	µg/L	1.12	µg/g		0.825
Calcium	µg/L	1900	µg/g		8140
Cobalt	µg/L	ND(16.8)	µg/g		3.77
Chromium	µg/L	ND(25)	µg/g		27
Copper	µg/L	18.8	µg/g		12.1
Iron	µg/L	409	µg/g		50,400
Potassium	µg/L	1890	µg/g		1720
Magnesium	µg/L	1110	µg/g		4950
Manganese	µg/L	19.5	µg/g		521
Sodium	µg/L	1100	µg/g		ND(38.7)
Nickel	µg/L	ND(32.1)	µg/g		6.25
Vanadium	µg/L	ND(27.6)	µg/g		31.8
Zinc	µg/L	ND(18)	µg/g		20.2
Benzyl Alcohol	µg/L	ND(4)	µg/g		0.062

<sup>a</sup>Science Applications International Corporation (SAIC) 1995, *Remedial Investigation Report, Fort McClellan Alabama*, August.

µg/L - micrograms per liter.  
µg/g - Micrograms per gram.

ND - Analyte not detected at the reporting limit in parenthesis (X).  
N/A - not analyzed.

G01 during the subsequent SI at Parcel 108[7]) contained concentrations of benzene (100 to 200 micrograms per liter [ $\mu\text{g/L}$ ]), phenol (57  $\mu\text{g/L}$ ), alpha-betahexachlorocyclohexane (BHC) (0.00424  $\mu\text{g/L}$ ), and pentachlorophenol (1.3 to 2  $\mu\text{g/L}$ ). Concentrations of trace metals and trace pesticides (alpha-BHC, isodrin, lindane, 4,4'-dichlorodiphenyldichloroethene) and the explosive 1,3,5-trinitrobenzene were reported in the groundwater samples; however, confirmation analysis did not confirm the trace concentrations of organics and the values were regarded as non-detected analytes (SAIC, 1995). There were no chemical agents or their breakdown products detected in the monitoring well samples. A summary of the detected analytes from the analyses of these samples is presented in Table 2-3.

### **2.3 Site Investigation, Range 24A Fog Oil Drum Storage Area Parcel 88(6) and Range 24A Multipurpose Range Parcel 108(7)**

IT conducted separate and concurrent SIs at the Range 24A Fog Oil Drum Storage Area, Parcel 88(6), and Range 24A Multipurpose Range, Parcel 108(7) during fall 1999. The area encompassing these parcels overlaps the area of the Ranges Near Training Area T-24A. The SIs were performed under the Baseline Realignment and Closure (BRAC) Environmental Restoration Program. Four surface soil, four subsurface soil, two depositional soil, and four groundwater samples were collected as part of the SI at Parcel 88(6), and four residuum groundwater monitoring wells were installed in conjunction with the SI. Ten surface soil, ten subsurface soil, three depositional soil, fourteen groundwater, three surface water, and three sediment samples were collected as part of the SI at Parcel 108(7), and ten groundwater monitoring wells were installed in conjunction with the SI at Parcel 108(7). Of the 14 groundwater samples collected at Parcel 108(7) in 1999, four samples were collected from existing wells installed by SAIC in 1994 during the RI for the Former Chemical Munitions Disposal Area Parcel 187(7). For the SIs at Parcels 88(6) and 108(7), the existing monitoring wells were designated as follows:

- T24A-G01 redesignated as FTA-108-T24A-G01
- T24A-G02 redesignated as FTA-108-T24A-G02
- T24A-G03 redesignated as FTA-108-T24A-G03
- BK-G06 redesignated as FTA-108-BK-G06.

Sample locations of the Parcel 88(6) and Parcel 108(7) SIs are shown on Figure 2-2.

The analytical results were compared to human health site-specific screening levels (SSSL), ecological screening values (ESV), and background values for FTMC. The SSSLs and ESVs

Table 2-3

**Summary of Detected Analytes for Monitor Wells Sample Data<sup>a</sup>**  
**1994 Remedial Investigation Results**  
**Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q**  
**Fort McClellan, Calhoun County, Alabama**

Site ID (Monitor Well Number)	T24A-G01	T24A-G01	T24A-G01	T24A-G02	T24A-G02	T24A-G03	T24A-G03	BK-G06	BK-G06
Field Sample Number	SAIC01	SAIC03	SAIC04	SAIC03	SAIC04	SAIC01	SAIC03	SAIC01	SAIC03
Laboratory Sample Number	UB06049	UC00382	UC00383	UC00384	UC00899	UB06050	UC00385	UB04884	UC00386
Site Type	Well								
Sample Matrix	Groundwater								
Collection Date	10/23/1994	2/1/1995	2/1/1995	2/2/1995	4/24/1995	10/23/1994	2/1/1995	7/15/1994	2/2/1995
Depth (Feet)	50	50.39	50.39	23.47	28.3	18.5	12.8	17.5	14.5
QC Sample Type	Original	Original	Duplicate	Original	Original	Original	Original	Original	Original
Associated Sample Number	N/A	SAIC04	SAIC03	N/A	N/A	N/A	N/A	N/A	N/A
Parameters	Units								
Lead	µg/L	5.05	ND(4.47)	12.2	ND(4.47)	ND(4.47)	ND(4.47)	ND(4.47)	ND(4.47)
Selenium	µg/L	ND(2.53)	5	3.57	ND(2.53)	ND(2.53)	ND(2.53)	ND(2.53)	ND(2.53)
Thallium	µg/L	10.5	3.69	3.37	ND(2.44)	ND(10)	ND(2.44)	4.2	ND(2.44)
Aluminum	µg/L	4190	158	155	217	1890	2080	1220	5450
Barium	µg/L	114	66	62.2	8.85	25.6	68	40.9	53.1
Beryllium	µg/L	1.49	ND(1.12)	1.63	ND(1.12)	ND(1.12)	ND(1.12)	ND(1.12)	ND(1.12)
Calcium	µg/L	8110	21,200	19,900	1610	1450	776	822	234
Iron	µg/L	23,300	9,410	9180	8650	9850	10,600	10,200	25,800
Potassium	µg/L	3880	8980	8850	1640	1670	ND(1240)	ND(1240)	6280
Magnesium	µg/L	11,700	10,400	10,000	17,900	15,800	7,200	7,190	435
Manganese	µg/L	1550	1130	1100	1690	1530	762	771	59.3
Sodium	µg/L	1860	3380	3200	2030	3220	1150	1280	1370
Zinc	µg/L	76.3	ND(18)	ND(18)	ND(18)	ND(18)	21.9	22.5	25.9
Benzene	µg/L	100	200	200	ND(1)	N/A	ND(1)	ND(1)	ND(1)
bis(2-Ethylhexyl)phthalate	µg/L	19	12	ND(7.7)	ND(7.7)	ND(7.7)	ND(7.7)	14	ND(7.7)
Phenol	µg/L	57	ND(2.2)						
Pentachlorophenol	µg/L	2	ND(1)	ND(1)	ND(1)	ND(1)	1.3	ND(1)	ND(1)
alpha-BHC	µg/L	0.00424	ND(0.0025)						
Isodrin	µg/L	0.0127 U	ND(0.0025)	0.00411 UB	0.00455 UB	0.00317 UB	0.0333 U	0.00358 UB	ND(0.0025)
Lindane	µg/L	0.00432 Q	ND(0.0025)						
4,4'-DDE	µg/L	ND(0.0039)	0.0138 U	0.0122 U	ND(0.0039)	ND(0.0039)	ND(0.0039)	0.00982 U	ND(0.0039)
1,3,5-Trinitrobenzene	µg/L	0.446 U	ND(0.21)	ND(0.21)	0.474 UB	ND(0.21)	0.287 U	0.511 UB	ND(0.21)

<sup>a</sup>Science Applications International Corporation (SAIC) 1995, *Remedial Investigation Report*,

Fort McClellan, Alabama, August

µg/L - Micrograms per liter.

ND - Not detected at the reporting limit in the parenthesis (X).

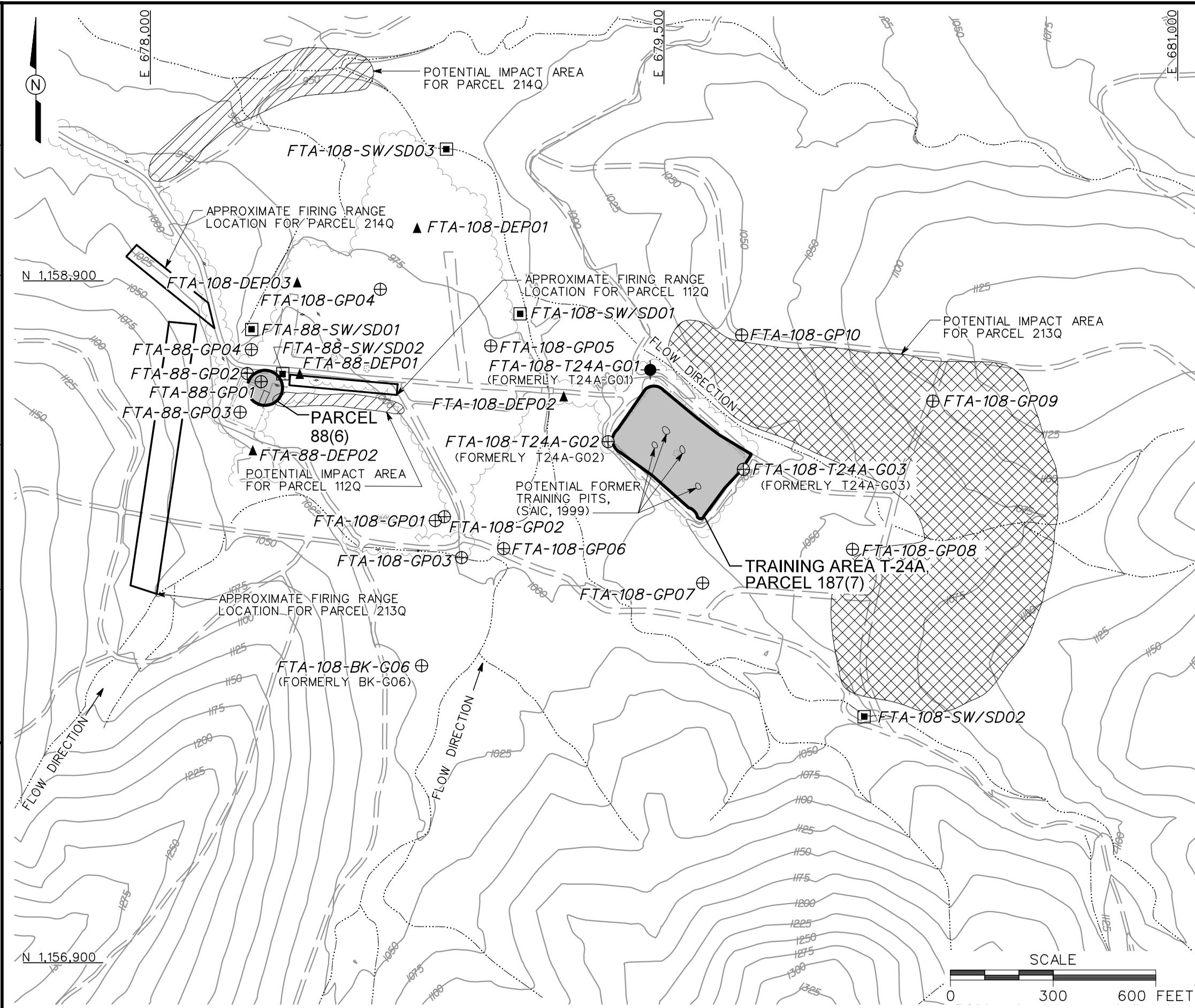
N/A - Analysis not performed or item is not applicable.

U - Analysis is unconfirmed with second column analysis.

B - Analyte also found in the method blank sample or QC blank sample.

Q - Sample interference obscured peak of interest.

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 PROJ. NO.: 796887  
 INITIATOR: J. JENKINS  
 PROJ. MGR.: J. YACOB  
 DRAFT. CHK. BY:  
 ENGR. CHK. BY: J. JENKINS  
 STARTING DATE: 05/09/00  
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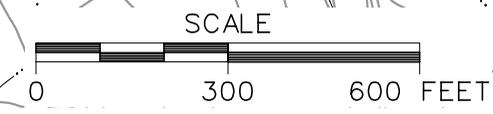


### LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- TOPOGRAPHIC CONTOURS (CONTOUR INTERVAL - 25 FOOT)
- TREES / TREELINE
- PARCEL BOUNDARY
- BRIDGE
- SURFACE DRAINAGE / CREEK
- FENCE
- AREAS OF MOUNDS AND TRENCHES
- AREA OF SURFACE MOUNDS
- BEDROCK MONITORING WELL LOCATION
- RESIDUUM MONITORING WELL LOCATION
- SURFACE WATER/SEDIMENT SAMPLE LOCATION
- DEPOSITIONAL SOIL SAMPLE LOCATION

**FIGURE 2-2**  
**SAMPLE LOCATION MAP**  
 IT SITE INVESTIGATIONS OF  
 PARCELS 88(6) AND 108(7)  
 RANGES NEAR TRAINING  
 AREA T-24A  
 PARCELS 187(7), 112Q, 113Q-X, 213Q  
 AND 214Q

U. S. ARMY CORPS OF ENGINEERS  
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 CALHOUN COUNTY, ALABAMA  
 Contract No. DACA21-96-D-0018



were developed by IT as part of the human health and ecological risk evaluations associated with SIs being performed under the BRAC Environmental Restoration Program at FTMC. The SSSLs and ESVs are presented in the *Final Human Health and Ecological Screening Values and PAH Background Summary Report* (IT, 2000b). Background metals screening values are presented in the background metals survey report (SAIC, 1998). Analytical results of these investigations are summarized in Tables 2-4 through 2-13.

The results of the chemical analyses of samples collected at the Range 24A, Parcels 88(6) and 108(7) indicate that metals, VOCs, SVOCs, and pesticides have been detected in the various site media. To evaluate whether the detected constituents present an unacceptable risk to human health and the environment, detected constituent concentrations were compared to the human health SSSLs and ESVs for FTMC. The SSSLs and ESVs were developed by IT for human health and ecological risk evaluations as part of the ongoing SIs being performed under the BRAC Environmental Restoration Program at FTMC.

Metal concentrations exceeding the SSSLs and ESVs were subsequently compared to background metals screening values (background concentrations) (SAIC, 1998) to determine whether the metals concentrations are within natural background concentrations.

Six compounds were quantified by both SW-846 Method 8260B (as VOC) and Method 8270C (as SVOC), including 1,2,4-trichlorobenzene, 1,4-dichlorobenzene, 1,3-dichlorobenzene, 1,2-dichlorobenzene, hexachlorobutadiene, and naphthalene. Method 8260B yields a reporting limit (RL) of 0.005 milligrams per kilogram (mg/kg), while Method 8270C has a RL of 0.330 mg/kg, which is typical for a soil matrix sample. Due to the direct nature of the Method 8260B analysis and its resulting lower RL, this method is deemed superior to Method 8270C when quantifying low levels (0.005 to 0.330 mg/kg) of these compounds. Method 8270C and its associated methylene chloride extraction step is superior, however when quantifying samples that contain higher concentrations (greater than 0.330 mg/kg) of these compounds. Therefore all data were considered and none were categorically excluded. Data validation qualifiers were used in evaluating the usability of data, primarily where calibration, blank contamination, precision, or accuracy indicator anomalies were encountered. The validation qualifiers and concentrations reported (e.g., whether concentrations were less than or greater than 0.330 mg/kg) were used to determine which analytical method was likely to return the more accurate result. This evaluation was conducted for naphthalene for which results were reported from both methods.

Table 2-4

**Surface and Depositional Soil Analytical Results  
Range 24A Fog Oil Drum Storage, Parcel 88(6)  
Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q  
Fort McClellan, Calhoun County, Alabama**

(Page 1 of 2)

Parcel Sample Location Sample Number Sample Date Sample Depth (Feet)	Units	BKG <sup>a</sup>	Site <sup>b</sup> Specific Screening Levels	Ecological <sup>b</sup> Screening Values	FTA-88-DEP01					FTA-88-DEP02					FTA-88-GP01				
					Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV
<b>METALS</b>																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	5.57E+03				YES	9.89E+03			YES	YES	7.18E+03				YES
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	4.50E+00			YES		3.10E+00			YES		1.02E+01			YES	YES
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	4.06E+01					4.55E+01					3.83E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	3.60E-01	J				4.40E-01	J				ND				
Calcium	mg/kg	1.72E+03			4.27E+02	J				4.34E+02	J				1.19E+03				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.59E+01				YES	1.01E+01				YES	1.09E+02		YES	YES	YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	4.30E+00	J				4.30E+00	J				ND				
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	6.10E+00					6.50E+00					1.33E+01		YES		
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	1.34E+04			YES	YES	1.35E+04			YES	YES	8.15E+04		YES	YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	1.79E+01					2.47E+01					3.00E+01				
Magnesium	mg/kg	1.03E+03		4.40E+05	1.60E+02	J				3.48E+02	J				ND				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	3.22E+02				YES	2.61E+02				YES	2.47E+02				YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	5.80E-02					7.10E-02	B				ND				
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	3.10E+00	J				4.00E+00	J				1.09E+01		YES		
Potassium	mg/kg	8.00E+02			1.66E+02	J				2.28E+02	J				ND				
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	6.30E-01			YES		5.60E-01	J	YES			1.20E+00		YES		YES
Sodium	mg/kg	6.34E+02			8.91E+01	B				4.92E+01	B				ND				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	5.50E-01	B		YES		8.00E-01	B		YES		ND				
Vanadium	mg/kg	5.86E+01	5.31E+01	2.00E+00	1.77E+01				YES	1.86E+01				YES	ND				
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	1.11E+01	J				1.75E+01	J				2.93E+01	B			
<b>SEMIVOLATILE ORGANIC COMPOUNDS</b>																			
bis(2-Ethylhexyl)phthalate	mg/kg		4.52E+01	9.30E-01	ND					ND					ND				
<b>VOLATILE ORGANIC COMPOUNDS</b>																			
2-Butanone	mg/kg		4.66E+03	8.96E+01	ND					ND					3.80E-03	J			
Acetone	mg/kg		7.76E+02	2.50E+00	ND					ND					1.40E+00	J			
Methylene chloride	mg/kg		8.41E+01	2.00E+00	3.60E-03	B				2.80E-02	B				4.50E-03	B			
Naphthalene	mg/kg	3.30E-02	1.55E+02	1.00E-01	ND					ND					ND				
Toluene	mg/kg		1.55E+03	5.00E-02	ND					6.70E-04	J				2.50E-03	J			

Table 2-4

**Surface and Depositional Soil Analytical Results  
Range 24A Fog Oil Drum Storage, Parcel 88(6)  
Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q  
Fort McClellan, Calhoun County, Alabama**

(Page 2 of 2)

Parcel Sample Location Sample Number Sample Date Sample Depth (Feet)	Units	BKG <sup>a</sup>	Site <sup>b</sup> Specific Screening Levels	Ecological <sup>b</sup> Screening Values	FTA-88-GP02					FTA-88-GP03					FTA-88-GP04				
					FTA-88 FR0003 30-Oct-98 0-1					FTA-88 FR0005 14-Sep-99 0-1					FTA-88 FR0007 14-Sep-99 0-1				
Parameter					Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV
<b>METALS</b>																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	6.96E+03				YES	1.06E+04			YES	YES	4.52E+03				YES
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	4.70E+00		YES			3.20E+00			YES		3.30E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	2.61E+01					4.33E+01					1.60E+01	J			
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	7.50E-01					3.90E-01	J				4.20E-01	J			
Calcium	mg/kg	1.72E+03			1.77E+03		YES			1.71E+04		YES			1.46E+03				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.82E+01			YES		1.25E+01			YES		9.30E+00				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	ND					4.60E+00	J				1.80E+00	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	1.43E+01		YES			5.40E+00					6.30E+00				
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	3.10E+04			YES	YES	1.39E+04			YES	YES	1.06E+04			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	7.40E+00					8.40E+00					1.00E+01				
Magnesium	mg/kg	1.03E+03		4.40E+05	8.80E+02					4.21E+03		YES			6.85E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	2.27E+02				YES	3.50E+02				YES	2.41E+01				
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	ND					8.10E-02		YES			1.60E-01		YES		YES
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	5.10E+00					4.80E+00					2.90E+00	J			
Potassium	mg/kg	8.00E+02			1.04E+03		YES			5.54E+02					8.37E+02		YES		
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					5.50E-01	B	YES			6.60E-01	B	YES		
Sodium	mg/kg	6.34E+02			ND					9.80E+01	B				5.76E+01	B			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					4.20E-01	J				ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	ND					2.05E+01				YES	1.24E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	1.48E+01	B				1.71E+01					4.22E+01		YES		
<b>SEMIVOLATILE ORGANIC COMPOUNDS</b>																			
bis(2-Ethylhexyl)phthalate	mg/kg		4.52E+01	9.30E-01	ND					4.30E-02	B				5.90E-02	B			
<b>VOLATILE ORGANIC COMPOUNDS</b>																			
2-Butanone	mg/kg		4.66E+03	8.96E+01	2.90E-03	J				8.00E-03	J				ND				
Acetone	mg/kg		7.78E+02	2.50E+00	4.20E-02	B				5.10E-02	J				ND				
Methylene chloride	mg/kg		8.41E+01	2.00E+00	3.40E-03	B				4.30E-03	B				3.90E-03	B			
Naphthalene	mg/kg	3.30E-02	1.55E+02	1.00E-01	ND					1.10E-03	J				ND				
Toluene	mg/kg		1.55E+03	5.00E-02	ND					ND					ND				

Analyses performed by Quanterra Environmental Services using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods, including Update III where applicable

a Bkg - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in Science Applications International Corp. (1998, *Final Background Metals Survey Report, Fort McClellan, Alabama*. July.)

b Residential human health site-specific screening level (SSSL) and ecological screening value (ESV) as given in IT Corporation (2000). *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama*, July.

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit (and greater than zero).

J - Result is greater than stated method detection limit but less than or equal to specified reporting limit.

mg/kg - Milligrams per kilogram

NA - Not available

ND - not detected

Qual - Data validation qualifier

Table 2-5

**Surface and Depositional Soil Analytical Results  
Range 24A Multi-Purpose Range, Parcel 108(7)  
Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q  
Fort McClellan, Calhoun County, Alabama**

(Page 1 of 4)

Sample Location Parcel Sample Number Sample Date Sample Depth (Feet)	Units	BKG <sup>a</sup>	SSSL <sup>b</sup>	ESV <sup>c</sup>	FTA-108-DEP01 FTA-108 FT0025 30-Sep-99 0-.5					FTA-108-DEP02 FTA-108 FT0026 30-Sep-99 0-.25					FTA-108-DEP03 FTA-108 FT0027 30-Sep-99 0-.25					FTA-108-GP01 FTA-108 FT0001 30-Oct-98 0-1				
					Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV
<b>PESTICIDES</b>																								
4,4-DDE	mg/kg		1.79E+00	2.50E-03	ND					ND					ND					ND				
Endrin aldehyde	mg/kg		2.32E-01	1.05E-02	ND					ND					1.00E-03	J				ND				
Endrin ketone	mg/kg		2.32E-01	1.05E-02	ND					ND					1.30E-03	J				ND				
<b>METALS</b>																								
Aluminum	mg/kg	1.83E+04	7.80E+03	5.00E+01	6.81E+03			YES	YES	5.95E+03			YES	YES	1.54E+04			YES	YES	1.87E+04	YES			
Arsenic	mg/kg	1.37E+01	4.28E-01	1.00E+01	3.30E+00			YES		3.30E+00			YES		4.20E+00			YES		4.00E+00	YES			
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	2.74E+01					8.20E+01					4.84E+01					3.60E+01	J			
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	5.50E-01	J				6.10E-01					3.30E-01	J				ND				
Calcium	mg/kg	1.72E+03			7.88E+01	B				7.55E+02					1.98E+03		YES			3.58E+03	YES			
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.76E+01			YES		9.80E+00			YES		1.77E+01			YES		1.39E+01	YES			
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	3.00E+00	J				1.09E+01					2.10E+00	J				ND				
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	1.04E+01					2.72E+01	YES				6.80E+00					9.00E+00				
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	2.41E+04		YES	YES	YES	2.01E+04		YES	YES	YES	1.85E+04			YES	YES	1.75E+04	YES			
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	5.80E+00					5.63E+01	YES		YES	YES	7.80E+00					7.00E+00				
Magnesium	mg/kg	1.03E+03		4.40E+05	1.68E+02	J				4.37E+02	J				7.78E+02					2.35E+03	YES			
Manganese	mg/kg	1.58E+03	3.83E+02	1.00E+02	1.83E+02		YES	YES	YES	4.14E+02		YES	YES	YES	6.52E+01					4.88E+01	J			
Mercury	mg/kg	8.00E-02	2.39E+00	1.00E-01	4.10E-02	B				4.50E-02	B				9.90E-02	B	YES			4.80E-02				
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	4.10E+00	J				1.04E+01	YES				3.90E+00	J				5.20E+00				
Potassium	mg/kg	8.00E+02			4.65E+02	J				1.44E+03	YES				3.74E+02	J				ND				
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND					ND					ND				
Sodium	mg/kg	8.34E+02			5.01E+01	B				5.44E+01	B				2.29E+02	B				ND				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	2.27E+01			YES	YES	1.13E+01			YES	YES	2.95E+01			YES	YES	1.08E+01	YES			
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	4.43E+01		YES			5.78E+01	YES	YES	YES	YES	2.20E+01					1.98E+01	B			
<b>SEMIVOLATILE ORGANIC COMPOUNDS</b>																								
Butyl benzyl phthalate	mg/kg		1.58E+03	2.40E-01	ND					ND					ND					ND				
bis(2-Ethylhexyl)phthalate	mg/kg		4.52E+01	9.30E-01	1.30E-01	B				1.60E-01	B				ND					ND				
<b>VOLATILE ORGANIC COMPOUNDS</b>																								
1,2,4-Trimethylbenzene	mg/kg		3.88E+02	1.00E-01	ND					ND					ND					ND				
2-Butanone	mg/kg		4.68E+03	8.98E+01	ND					ND					ND					ND				
Acetone	mg/kg		7.76E+02	2.50E+00	ND					ND					ND					1.50E-02	B			
Bromomethane	mg/kg		1.09E+01		ND					ND					ND					ND				
Ethylbenzene	mg/kg		7.77E+02	5.00E-02	ND					ND					ND					ND				
Methylene chloride	mg/kg		8.41E+01	2.00E+00	4.00E-03	B				3.80E-03	B				3.20E-03	B				2.50E-03	B			
Styrene	mg/kg		1.55E+03	1.00E-01	ND					ND					ND					ND				
Toluene	mg/kg		1.55E+03	5.00E-02	ND					ND					ND					ND				
Trichlorofluoromethane	mg/kg		2.33E+03	1.00E-01	ND					ND					ND					ND				
cis-1,2-Dichloroethene	mg/kg		7.77E+01	1.00E-01	ND					ND					ND					ND				
p-Cymene	mg/kg		1.55E+03		ND					ND					ND					ND				

Table 2-5

**Surface and Depositional Soil Analytical Results  
Range 24A Multi-Purpose Range, Parcel 108(7)  
Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q  
Fort McClellan, Calhoun County, Alabama**

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Sample Location		FTA-108-GP02					FTA-108-GP03					FTA-108-GP04							
Parcel		FTA-108					FTA-108					FTA-108							
Sample Number		FT0005					FT0008					FT0011							
Sample Date		30-Oct-98					30-Oct-98					3-Nov-98							
Sample Depth (Feet)		0-1					0-1					0-1							
Parameter	Units	BKG <sup>a</sup>	SSSL <sup>b</sup>	ESV <sup>b</sup>	Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV
<b>PESTICIDES</b>																			
4,4'-DDE	mg/kg		1.79E+00	2.50E-03	ND					ND					ND				
Endrin aldehyde	mg/kg		2.32E-01	1.05E-02	ND					ND					ND				
Endrin ketone	mg/kg		2.32E-01	1.05E-02	ND					ND					ND				
<b>METALS</b>																			
Aluminum	mg/kg	1.83E+04	7.80E+03	5.00E+01	7.60E+03			YES		9.63E+03			YES	YES	1.18E+04			YES	YES
Arsenic	mg/kg	1.37E+01	4.28E-01	1.00E+01	4.70E+00		YES			3.40E+00			YES		3.80E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	ND					7.65E+01	J				1.02E+02	J			
Beryllium	mg/kg	8.00E-01	8.60E+00	1.10E+00	ND					5.60E-01					1.00E+00		YES		
Calcium	mg/kg	1.72E+03			7.41E+02					7.48E+03		YES			ND				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.35E+01		YES			1.26E+01				YES	1.62E+01				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	ND					ND					7.00E+00				
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	4.20E+00					6.30E+00					1.42E+02		YES		YES
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	1.32E+04		YES	YES		1.61E+04			YES	YES	2.65E+04			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	7.40E+00					1.00E+01					1.78E+01				
Magnesium	mg/kg	1.03E+03		4.40E+05	ND					3.93E+03		YES			ND				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	2.47E+02	J		YES		3.93E+02	J		YES	YES	1.01E+03	J		YES	YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	3.90E-02					3.80E-02					4.60E-02				
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	ND					4.70E+00					6.20E+00				
Potassium	mg/kg	8.00E+02			ND					6.54E+02					ND				
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND					7.10E-01		YES		
Sodium	mg/kg	6.34E+02			ND					ND					ND				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	1.78E+01		YES			9.20E+00			YES		8.00E+00				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	8.40E+00	B				3.45E+01					2.40E+02		YES		YES
<b>SEMIVOLATILE ORGANIC COMPOUNDS</b>																			
Butyl benzyl phthalate	mg/kg		1.56E+03	2.40E-01	ND					ND					ND				
bis(2-Ethylhexyl)phthalate	mg/kg		4.52E+01	9.30E-01	ND					ND					ND				
<b>VOLATILE ORGANIC COMPOUNDS</b>																			
1,2,4-Trimethylbenzene	mg/kg		3.88E+02	1.00E-01	ND					ND					3.50E-03	J			
2-Butanone	mg/kg		4.68E+03	8.96E+01	5.50E-03	J				6.80E-03	J				8.80E-03	B			
Acetone	mg/kg		7.78E+02	2.50E+00	9.30E-02	J				1.20E-01	J				1.20E-01	J			
Bromomethane	mg/kg		1.09E+01		ND					ND					ND				
Ethylbenzene	mg/kg		7.77E+02	5.00E-02	ND					ND					ND				
Methylene chloride	mg/kg		8.41E+01	2.00E+00	2.90E-03	B				4.80E-03	B				4.60E-03	B			
Styrene	mg/kg		1.55E+03	1.00E-01	ND					ND					ND				
Toluene	mg/kg		1.55E+03	5.00E-02	ND					3.10E-03	J				2.30E-03	J			
Trichlorofluoromethane	mg/kg		2.33E+03	1.00E-01	ND					ND					ND				
cis-1,2-Dichloroethane	mg/kg		7.77E+01	1.00E-01	ND					ND					ND				
p-Cymene	mg/kg		1.55E+03		ND					4.50E-03	J				ND				

Table 2-5

**Surface and Depositional Soil Analytical Results  
Range 24A Multi-Purpose Range, Parcel 108(7)  
Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q  
Fort McClellan, Calhoun County, Alabama**

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Sample Location Parcel					FTA-108-GP05 FTA-108 FT0013 3-Nov-98 0-1					FTA-108-GP06 FTA-108 FT0015 13-Sep-99 0-1					FTA-108-GP07 FTA-108 FT0017 13-Sep-99 0-1				
Sample Number					Result					Result					Result				
Sample Date					Qual					Qual					Qual				
Sample Depth (Feet)					>BKG >SSSL >ESV					>BKG >SSSL >ESV					>BKG >SSSL >ESV				
Parameter	Units	BKG <sup>a</sup>	SSSL <sup>b</sup>	ESV <sup>c</sup>	Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV
<b>PESTICIDES</b>																			
4,4'-DDE	mg/kg		1.79E+00	2.50E-03	ND					ND					7.00E-04	J			
Endrin aldehyde	mg/kg		2.32E-01	1.05E-02	ND					ND					ND				
Endrin ketone	mg/kg		2.32E-01	1.05E-02	ND					ND					ND				
<b>METALS</b>																			
Aluminum	mg/kg	1.83E+04	7.80E+03	5.00E+01	1.28E+04		YES	YES		7.81E+03			YES	YES	7.72E+03				YES
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	3.40E+00				YES	3.10E+00			YES		1.80E+00				YES
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	7.28E+01	J				2.00E+02		YES		YES	8.55E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	1.10E+00		YES		YES	1.00E+00		YES			5.50E-01	J			
Calcium	mg/kg	1.72E+03			ND					7.18E+02					1.44E+02	J			
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.87E+01				YES	7.10E+00	J			YES	6.50E+00	J			YES
Cobalt	mg/kg	1.52E+01	4.88E+02	2.00E+01	7.80E+00					8.90E+00					4.70E+00	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	2.73E+01		YES			7.90E+00	J				2.24E+01	J	YES		
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	2.60E+04			YES	YES	1.40E+04			YES	YES	1.02E+04			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	9.70E+00					2.62E+01					1.89E+02		YES		YES
Magnesium	mg/kg	1.03E+03		4.40E+05	ND					4.62E+02	J				4.02E+02	J			
Manganese	mg/kg	1.58E+03	3.83E+02	1.00E+02	8.74E+02	J		YES	YES	8.13E+02			YES	YES	8.23E+01				
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	ND					5.00E-02					5.50E-02				
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	8.80E+00					6.50E+00					4.80E+00				
Potassium	mg/kg	8.00E+02			ND					1.98E+03		YES			1.12E+03		YES		
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	6.60E-01		YES			1.00E+00	B	YES		YES	1.20E+00	B	YES		YES
Sodium	mg/kg	8.34E+02			ND					5.46E+01	B				5.05E+01	B			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					9.10E-01	J		YES		ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	8.90E+00				YES	1.10E+01				YES	1.00E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	6.55E+01		YES		YES	2.76E+01					1.93E+01				
<b>SEMIVOLATILE ORGANIC COMPOUNDS</b>																			
Butyl benzyl phthalate	mg/kg		1.56E+03	2.40E-01	ND					ND					4.20E-02	J			
bis(2-Ethylhexyl)phthalate	mg/kg		4.52E+01	9.30E-01	ND					4.90E-01	B				8.10E-01	B			
<b>VOLATILE ORGANIC COMPOUNDS</b>																			
1,2,4-Trimethylbenzene	mg/kg		3.88E+02	1.00E-01	ND					ND					ND				
2-Butanone	mg/kg		4.66E+03	8.98E+01	1.10E-02	B				ND					8.00E-03	J			
Acetone	mg/kg		7.76E+02	2.50E+00	9.90E-02	J				8.80E-02	J				1.40E-01	J			
Bromomethane	mg/kg		1.09E+01		3.40E-03	J				ND					ND				
Ethylbenzene	mg/kg		7.77E+02	5.00E-02	ND					ND					ND				
Methylene chloride	mg/kg		8.41E+01	2.00E+00	4.40E-03	B				6.90E-03	B				5.40E-03	B			
Styrene	mg/kg		1.55E+03	1.00E-01	ND					ND					8.90E-04	J			
Toluene	mg/kg		1.55E+03	5.00E-02	2.10E-03	J				9.90E-04	J				1.30E-03	J			
Trichlorofluoromethane	mg/kg		2.33E+03	1.00E-01	ND					ND					ND				
cis-1,2-Dichloroethene	mg/kg		7.77E+01	1.00E-01	ND					ND					ND				
p-Cymene	mg/kg		1.55E+03		ND					1.80E-03	J				1.80E-02	J			

Table 2-5

**Surface and Depositional Soil Analytical Results  
Range 24A Multi-Purpose Range, Parcel 108(7)  
Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q  
Fort McClellan, Calhoun County, Alabama**

(Page 4 of 4)

Sample Location		FTA-108-GP08					FTA-108-GP09					FTA-108-GP10							
Parcel		FTA-108					FTA-108					FTA-108							
Sample Number		FT0019					FT0021					FT0023							
Sample Date		14-Sep-99					13-Sep-99					2-Nov-98							
Sample Depth (Feet)		0-1					0-1					0-1							
Parameter	Units	BKG <sup>a</sup>	SSSL <sup>b</sup>	ESV <sup>b</sup>	Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV
<b>PESTICIDES</b>																			
4,4'-DDE	mg/kg		1.79E+00	2.50E-03	ND					ND					ND				
Endrin aldehyde	mg/kg		2.32E-01	1.05E-02	ND					ND					ND				
Endrin ketone	mg/kg		2.32E-01	1.05E-02	ND					ND					ND				
<b>METALS</b>																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	1.28E+04		YES	YES		9.27E+03		YES	YES		8.69E+03		YES	YES	
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	3.30E+00		YES			4.00E+00		YES			2.50E+00		YES		
Barium	mg/kg	1.24E+02	5.47E+02	1.85E+02	1.08E+02					5.32E+01					1.14E+02	J			
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	8.40E-01					5.20E-01	J				7.40E-01				
Calcium	mg/kg	1.72E+03			2.15E+02	J				4.07E+02	J				ND				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	9.10E+00	J			YES	7.40E+00	J			YES	1.34E+01				YES
Cobalt	mg/kg	1.52E+01	4.88E+02	2.00E+01	4.00E+00	J				1.60E+00	J				1.11E+01				
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	6.02E+01	J	YES		YES	6.50E+00	J				4.14E+01		YES	YES	
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	1.36E+04			YES	YES	1.12E+04		YES	YES		2.14E+04		YES	YES	
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	2.91E+02		YES		YES	2.93E+01					1.82E+02		YES	YES	
Magnesium	mg/kg	1.03E+03		4.40E+05	4.64E+02	J				3.52E+02	J				6.86E+02				
Manganese	mg/kg	1.58E+03	3.83E+02	1.00E+02	2.55E+02			YES		1.16E+02			YES		2.40E+02	J			YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	5.20E-02					3.40E-02	J				ND				
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	4.10E+00	J				2.60E+00	J				1.36E+01	J	YES		
Potassium	mg/kg	8.00E+02			1.00E+03		YES			1.94E+03		YES			ND				
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	9.10E-01	B	YES		YES	1.00E+00	B	YES		YES	7.90E-01		YES		
Sodium	mg/kg	8.34E+02			4.56E+01	B				5.44E+01	B				ND				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	1.50E+01			YES		1.42E+01			YES		ND				
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	2.13E+01					1.06E+01					5.13E+01		YES		YES
<b>SEMIVOLATILE ORGANIC COMPOUNDS</b>																			
Butyl benzyl phthalate	mg/kg		1.58E+03	2.40E-01	ND					ND					ND				
bis(2-Ethylhexyl)phthalate	mg/kg		4.52E+01	9.30E-01	4.60E-02	B				4.90E-01	B				6.00E-02	J			
<b>VOLATILE ORGANIC COMPOUNDS</b>																			
1,2,4-Trimethylbenzene	mg/kg		3.88E+02	1.00E-01	ND					ND					ND				
2-Butanone	mg/kg		4.68E+03	8.96E+01	ND					5.70E-03	J				6.50E-03	B			
Acetone	mg/kg		7.76E+02	2.50E+00	9.30E-02	B				8.50E-02	J				5.60E-02	B			
Bromomethane	mg/kg		1.09E+01		ND					ND					ND				
Ethylbenzene	mg/kg		7.77E+02	5.00E-02	ND					ND					7.00E-03	J			
Methylene chloride	mg/kg		8.41E+01	2.00E+00	3.40E-03	B				6.50E-03	B				4.60E-03	B			
Styrene	mg/kg		1.55E+03	1.00E-01	ND					ND					ND				
Toluene	mg/kg		1.55E+03	5.00E-02	8.90E-04	J				9.10E-04	J				3.30E-03	J			
Trichlorofluoromethane	mg/kg		2.33E+03	1.00E-01	2.80E-03	J				ND					ND				
cis-1,2-Dichloroethene	mg/kg		7.77E+01	1.00E-01	ND					ND					8.30E-03	J			
p-Cymene	mg/kg		1.55E+03		ND					1.30E-03	J				ND				

Analyses performed by Quanterra Environmental Services using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods, including Update III where applicable

- a Bkg - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in Science Applications International Corp. (1998, Final Background Metals Survey Report, Fort McClellan, Alabama, July.
- b Residential human health site-specific screening level (SSSL) and ecological screening value (ESV) as given in IT Corporation (2000). Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama, July.

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit (and greater than zero).

J - Result is greater than stated method detection limit but less than or equal to specified reporting limit.

mg/kg - Milligrams per kilogram

NA - Not available

ND - not detected

Qual - Data validation qualifier

Table 2-6

**Subsurface Soil Analytical Results  
Range 24A Fog Oil Drum Storage, Parcel 88(6)  
Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q  
Fort McClellan, Calhoun County, Alabama**

Sample Location Parcel Sample Number Sample Date Sample Depth (Feet)	Parameter	Units	FTA-88-GP01 FTA-88 FR0002 30-Oct-98 4.0-5.0				FTA-88-GP02 FTA-88 FR0004 30-Oct-98 6.0-8.0				FTA-88-GP03 FTA-88 FR0006 14-Sep-99 4.0-6.0				FTA-88-GP04 FTA-88 FR0010 14-Sep-99 4.0-6.0				
			BKG <sup>a</sup>	SSSL <sup>b</sup>	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG
<b>METALS</b>																			
Aluminum	mg/kg	1.36E+04	7.80E+03	2.55E+03				7.89E+03			YES	7.84E+03			YES	9.52E+03			YES
Arsenic	mg/kg	1.83E+01	4.26E-01	2.40E+00			YES	2.30E+00			YES	9.30E+00			YES	3.60E+00			YES
Barium	mg/kg	2.34E+02	5.47E+02	ND				ND				2.48E+01				4.27E+01			
Beryllium	mg/kg	8.60E-01	9.60E+00	ND				ND				9.30E-01	YES			5.40E-01	J		
Calcium	mg/kg	6.37E+02		ND				ND				1.44E+02	J			1.06E+03		YES	
Chromium	mg/kg	3.83E+01	2.32E+01	8.80E+00				8.20E+00				2.02E+01				1.08E+01			
Cobalt	mg/kg	1.75E+01	4.68E+02	ND				ND				4.80E+00	J			4.10E+00	J		
Copper	mg/kg	1.94E+01	3.13E+02	4.00E+00				5.30E+00				1.66E+01				6.20E+00			
Iron	mg/kg	4.48E+04	2.34E+03	1.24E+04			YES	1.20E+04			YES	6.49E+04	YES	YES	YES	1.43E+04			YES
Lead	mg/kg	3.85E+01	4.00E+02	5.00E+00				5.90E+00				4.20E+00				1.56E+01			
Magnesium	mg/kg	7.66E+02		ND				ND				1.83E+02	J			3.42E+02	J		
Manganese	mg/kg	1.36E+03	3.63E+02	1.23E+02				5.32E+01				8.25E+01				1.70E+02			
Mercury	mg/kg	7.00E-02	2.33E+00	ND				ND				2.20E-02	B			6.10E-02			
Nickel	mg/kg	1.29E+01	1.54E+02	ND				ND				4.70E+00	J			4.20E+00	J		
Potassium	mg/kg	7.11E+02		ND				ND				2.21E+03		YES		3.56E+02	J		
Selenium	mg/kg	4.70E-01	3.91E+01	ND				ND				1.80E+00	B	YES		7.60E-01	B	YES	
Sodium	mg/kg	7.02E+02		ND				ND				6.53E+01	B			5.01E+01	B		
Vanadium	mg/kg	6.49E+01	5.31E+01	ND				7.50E+00				2.90E+01				2.06E+01			
Zinc	mg/kg	3.49E+01	2.34E+03	6.20E+00	B			8.90E+00	B			1.35E+01				1.52E+01			
<b>SEMIVOLATILE ORGANIC COMPOUNDS</b>																			
bis(2-Ethylhexyl)phthalate	mg/kg		4.52E+01	ND				ND				4.90E-02	B			5.80E-02	B		
<b>VOLATILE ORGANIC COMPOUNDS</b>																			
2-Butanone	mg/kg		4.66E+03	6.70E-03	J			ND				ND				ND			
Acetone	mg/kg		7.76E+02	4.00E-01	J			9.70E-03	B			1.00E-02	B			1.30E-02	B		
Bromomethane	mg/kg		1.09E+01	1.50E-03	J			ND				ND				ND			
Methylene chloride	mg/kg		8.41E+01	2.90E-03	B			2.50E-03	B			5.60E-03	B			4.70E-03	B		

Analyses performed by Quanterra Environmental Services using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods, including Update III where applicable

a Bkg - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in Science Applications International Corp. (1998, *Final Background Metals Survey Report, Fort McClellan, Alabama*, July.

b Residential human health site-specific screening level (SSSL) and ecological screening value (ESV) as given in IT Corporation (2000). *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama*, July.

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit (and greater than zero).

J - Result is greater than stated method detection limit but less than or equal to specified reporting limit.

mg/kg - Milligrams per kilogram

NA - Not available

ND - not detected

Qual - Data validation qualifier

Table 2-7

**Subsurface Soil Analytical Results**  
**Range 24A Multi-Purpose Range, Parcel 108(7)**  
**Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q**  
**Fort McClellan, Calhoun County, Alabama**

(Page 1 of 3)

Parcel Sample Location Sample Number Sample Date Sample Depth (Feet)	Units	BKG <sup>a</sup>	Site <sup>b</sup> Specific Screening Levels	FTA-108-GP01 FTA-108 FT0004 30-Oct-98 1.0-2.0				FTA-108-GP02 FTA-108 FT0008 30-Oct-98 1.0 - 3.0				FTA-108-GP03 FTA-108 FT0010 30-Oct-98 1.0 - 3.0			
				Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL
<b>METALS</b>															
Aluminum	mg/kg	1.36E+04	7.80E+03	1.45E+04		YES	YES	1.15E+04			YES	6.50E+03			
Arsenic	mg/kg	1.83E+01	4.26E-01	4.30E+00			YES	4.40E+00			YES	3.30E+00		YES	
Barium	mg/kg	2.34E+02	5.47E+02	3.19E+01	J			4.60E+01	J			1.08E+02	J		
Beryllium	mg/kg	8.60E-01	9.60E+00	ND				ND				6.50E-01			
Calcium	mg/kg	6.37E+02		1.71E+03		YES		ND				8.44E+03		YES	
Chromium	mg/kg	3.83E+01	2.32E+01	1.36E+01				1.48E+01				1.33E+01			
Cobalt	mg/kg	1.75E+01	4.68E+02	ND				ND				6.00E+00			
Copper	mg/kg	1.94E+01	3.13E+02	8.10E+00				6.60E+00				7.00E+00			
Iron	mg/kg	4.48E+04	2.34E+03	1.82E+04			YES	2.08E+04			YES	1.85E+04		YES	
Lead	mg/kg	3.85E+01	4.00E+02	6.60E+00				7.80E+00				7.70E+00			
Magnesium	mg/kg	7.66E+02		1.26E+03		YES		ND				4.79E+03		YES	
Manganese	mg/kg	1.36E+03	3.63E+02	4.87E+01	J			1.55E+02	J			3.48E+02	J		
Mercury	mg/kg	7.00E-02	2.33E+00	5.30E-02				4.10E-02				ND			
Nickel	mg/kg	1.29E+01	1.54E+02	5.20E+00				4.80E+00				ND			
Potassium	mg/kg	7.11E+02		6.19E+02				ND				9.92E+02		YES	
Selenium	mg/kg	4.70E-01	3.91E+01	ND				6.20E-01		YES		ND			
Sodium	mg/kg	7.02E+02		ND				ND				ND			
Thallium	mg/kg	1.40E+00	5.08E-01	ND				ND				ND			
Vanadium	mg/kg	6.49E+01	5.31E+01	7.80E+00				1.17E+01				ND			
Zinc	mg/kg	3.49E+01	2.34E+03	1.69E+01	B			1.59E+01	B			1.70E+01	B		
<b>SEMIVOLATILE ORGANIC COMPOUNDS</b>															
Diethyl phthalate	mg/kg		6.23E+03	ND				ND				ND			
bis(2-Ethylhexyl)phthalate	mg/kg		4.52E+01	ND				ND				ND			
<b>VOLATILE ORGANIC COMPOUNDS</b>															
2-Butanone	mg/kg		4.66E+03	ND				ND				9.30E-03	J		
Acetone	mg/kg		7.76E+02	7.50E-02	J			4.70E-01	J			8.40E-01	J		
Methylene chloride	mg/kg		8.41E+01	2.00E-03	B			4.00E-03	B			3.30E-03	B		
Styrene	mg/kg		1.55E+03	ND				ND				ND			
Toluene	mg/kg		1.55E+03	ND				ND				ND			
Trichlorofluoromethane	mg/kg		2.33E+03	ND				ND				ND			

Table 2-7

**Subsurface Soil Analytical Results**  
**Range 24A Multi-Purpose Range, Parcel 108(7)**  
**Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q**  
**Fort McClellan, Calhoun County, Alabama**

(Page 2 of 3)

Parcel Sample Location Sample Number Sample Date Sample Depth (Feet)	Units	BKG <sup>1</sup>	Site <sup>b</sup> Specific Screening Levels	FTA-108-GP04 FTA-108 FT0012 3-Nov-98 5.0-7.0				FTA-108-GP05 FTA-108 FT0014 2-Nov-98 7.0-9.0				FTA-108-GP06 FTA-108 FT0016 13-Sep-99 1.0-3.0			
				Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL
<b>METALS</b>															
Aluminum	mg/kg	1.36E+04	7.80E+03	9.07E+03			YES	5.11E+03				6.25E+03			
Arsenic	mg/kg	1.83E+01	4.26E-01	4.60E+00			YES	1.14E+01			YES	3.00E+00		YES	
Barium	mg/kg	2.34E+02	5.47E+02	3.99E+01	J			3.98E+01	J			1.47E+02			
Beryllium	mg/kg	8.60E-01	9.60E+00	ND				2.20E+00		YES		8.60E-01		YES	
Calcium	mg/kg	6.37E+02		ND				ND				2.85E+02	J		
Chromium	mg/kg	3.83E+01	2.32E+01	2.03E+01				1.40E+01				9.10E+00	J		
Cobalt	mg/kg	1.75E+01	4.68E+02	ND				1.07E+01				6.20E+00			
Copper	mg/kg	1.94E+01	3.13E+02	1.84E+01				3.68E+01		YES		6.30E+00	J		
Iron	mg/kg	4.48E+04	2.34E+03	3.00E+04			YES	7.54E+04		YES	YES	1.40E+04		YES	
Lead	mg/kg	3.85E+01	4.00E+02	7.00E+00				5.80E+00				1.26E+01			
Magnesium	mg/kg	7.66E+02		ND				ND				3.07E+02	J		
Manganese	mg/kg	1.36E+03	3.63E+02	2.25E+02	J			2.20E+02	J			5.76E+02		YES	
Mercury	mg/kg	7.00E-02	2.33E+00	ND				ND				2.80E-02	J		
Nickel	mg/kg	1.29E+01	1.54E+02	ND				1.27E+01				6.00E+00			
Potassium	mg/kg	7.11E+02		7.15E+02			YES	2.36E+03		YES		1.44E+03		YES	
Selenium	mg/kg	4.70E-01	3.91E+01	7.60E-01			YES	9.00E-01		YES		8.60E-01	B	YES	
Sodium	mg/kg	7.02E+02		ND				ND				4.95E+01	B		
Thallium	mg/kg	1.40E+00	5.08E-01	ND				ND				4.20E-01	J		
Vanadium	mg/kg	6.49E+01	5.31E+01	1.14E+01				ND				8.80E+00			
Zinc	mg/kg	3.49E+01	2.34E+03	2.24E+01				3.87E+01		YES		1.21E+01			
<b>SEMIVOLATILE ORGANIC COMPOUNDS</b>															
Diethyl phthalate	mg/kg		6.23E+03	ND				ND				5.90E-02	J		
bis(2-Ethylhexyl)phthalate	mg/kg		4.52E+01	ND				5.00E-02	J			5.30E-01	B		
<b>VOLATILE ORGANIC COMPOUNDS</b>															
2-Butanone	mg/kg		4.66E+03	ND				ND				8.70E-03	J		
Acetone	mg/kg		7.76E+02	3.20E-02	B			7.00E-02	B			2.40E-01	J		
Methylene chloride	mg/kg		8.41E+01	4.10E-03	B			4.00E-03	B			3.90E-03	B		
Styrene	mg/kg		1.55E+03	ND				ND				8.50E-03			
Toluene	mg/kg		1.55E+03	ND				ND				ND			
Trichlorofluoromethane	mg/kg		2.33E+03	ND				ND				ND			

Table 2-7

**Subsurface Soil Analytical Results**  
**Range 24A Multi-Purpose Range, Parcel 108(7)**  
**Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q**  
**Fort McClellan, Calhoun County, Alabama**

(Page 3 of 3)

Parcel Sample Location Sample Number Sample Date Sample Depth (Feet)	Units	BKG <sup>a</sup>	Site <sup>b</sup> Specific Screening Levels	FTA-108-GP07 FTA-108 FT0018 13-Sep-89 2.0-4.0				FTA-108-GP08 FTA-108 FT0020 14-Sep-89 6.0-8.0				FTA-108-GP09 FTA-108 FT0022 13-Sep-89 2.0-4.0				FTA-108-GP10 FTA-108 FT0024 2-Nov-98 2.0-4.0				
				Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	
<b>METALS</b>																				
Aluminum	mg/kg	1.36E+04	7.80E+03	6.53E+03					1.41E+04		YES	YES	7.19E+03					1.24E+04		YES
Arsenic	mg/kg	1.83E+01	4.26E-01	3.60E+00			YES		4.30E+00			YES	3.30E+00				YES	4.20E+00		YES
Barium	mg/kg	2.34E+02	5.47E+02	4.93E+01					6.48E+01				3.74E+01					9.74E+01	J	
Beryllium	mg/kg	8.60E-01	9.60E+00	5.90E-01					5.90E-01				6.00E-01					7.80E-01		
Calcium	mg/kg	6.37E+02		7.68E+01	J				5.08E+01	J			7.69E+01	J				ND		
Chromium	mg/kg	3.83E+01	2.32E+01	8.80E+00	J				1.17E+01	J			4.50E+00	J				2.18E+01		
Cobalt	mg/kg	1.75E+01	4.69E+02	2.60E+00	J				2.40E+00	J			7.50E-01	J				2.61E+01		YES
Copper	mg/kg	1.94E+01	3.13E+02	1.06E+01	J				1.17E+01	J			3.60E+00	J				3.78E+01		YES
Iron	mg/kg	4.48E+04	2.34E+03	1.98E+04			YES		1.85E+04			YES	6.52E+03				YES	4.74E+04		YES
Lead	mg/kg	3.85E+01	4.00E+02	1.88E+01					4.88E+01		YES		8.80E+00					8.30E+00		
Magnesium	mg/kg	7.66E+02		4.05E+02	J				4.08E+02	J			2.40E+02	J				2.34E+03		YES
Manganese	mg/kg	1.36E+03	3.63E+02	7.11E+01					7.05E+01				1.88E+01					8.03E+02	J	YES
Mercury	mg/kg	7.00E-02	2.33E+00	2.80E-02	J				2.60E-02	J			1.80E-02	J				ND		
Nickel	mg/kg	1.29E+01	1.54E+02	5.90E+00					4.80E+00				2.00E+00	J				3.03E+01		YES
Potassium	mg/kg	7.11E+02		2.43E+03		YES			1.87E+03		YES		3.31E+03			YES		5.63E+02		
Selenium	mg/kg	4.70E-01	3.91E+01	1.30E+00	B	YES			1.10E+00	B	YES		ND					ND		
Sodium	mg/kg	7.02E+02		5.40E+01	B				6.42E+01	B			5.43E+01	B				ND		
Thallium	mg/kg	1.40E+00	5.08E-01	ND					ND				ND					ND		
Vanadium	mg/kg	6.49E+01	5.31E+01	1.04E+01					1.59E+01				7.70E+00					ND		
Zinc	mg/kg	3.49E+01	2.34E+03	1.00E+01					1.37E+01				5.20E+00					5.99E+01		YES
<b>SEMIVOLATILE ORGANIC COMPOUNDS</b>																				
Diethyl phthalate	mg/kg		6.23E+03	ND					ND				ND					ND		
bis(2-Ethylhexyl)phthalate	mg/kg		4.52E+01	4.00E-01	B				5.60E-02	B			5.70E-01	B				ND		
<b>VOLATILE ORGANIC COMPOUNDS</b>																				
2-Butanone	mg/kg		4.66E+03	ND					ND				ND					3.30E-03	B	
Acetone	mg/kg		7.76E+02	1.10E-02	B				1.40E-02	B			ND					5.60E-02	B	
Methylene chloride	mg/kg		8.41E+01	5.10E-03	B				4.60E-03	B			5.60E-03	B				3.30E-03	B	
Styrene	mg/kg		1.55E+03	ND					ND				ND					ND		
Toluene	mg/kg		1.55E+03	8.10E-04	J				1.10E-03	J			ND					ND		
Trichlorofluoromethane	mg/kg		2.33E+03	ND					3.70E-03	J			ND					ND		

Analyses performed by Quanterra Environmental Services using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods, including Update III where applicable

a Bkg - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in Science Applications International Corp. (1998, *Final Background Metals Survey Report, Fort McClellan, Alabama* July)

b Residential human health site-specific screening level (SSSL) and ecological screening value (ESV) as given in IT Corporation (2000). Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama, July.

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit (and greater than zero).

J - Result is greater than stated method detection limit but less than or equal to specified reporting limit.

mg/kg - Milligrams per kilogram

NA - Not available

ND - not detected

Qual - Data validation qualifier

Table 2-8

**Groundwater Analytical Results  
Range 24A Fog Oil Drum Storage, Parcel 88(6)  
Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q  
Fort McClellan, Calhoun County, Alabama**

Parcel Sample Location Sample Number Sample Date	Units	BKG <sup>a</sup>	Site <sup>b</sup> Specific Screening Levels	FTA-88-GP01 FTA-88 FR3001 9-Nov-99				FTA-88-GP02 FTA-88 FR3002 9-Nov-99				FTA-88-GP03 FTA-88 FR3003 8-Nov-99				FTA-88-GP04 FTA-88 FR3004 8-Nov-99			
				Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL
<b>METALS</b>																			
Aluminum	mg/L	2.34E+00	1.56E+00	1.95E-01	B			5.53E-01	B			1.11E+00	J			1.40E-01	B		
Barium	mg/L	1.27E-01	1.10E-01	4.24E-02	J			1.39E-02	J			2.91E-02	J			5.75E-02	J		
Beryllium	mg/L	1.24E-03	3.12E-03	6.30E-04	B			7.20E-04	B			7.60E-04	B			ND			
Calcium	mg/L	5.65E+01		1.56E+01				2.30E+00	J			1.30E+00	J			5.98E+01	YES		
Chromium	mg/L		4.69E-03	ND				5.00E-03	J		YES	3.40E-03	J			ND			
Cobalt	mg/L	2.34E-02	9.39E-02	7.60E-03	J			ND				ND				4.40E-03	J		
Iron	mg/L	7.04E+00	4.69E-01	3.97E-01				6.13E-01			YES	6.83E-01		YES		1.10E+01	YES YES		
Magnesium	mg/L	2.13E+01		3.29E+00	J			4.48E-01	J			4.29E-01	J			2.54E+01	YES		
Manganese	mg/L	5.81E-01	7.35E-02	1.68E+00		YES	YES	9.07E-02			YES	1.39E-01		YES		1.48E+00	YES YES		
Nickel	mg/L		3.13E-02	4.20E-03	J			5.40E-03	J			3.10E-03	J			ND			
Potassium	mg/L	7.20E+00		1.88E+00	J			8.68E-01	J			1.52E+00	J			1.60E+00	J		
Sodium	mg/L	1.48E+01		1.53E+00	B			1.10E+00	B			1.17E+00	B			2.50E+00	J		
Thallium	mg/L	1.45E-03	1.00E-04	ND				5.10E-03	B	YES	YES	7.40E-03	B	YES	YES	8.40E-03	B YES YES		
Zinc	mg/L	2.20E-01	4.69E-01	7.90E-03	J			3.80E-03	J			4.20E-03	J			6.10E-03	J		
<b>SEMIVOLATILE ORGANIC COMPOUNDS</b>																			
Naphthalene	mg/L		3.00E-03	1.00E-03	J			ND				ND				ND			
<b>VOLATILE ORGANIC COMPOUNDS</b>																			
1,2,4-Trimethylbenzene	mg/L		6.00E-03	7.20E-03			YES	ND				ND				ND			
1,2-Dimethylbenzene	mg/L		2.80E+00	3.30E-03	U			ND				ND				ND			
1,3,5-Trimethylbenzene	mg/L		6.00E-03	6.90E-04	J			ND				ND				ND			
Acetone	mg/L		1.56E-01	3.10E-03	B			ND				ND				ND			
Benzene	mg/L		1.40E-03	2.60E-04	J			ND				ND				ND			
Chloromethane	mg/L		3.92E-03	1.20E-04	J			ND				ND				ND			
Cumene	mg/L		1.27E-01	5.60E-04	J			ND				ND				ND			
Naphthalene	mg/L		3.00E-03	1.40E-03	U			1.50E-04	J			ND				ND			
m,p-Xylenes	mg/L		2.80E+00	1.80E-03	U			ND				ND				ND			
n-Butylbenzene	mg/L		9.57E-03	3.50E-04	J			ND				ND				ND			
n-Propylbenzene	mg/L		1.30E-02	3.30E-04	J			ND				ND				ND			
sec-Butylbenzene	mg/L		1.06E-02	1.80E-04	J			ND				ND				ND			

Analyses performed by Quanterra Environmental Services using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods, including Update III where applicable

- a Bkg - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in Science Applications International Corp. (1998, *Final Background Metals Survey Report, Fort McClellan, Alabama*, July.
- b Residential human health site-specific screening level (SSSL) and ecological screening value (ESV) as given in IT Corporation (2000). *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama*, July.

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit (and greater than zero).

J - Result is greater than stated method detection limit but less than or equal to specified reporting limit.

mg/kg - Milligrams per kilogram

NA - Not available

ND - not detected

Qual - Data validation qualifier

Table 2-9

**Groundwater Analytical Results**  
**Range 24A Multi-Purpose Range, Parcel 108(7)**  
**Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q**  
**Fort McClellan, Calhoun County, Alabama**

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Parcel Sample Location Sample Number Sample Date	Units	BKG <sup>a</sup>	Site <sup>b</sup> Specific Screening Levels	FTA-108-BK-G06 FTA-108 FT3013 16-Nov-99				FTA-108-GP01 FTA-108 FT3001 10-Nov-99				FTA-108-GP02 FTA-108 FT3004 10-Nov-99				FTA-108-GP03 FTA-108 FT3005 10-Nov-99				FTA-108-GP04 FTA-108 FT3006 9-Nov-99				
				Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	
<b>PESTICIDES</b>																								
beta-BHC	mg/L		3.00E-05	ND				1.90E-05	J				ND				ND							
<b>METALS</b>																								
Aluminum	mg/L	2.34E+00	1.56E+00	9.45E-02	B			2.21E-01	B				1.24E+01	J	YES	YES	6.83E-01	J			6.20E+00	J	YES	YES
Arsenic	mg/L	1.78E-02	4.00E-05	ND				ND					2.60E-03	J		YES	ND				2.60E-03	J		YES
Barium	mg/L	1.27E-01	1.10E-01	2.17E-02	J			7.05E-02	J				1.31E-01	J	YES	YES	4.75E-02	J			5.82E-02	J		
Beryllium	mg/L	1.24E-03	3.12E-03	ND				ND					1.50E-03	J	YES		ND				8.40E-04	J		
Calcium	mg/L	5.65E+01		1.13E-01	B			8.00E+00					9.06E+00				9.29E+00				4.47E+00	J		
Chromium	mg/L		4.69E-03	ND				ND					9.40E-03	B		YES	ND				3.39E-02			YES
Cobalt	mg/L	2.34E-02	9.39E-02	ND				4.20E-03	J				5.40E-03	J			ND				4.10E-03	J		
Copper	mg/L	2.55E-02	6.26E-02	ND				ND					2.00E-03	B			ND				ND			
Iron	mg/L	7.04E+00	4.69E-01	4.25E-02	J			5.02E-01		YES			2.20E+01		YES	YES	4.43E-01				1.13E+01		YES	YES
Lead	mg/L	7.99E-03	1.50E-02	ND				ND					2.20E-03	J			ND				ND			
Magnesium	mg/L	2.13E+01		7.80E-02	J			1.68E+00	J				2.56E+00	J			1.24E+00	J			1.25E+00	J		
Manganese	mg/L	5.81E-01	7.35E-02	2.90E-03	J			5.28E-01		YES			5.89E-01		YES	YES	8.40E-02			YES	1.09E+00		YES	YES
Mercury	mg/L		4.60E-04	ND				ND					ND				ND				ND			
Nickel	mg/L		3.13E-02	2.10E-03	J			3.10E-03	J				1.27E-02	J			ND				1.89E-02	J		
Potassium	mg/L	7.20E+00		2.04E+00	J			4.22E+00	J				1.87E+01		YES		1.25E+01		YES		7.87E+00		YES	
Sodium	mg/L	1.48E+01		1.06E+00	J			1.16E+00	J				1.99E+00	J			5.61E+00				1.53E+00	J		
Thallium	mg/L	1.45E-03	1.00E-04	ND				ND					ND				ND				7.00E-03	B	YES	YES
Vanadium	mg/L	1.70E-02	1.10E-02	ND				ND					1.41E-02	J		YES	ND				1.30E-02	J		YES
Zinc	mg/L	2.20E-01	4.69E-01	ND				4.00E-03	J				2.33E-02				ND				6.90E-03	J		
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>																								
1,2-Dichlorobenzene	mg/L		2.87E-02	ND				ND					ND				ND				ND			
4-Methylphenol	mg/L		7.68E-03	ND				ND					3.60E-02		YES		ND				ND			
Di-n-butyl phthalate	mg/L		1.48E-01	ND				ND					ND				1.10E-03	J			ND			
Di-n-octyl phthalate	mg/L		3.10E-04	ND				ND					ND				ND				ND			
Phenol	mg/L		9.31E-01	ND				ND					5.70E-03	J			ND				ND			
bis(2-Ethylhexyl)phthalate	mg/L		4.30E-03	ND				ND					ND				ND				ND			
<b>VOLATILE ORGANIC COMPOUNDS</b>																								
2-Butanone	mg/L		7.14E-01	ND				ND					2.20E-03	B			ND				ND			
Acetone	mg/L		1.56E-01	ND				ND					1.50E-03	B			ND				ND			
Benzene	mg/L		1.40E-03	ND				ND					ND				ND				ND			
Carbon disulfide	mg/L		1.51E-01	ND				ND					ND				ND				ND			
Chloroform	mg/L		1.15E-03	ND				ND					ND				ND				1.00E-03			
Chloromethane	mg/L		3.92E-03	ND				1.50E-04	J				1.10E-04	J			1.70E-04	J			1.10E-04	J		
Ethylbenzene	mg/L		1.40E-01	ND				2.50E-04	J				ND				ND				ND			
Methylene chloride	mg/L		7.85E-03	ND				ND					ND				ND				ND			
Toluene	mg/L		2.59E-01	ND				ND					ND				ND				ND			
p-Cymene	mg/L		2.26E-01	ND				2.60E-03					1.90E-02				ND				ND			

Table 2-9

**Groundwater Analytical Results**  
**Range 24A Multi-Purpose Range, Parcel 108(7)**  
**Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q**  
**Fort McClellan, Calhoun County, Alabama**

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Parcel Sample Location Sample Number Sample Date	Parameter	Units	BKG <sup>a</sup>	Site <sup>b</sup> Specific Screening Levels	FTA-108-GP05 FTA-108 FT3007 9-Nov-99				FTA-108-GP06 FTA-108 FT3008 12-Nov-99				FTA-108-GP07 FTA-108 FT3009 16-Nov-99				FTA-108-GP08 FTA-108 FT3010 15-Nov-99				FTA-108-GP09 FTA-108 FT3011 16-Nov-99			
					Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL
<b>PESTICIDES</b>																								
	beta-BHC	mg/L		3.00E-05	ND				ND				2.70E-05 J				ND				ND			
<b>METALS</b>																								
	Aluminum	mg/L	2.34E+00	1.56E+00	9.52E+01 J	YES	YES	1.82E-01 B					1.02E+00 J				2.69E+01 J	YES	YES	3.42E-01 B				
	Arsenic	mg/L	1.78E-02	4.00E-05	2.26E-02	YES	YES	ND					ND				1.14E-02			YES	ND			
	Barium	mg/L	1.27E-01	1.10E-01	5.82E-01	YES	YES	8.07E-02 J					8.67E-02 J				2.47E-01	YES	YES	6.00E-03 J				
	Beryllium	mg/L	1.24E-03	3.12E-03	9.70E-03	YES	YES	ND					ND				3.40E-03 J	YES	YES	ND				
	Calcium	mg/L	5.65E+01		3.18E+00 J			3.96E+00 J					7.93E+00				3.30E+00 J				1.45E+00 J			
	Chromium	mg/L		4.69E-03	2.48E-01			YES	ND				8.70E-03 B		YES		2.87E-02			YES	ND			
	Cobalt	mg/L	2.34E-02	9.39E-02	2.55E-01	YES	YES	1.20E-02 B					2.40E-03 B				4.18E-02 J	YES			4.10E-03 B			
	Copper	mg/L	2.55E-02	6.26E-02	8.36E-02	YES	YES	ND					ND				5.48E-02	YES			ND			
	Iron	mg/L	7.04E+00	4.69E-01	2.57E+02	YES	YES	1.69E+01	YES	YES	YES	6.85E-01		YES			5.24E+01	YES	YES	1.02E+01	YES	YES		
	Lead	mg/L	7.99E-03	1.50E-02	4.92E-02	YES	YES	ND					ND				2.05E-02	YES	YES	ND				
	Magnesium	mg/L	2.13E+01		4.24E+00 J			4.81E+00 J					1.44E+00 J				8.05E+00				7.82E+00			
	Manganese	mg/L	5.81E-01	7.35E-02	2.64E+00	YES	YES	4.80E+00	YES	YES	YES	2.31E-01		YES			4.26E-01		YES		1.15E+00	YES	YES	
	Mercury	mg/L		4.60E-04	6.00E-05 J			ND					ND				ND				ND			
	Nickel	mg/L		3.13E-02	2.17E-01			YES	2.80E-03 J				6.60E-03 J				8.90E-02		YES		1.08E-02 J			
	Potassium	mg/L	7.20E+00		3.95E+01	YES		4.67E+00 J					7.04E+00				1.36E+01	YES			1.25E+00 J			
	Sodium	mg/L	1.48E+01		1.05E+00 J			2.68E+00 J					1.73E+00 J				1.33E+00 J				1.76E+00 J			
	Thallium	mg/L	1.45E-03	1.00E-04	5.80E-03 B	YES	YES	8.40E-03 B	YES	YES	YES	ND					ND				ND			
	Vanadium	mg/L	1.70E-02	1.10E-02	1.03E-01	YES	YES	ND					2.10E-03 J				2.44E-02 J	YES	YES		ND			
	Zinc	mg/L	2.20E-01	4.69E-01	2.52E-01	YES		ND					4.10E-03 J				1.02E-01				9.10E-03 J			
<b>SEMIVOLATILE ORGANIC COMPOUNDS</b>																								
	1,2-Dichlorobenzene	mg/L		2.87E-02	ND				ND				ND				ND				ND			
	4-Methylphenol	mg/L		7.68E-03	ND				2.20E-02		YES		ND				ND				ND			
	Di-n-butyl phthalate	mg/L		1.48E-01	ND				ND				ND				ND				ND			
	Di-n-octyl phthalate	mg/L		3.10E-04	ND				1.80E-03 J		YES		ND				ND				ND			
	Phenol	mg/L		9.31E-01	ND				2.60E-03 J				ND				ND				ND			
	bis(2-Ethylhexyl)phthalate	mg/L		4.30E-03	1.10E-03 J				ND				ND				ND				ND			
<b>VOLATILE ORGANIC COMPOUNDS</b>																								
	2-Butanone	mg/L		7.14E-01	ND				5.60E-03 J				ND				ND				ND			
	Acetone	mg/L		1.56E-01	ND				5.90E-03 B				ND				ND				ND			
	Benzene	mg/L		1.40E-03	ND				ND				ND				ND				ND			
	Carbon disulfide	mg/L		1.51E-01	ND				1.30E-04 J				ND				ND				ND			
	Chloroform	mg/L		1.15E-03	ND				ND				ND				ND				ND			
	Chloromethane	mg/L		3.92E-03	ND				ND				ND				ND				3.10E-04 J			
	Ethylbenzene	mg/L		1.40E-01	ND				ND				ND				ND				ND			
	Methylene chloride	mg/L		7.85E-03	ND				ND				ND				ND				ND			
	Toluene	mg/L		2.59E-01	ND				2.20E-03				ND				ND				ND			
	p-Cymene	mg/L		2.26E-01	ND				6.00E-03				ND				ND				ND			

Table 2-9

**Groundwater Analytical Results**  
**Range 24A Multi-Purpose Range, Parcel 108(7)**  
**Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q**  
**Fort McClellan, Calhoun County, Alabama**

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Parcel Sample Location Sample Number Sample Date	Units	BKG <sup>a</sup>	Site <sup>b</sup> Specific Screening Levels	FTA-108-GP10 FTA-108 FT3012 16-Nov-99				FTA-108-T24A-G01 FTA-108 FT3014 11-Nov-99				FTA-108-T24A-G02 FTA-108 FT3017 17-Nov-99				FTA-108-T24A-G03 FTA-108 FT3018 17-Nov-99			
				SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG	>SSSL	Result	Qual	>BKG
<b>PESTICIDES</b>																			
beta-BHC	mg/L		3.00E-05	ND				ND					ND					ND	
<b>METALS</b>																			
Aluminum	mg/L	2.34E+00	1.56E+00	2.72E+00	J	YES	YES	2.41E-01	B				1.46E-01	B				8.30E-02	B
Arsenic	mg/L	1.78E-02	4.00E-05	ND				ND					ND					2.80E-03	J
Barium	mg/L	1.27E-01	1.10E-01	1.34E-01	J	YES	YES	2.22E-02	J				1.10E-02	J				3.50E-03	J
Beryllium	mg/L	1.24E-03	3.12E-03	5.90E-04	J			ND					ND					ND	
Calcium	mg/L	5.65E+01		6.94E-01	J			3.34E+00	J				1.15E+00	J				4.24E-01	J
Chromium	mg/L		4.69E-03	4.00E-03	B			ND					ND					ND	
Cobalt	mg/L	2.34E-02	9.39E-02	5.89E-02		YES		3.40E-03	J				6.80E-03	B				2.90E-03	B
Copper	mg/L	2.55E-02	6.26E-02	ND				ND					ND					ND	
Iron	mg/L	7.04E+00	4.69E-01	1.11E+01		YES	YES	1.39E+01		YES	YES		4.82E+00		YES	YES		6.11E+00	
Lead	mg/L	7.99E-03	1.50E-02	ND				ND					ND					ND	
Magnesium	mg/L	2.13E+01		4.47E-01	J			9.41E+00					1.58E+01					6.47E+00	
Manganese	mg/L	5.81E-01	7.35E-02	1.81E+00		YES	YES	1.25E+00		YES	YES		2.95E+00		YES	YES		8.29E-01	
Mercury	mg/L		4.60E-04	ND				ND					ND					ND	
Nickel	mg/L		3.13E-02	5.00E-02			YES	3.40E-03	J				7.40E-03	J				5.90E-03	J
Potassium	mg/L	7.20E+00		3.20E+00	J			1.02E+00	J				9.98E-01	J				6.58E-01	J
Sodium	mg/L	1.48E+01		1.86E+00	J			1.10E+00	J				2.22E+00	B				1.12E+00	B
Thallium	mg/L	1.45E-03	1.00E-04	ND				ND					6.00E-03	J	YES	YES		7.20E-03	J
Vanadium	mg/L	1.70E-02	1.10E-02	2.70E-03	J			ND					ND					ND	
Zinc	mg/L	2.20E-01	4.69E-01	1.07E-02	J			1.39E-02	J				8.60E-03	J				7.40E-03	J
<b>SEMIVOLATILE ORGANIC COMPOUNDS</b>																			
1,2-Dichlorobenzene	mg/L		2.87E-02	ND				ND					ND					1.10E-02	
4-Methylphenol	mg/L		7.68E-03	ND				ND					ND					ND	
Di-n-butyl phthalate	mg/L		1.48E-01	ND				ND					ND					ND	
Di-n-octyl phthalate	mg/L		3.10E-04	ND				ND					ND					ND	
Phenol	mg/L		9.31E-01	ND				1.50E-02					ND					ND	
bis(2-Ethylhexyl)phthalate	mg/L		4.30E-03	ND				ND					ND					ND	
<b>VOLATILE ORGANIC COMPOUNDS</b>																			
2-Butanone	mg/L		7.14E-01	ND				ND					ND					ND	
Acetone	mg/L		1.56E-01	ND				ND					ND					ND	
Benzene	mg/L		1.40E-03	ND				2.80E-01			YES		ND					ND	
Carbon disulfide	mg/L		1.51E-01	ND				ND					ND					ND	
Chloroform	mg/L		1.15E-03	ND				ND					ND					ND	
Chloromethane	mg/L		3.92E-03	1.60E-04	J			ND					1.10E-04	B				1.30E-04	B
Ethylbenzene	mg/L		1.40E-01	ND				ND					ND					ND	
Methylene chloride	mg/L		7.85E-03	ND				3.80E-03	B				ND					ND	
Toluene	mg/L		2.59E-01	ND				ND					ND					ND	
p-Cymene	mg/L		2.26E-01	ND				ND					ND					ND	

Table 2-9

**Groundwater Analytical Results**  
**Range 24A Multi-Purpose Range, Parcel 108(7)**  
**Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q**  
**Fort McClellan, Calhoun County, Alabama**

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Analyses performed by Quanterra Environmental Services using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods, including Update III where applicable  
a Bkg - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in Science Applications International Corp.

(1998, Final Background Metals Survey Report, Fort McClellan, Alabama, July.

b Residential human health site-specific screening level (SSSL) and ecological screening value (ESV) as given in IT Corporation (2000). *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama, July.*

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit (and greater than zero).

J - Result is greater than stated method detection limit but less than or equal to specified reporting limit.

mg/kg - Milligrams per kilogram

NA - Not available

ND - not detected

Qual - Data validation qualifier

Table 2-10

**Surface Water Analytical Results  
Range 24A Fog Oil Drum Storage, Parcel 88(6)  
Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q  
Fort McClellan, Calhoun County, Alabama**

Parcel Sample Location Sample Number Sample Date	Parameter <sup>c</sup>	Units	BKG <sup>a</sup>	Site <sup>b</sup> Specific Screening Levels	Ecological <sup>b</sup> Screening Values	FTA-88-SW/SD01 FTA-88 FR2001 29-Sep-99				FTA-88-SW/SD02 FTA-88 FR2002 29-Sep-99					
						Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV
<b>METALS</b>															
	Aluminum	mg/L	5.26E+00	1.53E+01	8.70E-02	1.07E-01	J				YES	2.79E+00			YES
	Barium	mg/L	7.53E-02	1.10E+00	3.90E-03	1.31E-02	J				YES	5.36E-02	J		YES
	Calcium	mg/L	2.52E+01		1.16E+02	1.18E+00	J					8.75E+01		YES	
	Chromium	mg/L	1.11E-02	4.08E-02	1.10E-02	ND						1.97E-02		YES	YES
	Copper	mg/L	1.27E-02	6.23E-01	6.54E-03	ND						3.80E-03	B		
	Iron	mg/L	1.96E+01	4.70E+00	1.00E+00	4.61E-01						2.23E+00			YES
	Magnesium	mg/L	1.10E+01		8.20E+01	3.44E-01	J					8.10E+00			
	Manganese	mg/L	5.65E-01	6.40E-01	8.00E-02	5.78E-02	J					3.81E-02			
	Mercury	mg/L		4.25E-03	1.00E-05	ND						6.60E-05	J		YES
	Potassium	mg/L	2.56E+00		5.30E+01	ND						1.00E+01		YES	
	Sodium	mg/L	3.44E+00		6.80E+02	1.01E+00	B					3.97E+00	J	YES	
	Thallium	mg/L	2.40E-03	1.01E-03	4.00E-03	6.70E-03	B	YES	YES	YES		ND			
	Vanadium	mg/L	1.52E-02	7.90E-02	1.90E-02	ND						5.20E-03	J		
	Zinc	mg/L	4.03E-02	4.65E+00	5.89E-02	4.20E-03	B					1.34E-02	B		
<b>VOLATILE ORGANIC COMPOUNDS</b>															
	Acetone	mg/L		1.57E+00	7.80E+01	1.30E-03	B					3.80E-03	B		
	Chloromethane	mg/L		8.23E-02	5.50E+00	1.60E-04	B					5.70E-04	B		

Analyses performed by Quanterra Environmental Services using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods, including Update III where applicable

a Bkg - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in Science Applications International Corp. (1998, *Final Background Metals Survey Report, Fort McClellan, Alabama*, July.

b Residential human health site-specific screening level (SSSL) and ecological screening value (ESV) as given in IT Corporation (2000). *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama*, July.

c Refer to Appendix B for a comprehensive list of all analytes that were analyzed for, including lead.

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit (and greater than zero).

J - Result is greater than stated method detection limit but less than or equal to specified reporting limit.

mg/kg - Milligrams per kilogram

NA - Not available

ND - not detected

Qual - Data validation qualifier

Table 2-11

**Surface Water Analytical Results  
Range 24A Multi-Purpose Range, Parcel 108(7)  
Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q  
Fort McClellan, Calhoun County, Alabama**

Parcel Sample Location Sample Number Sample Date	Parameter <sup>a</sup>	Units	Site <sup>b</sup> Specific Screening Levels		Ecological <sup>b</sup> Screening Values					FTA-108-SW/SD01 FTA-108 FT2001 29-Sep-99					FTA-108-SW/SD02 FTA-108 FT2002 1-Oct-99					FTA-108-SW/SD03 FTA-108 FT2003 30-Sep-99				
			BKG <sup>a</sup>	SSSL	ESV	Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV				
<b>METALS</b>																								
	Aluminum	mg/L	5.26E+00	1.53E+01	8.70E-02	2.11E-01	B			YES	1.18E-01	B			YES	1.46E-01	B		YES					
	Barium	mg/L	7.53E-02	1.10E+00	3.90E-03	2.14E-02	J			YES	1.85E-02	J			YES	2.80E-02	J			YES				
	Calcium	mg/L	2.52E+01		1.16E+02	1.37E+00	J				2.94E-01	J				1.83E+00	J							
	Iron	mg/L	1.96E+01	4.70E+00	1.00E+00	2.60E-01	J				1.46E-01	J				1.40E-01								
	Magnesium	mg/L	1.10E+01		8.20E+01	8.33E-01	J				3.41E-01	J				1.19E+00	J							
	Manganese	mg/L	5.65E-01	6.40E-01	8.00E-02	9.60E-03	J				8.20E-03	J				5.80E-03	J							
	Mercury	mg/L		4.25E-03	1.00E-05	6.30E-05	J			YES	6.30E-05	J			YES	ND								
	Potassium	mg/L	2.56E+00		5.30E+01	1.98E+00	J				1.40E+00	J				1.84E+00	J							
	Sodium	mg/L	3.44E+00		6.80E+02	1.31E+00	J				1.48E+00	J				1.23E+00	J							
	Thallium	mg/L	2.40E-03	1.01E-03	4.00E-03	5.00E-03	B	YES	YES	YES	ND					4.90E-03	B	YES	YES	YES				
	Zinc	mg/L	4.03E-02	4.65E+00	5.89E-02	2.40E-03	B				2.70E-03	B				2.50E-03	B							
<b>VOLATILE ORGANIC COMPOUNDS</b>																								
	Chloromethane	mg/L		8.23E-02	5.50E+00	1.30E-04	B				ND					ND								

Analyses performed by Quanterra Environmental Services using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods, including Update III where applicable

<sup>a</sup> Bkg - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in Science Applications International Corp. (1998, *Final Background Metals Survey Report, Fort McClellan, Alabama*, July.)

<sup>b</sup> Residential human health site-specific screening level (SSSL) and ecological screening value (ESV) as given in IT Corporation (2000). *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama*, July.

<sup>c</sup> Refer to Appendix B for a comprehensive list of all analytes that were analyzed for, including lead.  
ESV - Ecological Screening Value

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit (and greater than zero).

J - Result is greater than stated method detection limit but less than or equal to specified reporting limit.

mg/kg - Milligrams per kilogram

NA - Not available

ND - not detected

Qual - Data validation qualifier

Table 2-12

**Sediment Analytical Results**  
**Range 24A Fog Oil Drum Storage, Parcel 88(6)**  
**Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q**  
**Fort McClellan, Calhoun County, Alabama**

Parcel Sample Location Sample Number Sample Date Sample Depth (Feet)			Site <sup>b</sup> Specific Screening Levels	Ecological <sup>b</sup> Screening Values	FTA-88-SW/SD01 FTA-88 FR1001 29-Sep-99 0-.5					FTA-88-SW/SD02 FTA-88 FR1002 29-Sep-99 0-.5				
Parameter	Units	BKG <sup>a</sup>	SSSL	ESV	Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV
<b>METALS</b>														
Aluminum	mg/kg	8.59E+03	1.15E+06		9.25E+03		YES			5.97E+03				
Arsenic	mg/kg	1.13E+01	5.58E+01	7.24E+00	6.70E+00					4.70E+00				
Barium	mg/kg	9.89E+01	8.36E+04		8.93E+01	J				4.13E+01				
Beryllium	mg/kg	9.70E-01	1.50E+02		1.10E+00	J	YES			7.00E-01				
Calcium	mg/kg	1.11E+03			1.68E+03	J	YES			1.03E+04		YES		
Chromium	mg/kg	3.12E+01	2.79E+03	5.23E+01	1.34E+01					1.58E+01				
Cobalt	mg/kg	1.10E+01	6.72E+04	5.00E+01	ND					4.40E+00	J			
Copper	mg/kg	1.71E+01	4.74E+04	1.87E+01	1.40E+01					2.31E+01		YES		YES
Iron	mg/kg	3.53E+04	3.59E+05		1.91E+04					2.59E+04				
Lead	mg/kg	3.78E+01	4.00E+02	3.02E+01	2.25E+01					1.27E+01				
Magnesium	mg/kg	9.08E+02			4.51E+02	J				5.21E+03		YES		
Manganese	mg/kg	7.12E+02	4.38E+04		2.93E+02					4.87E+02				
Mercury	mg/kg	1.10E-01	2.99E+02	1.30E-01	2.10E-01		YES		YES	4.40E-02	B			
Nickel	mg/kg	1.30E+01	1.76E+04	1.59E+01	ND					7.60E+00				
Potassium	mg/kg	1.01E+03			1.36E+03	J	YES			5.75E+02	J			
Sodium	mg/kg	6.92E+02			2.27E+02	J				6.28E+01	B			
Vanadium	mg/kg	4.09E+01	4.83E+03		1.84E+01	J				2.37E+01				
Zinc	mg/kg	5.27E+01	3.44E+05	1.24E+02	5.71E+01		YES			1.86E+02		YES		YES
<b>SEMIVOLATILE ORGANIC COMPOUNDS</b>														
Acenaphthylene	mg/kg		5.59E+04	3.30E-01	ND					4.10E-02	J			
Anthracene	mg/kg		2.99E+05	3.30E-01	ND					6.50E-02	J			
Benzo(a)anthracene	mg/kg		8.93E+01	3.30E-01	ND					2.20E-01	J			
Benzo(a)pyrene	mg/kg		8.93E+00	3.30E-01	ND					1.70E-01	J			
Benzo(b)fluoranthene	mg/kg		8.93E+01	6.55E-01	ND					2.40E-01	J			
Benzo(ghi)perylene	mg/kg		2.79E+04	6.55E-01	ND					1.20E-01	J			
Benzo(k)fluoranthene	mg/kg		8.93E+02	6.55E-01	ND					2.10E-01	J			
Chrysene	mg/kg		9.79E+03	3.30E-01	ND					4.20E-01				YES
Dibenz(a,h)anthracene	mg/kg		9.79E+00	3.30E-01	ND					5.00E-02	J			
Fluoranthene	mg/kg		3.73E+04	3.30E-01	ND					3.00E-01	J			
Indeno(1,2,3-cd)pyrene	mg/kg		8.93E+01	6.55E-01	ND					1.10E-01	J			
Phenanthrene	mg/kg		2.79E+05	3.30E-01	ND					6.70E-02	J			
Pyrene	mg/kg		3.06E+04	3.30E-01	ND					3.10E-01	J			
bis(2-Ethylhexyl)phthalate	mg/kg		5.41E+03	1.82E-01	ND					8.00E-02	B			
<b>VOLATILE ORGANIC COMPOUNDS</b>														
2-Butanone	mg/kg		6.23E+05	1.37E-01	3.20E-02	J				ND				
Acetone	mg/kg		1.03E+05	4.53E-01	1.80E-01	J				ND				
Methylene chloride	mg/kg		9.84E+03	1.26E+00	2.30E-01	J				2.50E-02	B			

Analyses performed by Quanterra Environmental Services using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods, including Update III where applicable

<sup>a</sup> Bkg - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in Science Applications International Corp. (1998, *Final Background Metals Survey Report, Fort McClellan, Alabama*, July.)

<sup>b</sup> Residential human health site-specific screening level (SSSL) and ecological screening value (ESV) as given in IT Corporation (2000). *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama*, July.

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit (and greater than zero).

J - Result is greater than stated method detection limit but less than or equal to specified reporting limit.

mg/kg - Milligrams per kilogram

NA - Not available

ND - not detected

Qual - Data validation qualifier

Table 2-13

**Sediment Analytical Results**  
**Range 24A Multi-Purpose Range, Parcel 108(7)**  
**Ranges Near Training Area T-24A, Parcels 187(7), 112Q, 113Q-X, 213Q, and 214Q**  
**Fort McClellan, Calhoun County, Alabama**

Parcel Sample Location Sample Number Sample Date Sample Depth (Feet)	Units	BKG <sup>a</sup>	Site <sup>b</sup>	Ecological <sup>b</sup>	FTA-108-SW/SD01					FTA-108-SW/SD02					FTA-108-SW/SD03				
			Specific Screening Levels	Screening Values	FTA-108 FT1001 29-Sep-99 0-.5	Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL	>ESV	Result	Qual	>BKG	>SSSL
<b>METALS</b>																			
Aluminum	mg/kg	8.59E+03	1.15E+06		5.56E+03					9.66E+03	YES				8.61E+03	YES			
Arsenic	mg/kg	1.13E+01	5.58E+01	7.24E+00	4.30E+00					9.20E+00			YES		3.80E+00				
Barium	mg/kg	9.89E+01	8.36E+04		1.09E+02	YES				1.02E+02	YES				1.26E+02	YES			
Beryllium	mg/kg	9.70E-01	1.50E+02		8.90E-01					2.40E+00	YES				1.20E+00	YES			
Calcium	mg/kg	1.11E+03			1.84E+02	J				1.80E+02	J				6.47E+02	J			
Chromium	mg/kg	3.12E+01	2.79E+03	5.23E+01	8.00E+00					2.49E+01					1.70E+01				
Cobalt	mg/kg	1.10E+01	6.72E+04	5.00E+01	9.40E+00					1.11E+01	YES				5.40E+00	J			
Copper	mg/kg	1.71E+01	4.74E+04	1.87E+01	1.64E+01					1.34E+01					1.42E+01				
Iron	mg/kg	3.53E+04	3.59E+05		2.68E+04					7.44E+04	YES				2.27E+04				
Lead	mg/kg	3.78E+01	4.00E+02	3.02E+01	2.48E+01					1.57E+01					3.48E+01				YES
Magnesium	mg/kg	9.06E+02			4.49E+02	J				5.47E+02	J				5.22E+02	J			
Manganese	mg/kg	7.12E+02	4.38E+04		6.17E+02					3.96E+02					6.86E+01				
Mercury	mg/kg	1.10E-01	2.99E+02	1.30E-01	5.80E-02	B				4.00E-02	B				6.90E-02	B			
Nickel	mg/kg	1.30E+01	1.76E+04	1.59E+01	9.70E+00					2.77E+01	YES	YES			8.60E+00				
Potassium	mg/kg	1.01E+03			2.16E+03	YES				3.41E+03	YES				2.11E+03	YES			
Selenium	mg/kg	7.20E-01	5.96E+03		5.20E-01	J				1.00E+00	YES				ND				
Sodium	mg/kg	6.92E+02			8.30E+01	B				6.84E+01	B				9.17E+01	B			
Thallium	mg/kg	1.30E-01	7.78E+01		1.20E+00	J	YES			ND					ND				
Vanadium	mg/kg	4.09E+01	4.83E+03		1.23E+01					2.41E+01					2.09E+01				
Zinc	mg/kg	5.27E+01	3.44E+05	1.24E+02	3.24E+01	J				4.44E+01	J				6.13E+01	J	YES		
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>																			
Anthracene	mg/kg		2.99E+05	3.30E-01	6.80E-02	J				ND					ND				
Benzo(a)anthracene	mg/kg		8.93E+01	3.30E-01	9.90E-01			YES		ND					ND				
Benzo(a)pyrene	mg/kg		8.93E+00	3.30E-01	3.40E-01	J		YES		ND					ND				
Benzo(b)fluoranthene	mg/kg		8.93E+01	6.55E-01	6.80E-01	J		YES		ND					ND				
Benzo(ghi)perylene	mg/kg		2.79E+04	6.55E-01	1.00E-01	J				ND					ND				
Benzo(k)fluoranthene	mg/kg		8.93E+02	6.55E-01	5.80E-01					ND					ND				
Chrysene	mg/kg		9.79E+03	3.30E-01	9.60E-01			YES		ND					ND				
Di-n-butyl phthalate	mg/kg		1.14E+05	1.11E-01	ND					ND					1.90E-01	J			YES
Dibenz(a,h)anthracene	mg/kg		9.79E+00	3.30E-01	6.60E-02	J				ND					ND				
Fluoranthene	mg/kg		3.73E+04	3.30E-01	1.50E+00			YES		ND					ND				
Indeno(1,2,3-cd)pyrene	mg/kg		8.93E+01	6.55E-01	1.20E-01	J				ND					ND				
Pyrene	mg/kg		3.06E+04	3.30E-01	2.00E+00			YES		ND					ND				
bis(2-Ethylhexyl)phthalate	mg/kg		5.41E+03	1.82E-01	7.90E-02	B				1.50E-01	B				2.30E-01	B			YES
<b>VOLATILE ORGANIC COMPOUNDS</b>																			
Acetone	mg/kg		1.03E+05	4.53E-01	3.70E-02	J				1.70E-02	B				6.40E-02	J			
Methylene chloride	mg/kg		9.84E+03	1.26E+00	2.90E-02	B				5.90E-03	B				7.10E-03	B			
Toluene	mg/kg		2.11E+05	6.70E-01	1.10E-03	J				4.10E-03	J				ND				
p-Cymene	mg/kg		2.06E+05		1.30E-02					2.40E-02					ND				

Analyses performed by Quanterra Environmental Services using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods, including Update II where applicable

a Bkg - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in Science Applications International Corp. (1998, *Final Background Metals Survey Report, Fort McClellan, Alabama*, July.)

b Residential human health site-specific screening level (SSSL) and ecological screening value (ESV) as given in IT Corporation (2000), *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama*, July.

B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit (and greater than zero).

J - Result is greater than stated method detection limit but less than or equal to specified reporting limit.

mg/kg - Milligrams per kilogram

NA - Not available

ND - not detected

Qual - Data validation qualifier

The following sections and Tables 2-4 through 2-13 summarize the results of the comparison of detected constituents to the SSSLs, ESVs, and background screening values. Complete analytical results are presented in Appendix B.

### **2.3.1 Surface and Depositional Soil Sample Results**

Fourteen surface soil samples and five depositional soil samples were collected for chemical analyses at Parcels 88(6) and 108(7). Surface and depositional soil samples were collected from the upper 1 foot of soil at the locations shown on Figure 2-2. Analytical results were compared to residential human health SSSLs, ESVs, and metals background screening values, as presented in Tables 2-4 and 2-5. Surface and depositional soil sample locations with compounds exceeding SSSLs (background concentrations and SSSLs for metals) are shown on Figure 2-3.

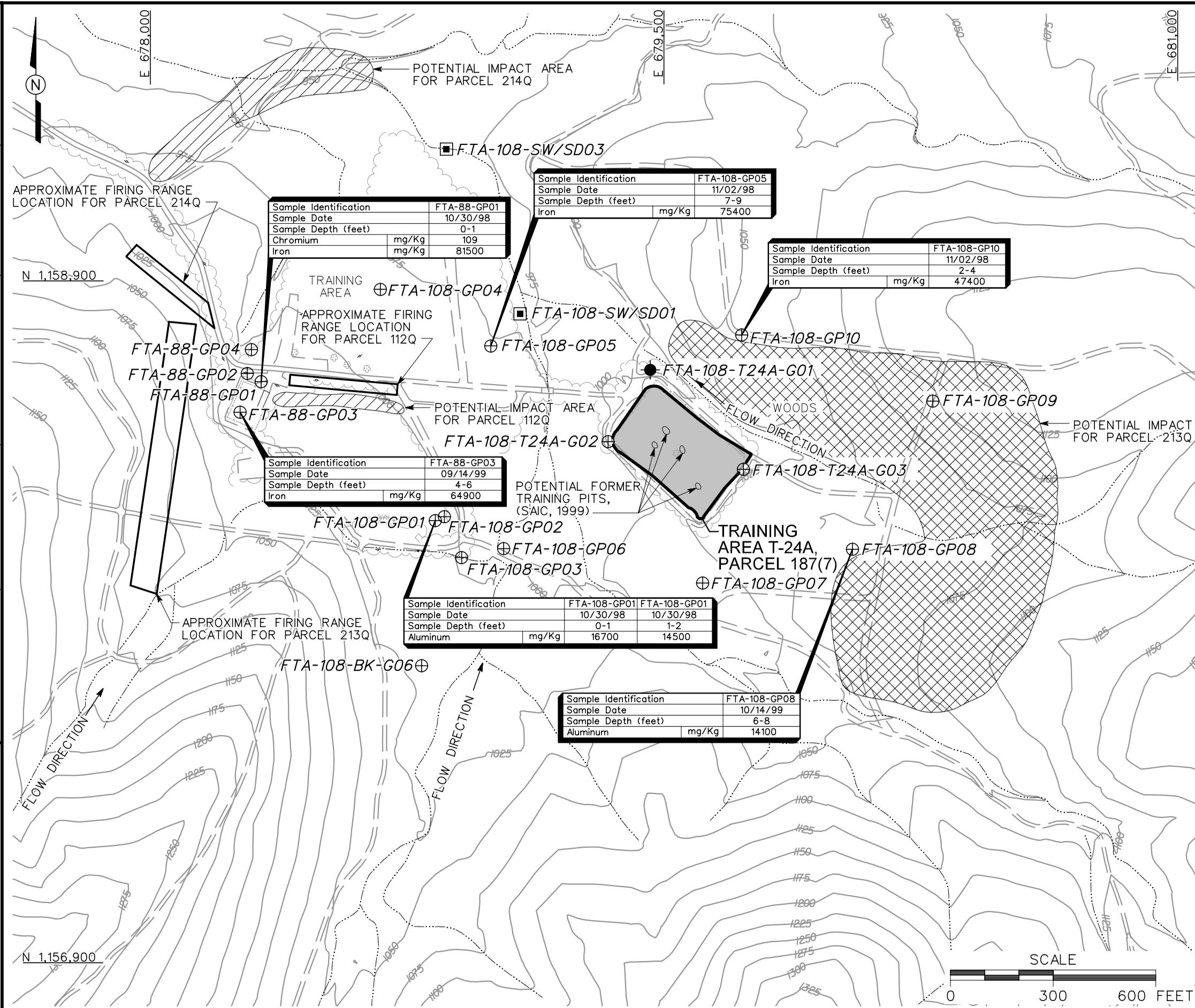
**Metals.** Twenty metals, including aluminum, arsenic, barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, thallium, vanadium, and zinc were detected in surface and depositional soils at Parcels 88(6) and 108(7).

The concentrations of aluminum (FTA-108-GP01), chromium and iron (FTA-88-GP01), exceeded residential human health SSSLs and background concentrations.

The following metals were detected at concentrations exceeding ESVs and background concentrations: aluminum (one location), barium (one location), chromium (one location), copper (three locations), iron (one location), lead (four locations), mercury (one location), selenium (five locations), zinc (four locations), and beryllium.

**Volatile Organic Compounds.** Twelve VOCs, including 1,2,4-trimethylbenzene, 2-butanone, acetone, bromomethane, ethyl benzene, methylene chloride, styrene, toluene, trichlorofluoromethane, cis-1,2-dichloroethene, p-cymene, and naphthalene, were detected in surface and depositional soil samples collected at Parcels 88(6) and 108(7). The results were flagged with either a “J” data qualifier indicating that the result was greater than the method detection limit (MDL) but less than the specified RL, or a “B” qualifier signifying that the compound was also detected in an associated laboratory or field blank.

DWG. NO.: ...796887es.069  
 PROJ. NO.: 796887  
 INITIATOR: J. JENKINS  
 PROJ. MGR.: J. YACOUB  
 DRAFT. CHK. BY:  
 ENGR. CHK. BY: J. JENKINS  
 STARTING DATE: 04/13/00  
 DATE LAST REV.:  
 DRAWN BY: D. BILLINGSLEY  
 09/26/00  
 04:26:32  
 DBILLING  
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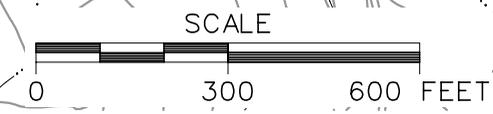


**LEGEND**

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- TOPOGRAPHIC CONTOURS (CONTOUR INTERVAL - 25 FOOT)
- TREES / TREELINE
- PARCEL BOUNDARY
- BRIDGE
- SURFACE DRAINAGE / CREEK
- FENCE
- UTILITY POLE
- AREAS OF MOUNDS AND TRENCHES
- AREA OF SURFACE MOUNDS
- BEDROCK MONITORING WELL LOCATION
- RESIDUUM MONITORING WELL LOCATION
- ANALYTE DETECTED IN METHOD BLANK AT CONCENTRATION GREATER THAN THE REPORTING LIMIT (AND GREATER THAN ZERO)
- RESULT IS GREATER THAN STATED METHOD DETECTION LIMIT BUT LESS THAN OR EQUAL TO SPECIFIED REPORTING LIMIT
- SITE SPECIFIC SCREENING LEVELS

**FIGURE 2-3**  
 SURFACE AND DEEP SOIL SAMPLES EXCEEDING HUMAN HEALTH SSSLs RANGES NEAR TRAINING AREA T-24A PARCELS 187(7), 112Q, 113Q-X, 213Q AND 214Q

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 CALHOUN COUNTY, ALABAMA  
 Contract No. DACA21-96-D-0018



None of the detected VOCs at Parcels 88(6) and 108(7) was present at a concentration exceeding residential human health SSSLs or ESVs.

**Semivolatile Organic Compounds.** Two SVOCs, (butyl benzyl phthalate and bis[2-ethylhexyl]phthalate) were detected in surface and depositional soil samples collected at Parcels 88(6) and 108(7). The results were flagged with a “J” or “B” qualifier signifying that the compounds were also detected in an associated laboratory or field blank. The butyl benzyl phthalate and bis(2-ethylhexyl)phthalate concentrations were below residential human health SSSLs and ESVs.

**Pesticides.** Three pesticides, including 4,4'-dichlorodiphenyldichloroethene, endrin aldehyde, and endrin ketone, were detected in surface and depositional soil samples collected at Parcels 88(6) and 108(7). Each compound was detected in only one sample; 4,4'-dichlorodiphenyldichloroethene in FTA-108-GP07, and endrin aldehyde and endrin ketone in FTA-108-DEP03.

None of the results exceeded residential human health SSSLs or ESVs.

### **2.3.2 Subsurface Soil Sample Results**

Fourteen subsurface soil samples were collected for chemical analyses at Parcels 88(6) and 108(7). Subsurface soil samples were collected at depths greater than 1-foot bgs at the locations shown on Figure 2-2. Analytical results were compared to residential human health SSSLs and metals background screening values, as presented in Tables 2-6 and 2-7. Subsurface soil sample locations with compounds exceeding SSSLs (background concentrations and SSSLs for metals) are shown on Figure 2-3. Pesticides were not detected in subsurface soil samples collected at Parcels 88(6) and 108(7).

**Metals.** Twenty metals, including aluminum, arsenic, barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, thallium, vanadium, and zinc, were detected in subsurface soil samples from Parcels 88(6) and 108(7).

Aluminum, arsenic, iron, and manganese concentrations exceeded residential human health SSSLs; however, of these metals, only aluminum and iron concentrations exceeded background concentrations.

**Volatile Organic Compounds.** Seven VOCs, including 2-butanone, acetone, bromomethane, methylene chloride, styrene, toluene, and trichlorofluoromethane, were detected in subsurface soil samples collected at Parcels 88(6) and 108(7). The results were flagged with either a “J” data qualifier indicating that the result was greater than the MDL but less than the specified RL, or a “B” qualifier signifying that the compound was also detected in an associated laboratory or field blank.

None of the detected VOCs was present at a concentration exceeding residential human health SSSLs.

**Semivolatile Organic Compounds.** Two SVOCs (diethyl phthalate and bis[2-ethylhexyl]phthalate) were detected in subsurface soil samples collected at Parcels 88(6) and 108(7). The results were flagged with either a “J” data qualifier indicating that the result was greater than the MDL but less than the specified RL, or a “B” qualifier signifying that the compound was also detected in an associated laboratory or field blank.

None of the detected SVOCs was present at a concentration exceeding residential human health SSSLs.

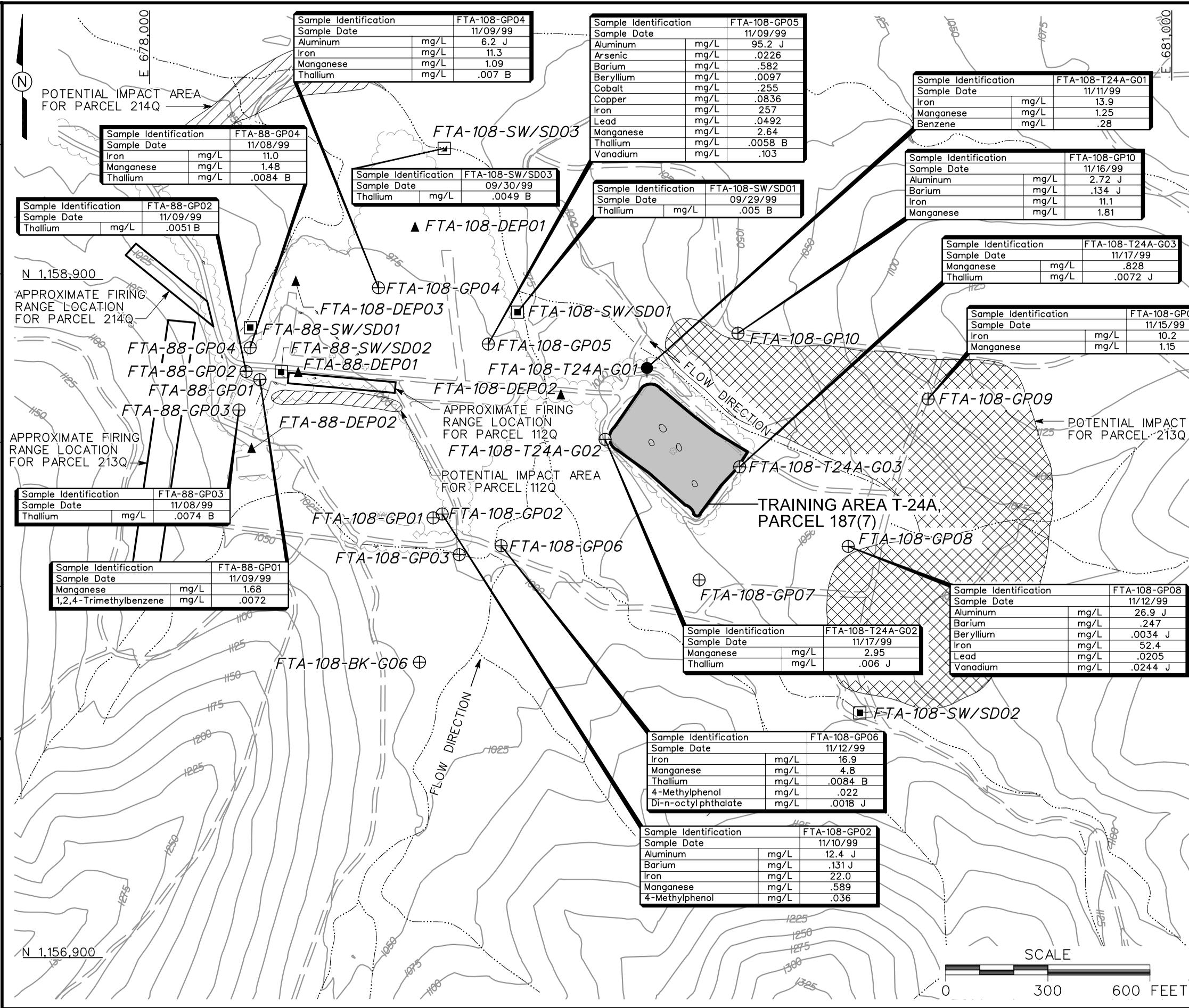
### **2.3.3 Groundwater Sample Results**

Four existing and fourteen permanent monitoring wells installed by IT were sampled at Parcels 88(6) and 108(7). The monitoring well/groundwater sampling locations are shown on Figure 2-2. Analytical results were compared to residential human health SSSLs and metals background screening values, as presented in Tables 2-8 and 2-9. Groundwater sample locations with compounds exceeding SSSLs (background concentrations and SSSLs for metals) are shown on Figure 2-4.

**Metals.** Nineteen metals, including aluminum, arsenic, barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, sodium, thallium, vanadium, and zinc, were detected in unfiltered groundwater samples collected at Parcels 88(6) and 108(7).

The concentrations of 11 metals, including aluminum, arsenic, barium, beryllium, cobalt, copper, iron, lead, manganese, thallium, and vanadium, exceeded residential human health SSSLs and

DWG. NO.: 796887es.074  
 PROJ. NO.: 796887  
 INITIATOR: J. JENKINS  
 DRAFT. CHK. BY:  
 ENGR. MGR.: J. YACOUB  
 DRAFT. CHK. BY:  
 ENGR. CHK. BY: J. JENKINS  
 DATE LAST REV.:  
 DRAWN BY:  
 STARTING DATE: 05/09/00  
 DRAWN BY: D. BILLINGSLEY  
 09/26/00  
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 DBILLING  
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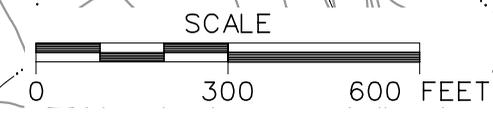
### LEGEND

- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- TOPOGRAPHIC CONTOURS (CONTOUR INTERVAL - 25 FOOT)
- TREES / TREELINE
- PARCEL BOUNDARY
- BRIDGE
- SURFACE DRAINAGE / CREEK
- FENCE
- AREAS OF MOUNDS AND TRENCHES
- AREA OF SURFACE MOUNDS
- BEDROCK MONITORING WELL LOCATION
- RESIDUUM MONITORING WELL LOCATION
- SURFACE WATER/SEDIMENT SAMPLE LOCATION
- DEPOSITIONAL SOIL SAMPLE LOCATION

B ANALYTE DETECTED IN METHOD BLANK AT CONCENTRATION GREATER THAN THE REPORTING LIMIT (AND GREATER THAN ZERO)  
 J RESULT IS GREATER THAN STATED METHOD DETECTION LIMIT BUT LESS THAN OR EQUAL TO SPECIFIED REPORTING LIMIT  
 SSSLs SITE SPECIFIC SCREENING LEVELS

**FIGURE 2-4**  
**GROUNDWATER AND SURFACE**  
**WATER SAMPLES**  
**EXCEEDING HUMAN HEALTH SSSLs**  
**RANGES NEAR TRAINING**  
**AREA T-24A**  
**PARCELS 187(7), 112Q, 113Q-X, 213Q**  
**AND 214Q**

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 FORT McCLELLAN  
 CALHOUN COUNTY, ALABAMA  
 Contract No. DACA21-96-D-0018



background concentrations. However, the majority of the detected metals exceeding SSSLs and background concentrations were present in 2 samples that had high turbidity readings at the time of sample collection. Sample location FTA-108-GP05 (turbidity greater than 1,000 nephelometric turbidity units) contained all of the 11 detected metals exceeding SSSLs and background concentrations, and sample location FTA-108-GP08 (turbidity greater than 280 nephelometric turbidity units) contained 6 of the 11 detected metals exceeding SSSLs and background concentrations).

**Volatile Organic Compounds.** A total of 19 VOCs were detected in 12 of the 18 groundwater samples collected at Parcels 88(6) and 108(7). The benzene concentration (0.28 milligram per liter [mg/L]) at sample location FTA-108-T24A-G01 (formerly designated T24A-G01) exceeded the residential human SSSL (0.0014 mg/L). The 1,2,4-trimethylbenzene concentration (0.0072 mg/L) at sample location FTA-88-GP01 slightly exceeded the residential human health SSSL (0.006 mg/L).

Naphthalene, quantified as both a VOC and a SVOC, was detected (0.00015 mg/L) in the VOC sample results from FTA-88-GP02. The naphthalene result and nearly all of the remaining VOC compounds detected (with the exception of p-cymene at three locations, toluene at one location, and chloroform at one location) were flagged with either a “J” data qualifier or a “B” qualifier. The “J” data qualifier indicates that the result was greater than the MDL but less than the specified RL, and the “B” data qualifier indicates that the compound was also detected in an associated laboratory or field blank.

**Semivolatile Organic Compounds.** Seven SVOCs, including 1,2-dichlorobenzene, 4-methylphenol, di-n-butyl phthalate, di-n-octyl phthalate, phenol, naphthalene, and bis(2-ethylhexyl)phthalate, were detected in groundwater samples collected at Parcels 88(6) and 108(7). Naphthalene, quantified as both a VOC and a SVOC, was detected (0.001 mg/L) in the SVOC sample results from FTA-88-GP01.

The concentrations of 4-methylphenol (two locations) and di-n-octylphthalate (one location) exceeded the residential human health SSSLs.

**Pesticides.** The pesticide beta-BHC was detected in two of the groundwater samples collected at Parcels 88(6) and 108(7). Each of the results was flagged with a “J” data qualifier indicating that the result was greater than the MDL but less than the specified RL.

The beta-BHC results were below the residential human health SSSL.

#### **2.3.4 Surface Water Sample Results**

Five surface water samples were collected at Parcels 88(6) and 108(7) at the locations shown on Figure 2-2. Analytical results were compared to recreational site user human health SSSLs, ESVs, and metals background screening values, as presented in Tables 2-10 and 2-11. Surface water sample locations with compounds exceeding SSSLs (background concentrations and SSSLs for metals) are shown on Figure 2-4.

**Metals.** Fourteen metals were detected in unfiltered surface water samples collected at Parcels 88(6) and 108(7). Thallium was present in three samples at concentrations exceeding human health SSSLs and background concentrations; however, the thallium results were flagged with a “B” signifying that the compound was also detected in the associated laboratory blank. Thallium (three locations) and chromium (one location) were present at concentrations exceeding ESVs and background concentrations.

**Volatile Organic Compounds.** Acetone and chloromethane were detected in surface water samples collected at Parcels 88(6) and 108(7). Each of the results was flagged with a “B” data qualifier signifying that these compounds were also detected in an associated laboratory or field blank.

None of the detected VOCs was present at a concentration exceeding human health SSSLs or ESVs.

#### **2.3.5 Sediment Sample Results**

Five sediment samples were collected at Parcels 88(6) and 108(7) at the locations shown on Figure 2-2. Analytical results were compared to recreational site user human health SSSLs, ESVs, and metals background screening values, as presented in Tables 2-12 and 2-13. Sediment sample locations with compounds exceeding SSSLs (background concentrations and SSSLs for metals) are shown on Figure 2-4.

**Metals.** Twenty metals, including aluminum, arsenic, barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium,

sodium, thallium, vanadium, and zinc, were detected in sediment samples collected at Parcels 88(6) and 108(7).

None of the detected metals was present at a concentration exceeding human health SSSLs. The concentrations of copper, mercury, nickel, and zinc exceeded ESVs and background concentrations at one location each.

***Volatile Organic Compounds.*** Five VOCs, including 2-butanone, acetone, methylene chloride, toluene, and p-cymene were detected in sediment samples collected at Parcels 88(6) and 108(7). The 2-butanone, acetone, methylene chloride, and toluene results were flagged with either a “J” data qualifier or a “B” qualifier. The “J” data qualifier indicates that the result was greater than the MDL but less than the specified RL, and the “B” data qualifier indicates that the compound was also detected in an associated laboratory or field blank.

None of the detected VOCs was present at a concentration exceeding human health SSSLs or ESVs.

***Semivolatile Organic Compounds.*** Fifteen SVOCs, including acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, bis(2-ethylhexyl)phthalate, chrysene, di-n-butyl phthalate, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene, were detected in sediment samples collected at Parcels 88(6) and 108(7). The bis(2-ethylhexyl)phthalate results were flagged with a “B” data qualifier signifying that this compound were also detected in an associated laboratory or field blank.

None of the detected SVOCs was present at a concentration exceeding human health SSSLs. The concentration of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, bis(2-ethylhexyl)phthalate (one location each); chrysene (two locations); and di-n-butyl phthalate, fluoranthene, and pyrene (one location each) exceeded ESVs, however, the bis(2-ethylhexyl)phthalate and di-n-butyl phthalate results were flagged with a “B” data qualifier indicating that these compounds were also detected in an associated laboratory or field blank.