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BACKGROUND METALS SURVEY REPORT
FORT McCLELLAN
ANNISTON, ALABAMA

FINAL

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1. INTRODUCTION

Environmental background sampling has been completed on the Main Post and Pelham Range at Fort McClellan, Alabama to provide a basis for environmental assessments to be conducted pursuant to the closure of the Post. The overall objective for the background study was to establish statistically robust background concentrations for Target Analyte List (TAL) metals in environmental media (surface water, sediment, surface soil, subsurface soil, groundwater) to be used during the Base Realignment and Closure (BRAC) environmental process. Field sampling was conducted in accordance with the Final *Background Metals Survey Work Plan* (SAIC 1997) as approved by the Fort McClellan BRAC Cleanup Team (BCT). The area included in the background investigation is shown in Figure 1-1.

1.1 PURPOSE AND SCOPE

Inorganic constituents (metals) occurring in natural environmental media (surface and subsurface soil, surface water, sediments, and groundwater) are regarded as "background" concentrations that are characteristic of uncontaminated conditions to the extent that site activities have not adversely impacted these media. The background concentrations are typically used during the assessment of site-related contamination (including risk estimates) to ensure that naturally occurring and non-site related constituents are not unnecessarily carried forward through the assessments. Organic compounds are typically regarded as site related because many of these chemicals do not readily occur in nature. However, some compounds such as polynuclear aromatic hydrocarbons and pesticides, are comparatively widespread and are sometimes considered anthropogenic background. Many metals-bearing compounds occur in nature and cannot readily be distinguished from site-related contamination without knowledge of metals concentrations in the unaffected (background) environmental media.

Information regarding the metals concentrations in environmental media for Fort McClellan and Pelham Range have been obtained for groundwater, surface water, soil, and sediment media during Site Investigation (SI) and Remedial Investigation (RI) studies (SAIC 1993,1995) conducted at the Post and at the adjacent Anniston Army Depot (SAIC 1996) between 1991 and 1996. The U.S. Geological Survey (1995) has obtained quantitative analysis of metals concentrations in streams and springs and semi-quantitative analysis of rock and soil on the Main Post and Pelham Range. However, because of enhancements in laboratory analytical detection limits and methods over time, changes in chemical concentrations that are of regulatory concern, and insufficient numbers of background samples for the purposes of statistical evaluation, additional background sampling is necessary to complete the data assessments for the ongoing and future investigations on the Post. Data summaries and a usability assessment for the existing information and the rationale and approach for the additional background sampling and reporting are provided in the following sections and Appendix A. The additional data collected under the supplemental sampling effort were combined with the usable, existing data to comprise the environmental background database for Fort McClellan and Pelham Range.

1.2 OBJECTIVES

The background metals survey activities followed a site-specific work plan (SAIC 1997) for sampling and analysis as approved by the Fort McClellan BCT. Field activities were conducted using EPA and USAEC guidance, including *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (EPA 1988); *Data Quality Objectives for Remedial Response Activities* (EPA 1987); *Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Branch* (EPA 1996); and *Geotechnical Requirements for Drilling, Monitor Wells, Data Acquisition, and Reports* (USATHAMA 1987). The specific objectives of the supplemental background sampling at Fort

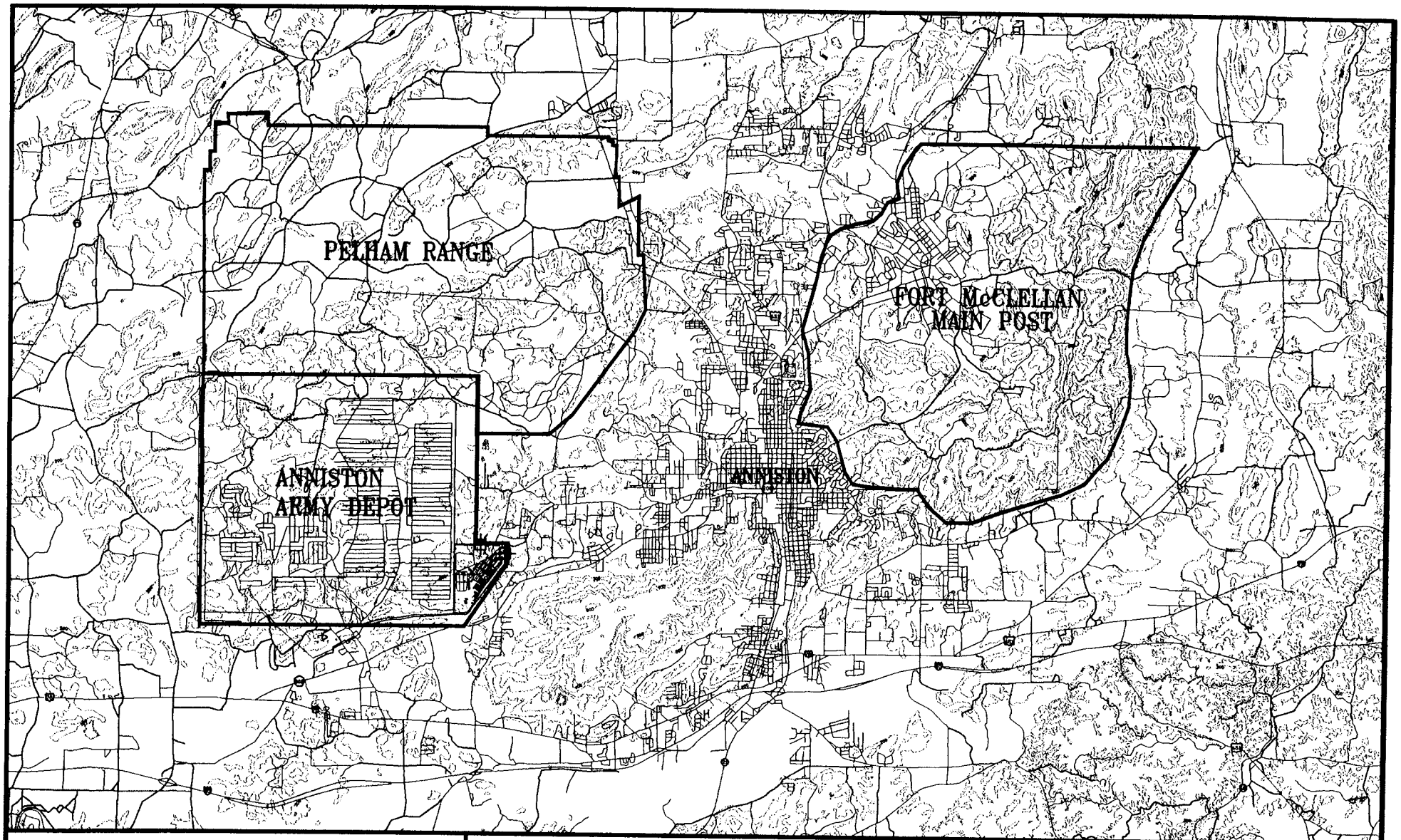
McClellan were to:

- Delineate the presence, chemical nature, concentration, and distribution of metals in surface and subsurface soil, groundwater, sediment, and surface water.
- Calculate background concentrations as twice the arithmetic mean; calculate 95% Upper Confidence Limit (UCL) on the mean; and calculate background exposure point concentrations
- Assess groundwater quality in multiple formations.

1.3 REPORT ORGANIZATION

The RI Report is structured in accordance with outlines provided in *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (EPA 1988). The contents of the report by section are presented below:

- ***Section 1. Introduction***
- ***Section 2. Environmental Setting***—This section presents the geographic and environmental setting of Fort McClellan. Physiography and topography, climate, demographics and land use, geology, soil, hydrogeology, and hydrology.
- ***Section 3. Methods and Procedures***—The rationale for all field investigation activities, methodologies, and sampling procedures are presented in this section. The section discusses methodologies for groundwater, soil, surface water, and sediment sampling, and monitoring well installation and development.
- ***Section 4. Results of Field Investigations***—This section provides the results of field sampling and analysis for TAL metals during the background sampling and includes an assessment of the existing background data set, data quality, and the compilation and evaluation of the overall background data set.
- ***Section 5. Summary and Conclusions***—This section presents the recommendations and conclusions for the background data set for Fort McClellan.
- ***Section 6. References***—This section lists the references that were used during the preparation of this report.
- ***Appendices***



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U.S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
MOBILE, ALABAMA

SITE LOCATION MAP

FORT McCLELLAN, ALABAMA

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1-1	01-0827-03-65-20-025	/DWG/FIG1-1	Jan., 1988

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2. STUDY AREA CHARACTERISTICS

Information regarding the physical characteristics of the environment in the vicinity of Fort McClellan and Pelham Range was obtained from Fort McClellan, analysis of topographic maps and historical aerial photography, compilation of meteorological data, recent research conducted by the Alabama Geological Survey, and literature pertinent to Calhoun County.

2.1 PHYSIOGRAPHY

Local relief across Fort McClellan is in excess of 1,320 feet. The lower elevations (700 feet above mean sea level [msl]) occur along Cane Creek, near Baltzell Gate Road, while the maximum elevation (2,063 feet above msl) occurs on Choccolocco Mountain, which traverses the area in a north/south direction, with the steep easterly slopes grading abruptly into Choccolocco Valley. The western slopes are more continuous, with the southern extension maintaining elevations up to 900 feet above mean sea level (msl) near the western reservation boundary. The northern extension decreases in elevation in the vicinity of Reilly Heliport. The central portion of Fort McClellan is characterized by flat to gently sloping land. The topographic relief at Pelham Range is on the order of 445 feet. The minimum elevation is 500 feet above msl, which occurs at the exit of Cane Creek from the range, and the maximum is 945 feet above msl, near the southeastern boundary. The northern sector contains broad rolling topography capped with isolated round knobs rising 75 to 90 feet above the surrounding terrain. A large, relatively flat area called Battle Drill Area is situated near the western boundary.

The Choccolocco Mountains, located in the eastern portion of the Post, form a major surface water divide. East of this divide, the reservation consists of a relatively narrow strip called Choccolocco Corridor, which extends approximately 3.5 to 4 miles from the mountains across the floodplain of Choccolocco Creek, to the base of Rattlesnake Mountain. Choccolocco Creek and its tributaries drain this portion of Fort McClellan and flow southward to the Coosa River.

2.2 METEOROLOGY

Fort McClellan is situated in a region with a temperate, humid climate. The average annual temperature is 63°F, with summer temperatures usually reaching 90°F or higher about 70 days per year. Temperatures above 100° are relatively rare. Freezing temperatures are common, but are usually of short duration. The first frost may arrive by late October. At Anniston, the average date of the first 32°F temperature is November 6 and the last date is March 30. Snowfall averages 0.5 to 1 inch. Several inches of snow may accumulate from a single storm on rare occasions as was the case during the blizzard of 1993. The average annual rainfall is approximately 53 inches and is fairly well-distributed throughout the year, as indicated in Table 2-1. The more intense rains usually occur during the warmer months and some flooding occurs nearly every year. Approximately 80 percent of the flood-producing storms are of the frontal-type and occur in the winter and spring, lasting from 2 to 4 days each. Summer storms are usually thunderstorms with intense precipitation over small areas, and these sometimes result in serious local floods.

2.3 SURFACE HYDROLOGY

The entire central portion of Fort McClellan west of the drainage divide is drained by three major creeks and their tributaries. South Branch receives runoff from the south-central portion, then joins Cane Creek before leaving the reservation on the western boundary. Cane Creek receives surface runoff from the central section. The north-central section of the Post is

drained by Cave Creek, which leaves the Post on the northwestern boundary. Other surface water features within Fort McClellan include Lake Yahou (13.5 acres), Reilly Lake (8.5 acres), Cappington Ridge (0.3 acres), Duck Pond (0.5 acres), and an aqueduct. Surface drainage is collected in small, independent networks that drain areas varying from 20 to 60 acres.

The Cane/Cave Creek watershed is among the six major watersheds occurring within Calhoun County. Cane Creek, with its tributaries (Remount, South Branch, and Ingram Creeks), originates on the Fort McClellan Reservation. Cave Creek, which occurs as a separate body while on installation lands, also originates on Post. The on-Post drainage area of this system covers approximately 20 square miles. Dothard Creek has headwaters originating both on and off the installation. These creek systems originate in the Choccolocco Mountains on the eastern boundary of the installation and flow west through the main cantonment. They are fed by springs originating from underlying limestone strata. Cane Creek also passes through the entire length of Pelham Range, but its size and volume are greatly increased by the time it reaches this land area. The Choccolocco Creek watershed occurs to the east of the Choccolocco Mountains passing in a northerly to southerly direction through the Choccolocco Corridor.

Cane Creek, which flows westward across the center of Pelham Range and its tributaries, drains almost all of Pelham Range. Drainage entering the range from the south originates in the Anniston Army Depot, which joins Pelham Range to the south. One drainageway located in the southwestern corner flows in a northerly direction and empties into a large topographic low (Battle Drill Area). Cane Creek traverses this low some 800 yards to the north, and all water collected in the low eventually drains into Cane Creek. Other surface water features include Lake Contreras (27 acres), Cane Creek Lake (7.5 acres), Willet Springs (0.8 acres), and Blue Hole (0.2 acres). Drainage from the Cane/Cave Creek watershed on Fort McClellan and Pelham Range ultimately empties into the Coosa River. Floodplains up to 2,500 feet wide traverse this sector and slope toward the center of the range. The wide floodplains are absent in the southern portion of the range.

2.3.1 Ponds, Lakes, and Springs

The named water bodies on the Main Post include Lake Yahou (13.5 acres), Reilly Lake (8.5 acres), Cappington Ridge (0.3 acres), and Duck Pond (0.5 acres), or approximately 23 acres of named water bodies. Pelham Range includes Lake Contreras (27 acres), Cane Creek Lake (7.5 acres), Willet Spring (0.8 acres), and Blue Hole (0.2 acres), or approximately 36 acres of named water bodies. Fresh water springs occur abundantly on installation lands, often appearing along the trace of thrust faults. This is especially true of Pelham Range. All described water bodies are at least in part spring fed with the exception of Lakes Yahou and Contreras. Several high capacity springs have been mapped (Moser and DeJarnette 1992) on the Main Post and Pelham Range including Welbourne Spring (200 gallons prer minute [gpm]), Reeves-Truitt Spring (58 gpm), Training Lake Spring (1,505 gpm), Camp Zinn Spring (130 gpm), unnamed spring R-48 (175 gpm), and Willett Spring (200 gpm). Unmapped springs potentially occur over much of the Fort McClellan area. Karst features including developed caves and sinkholes have been identified in the area of Fort McClellan. Weaver Cave is located approximately 1 mile northwest of the Main Post near the City of Weaver and unmapped, unnamed sinkholes have been identified on Pelham Range by Fort McClellan Natural Resources personnel (personal communication). Weaver Cave interrupts the drainage of Cave Creek from Fort McClellan prior to its reemergence approximately 1,300 feet downstream.

2.3.2 *Fresh-water Marshes*

Expansion of the installation over the years has altered the drainage patterns of the flat-lying areas on the Main Post. Although many fresh-water marshes are located along Cane Creek, most are limited to the cumulatively larger downstream watershed of Pelham Range. Only one major area, the 25-acre marsh near Reilly Lake, occurs on the Main Post. The drainage area of Cane Creek on Pelham Range has an abundance of riparian flora and fauna. Marsh areas include the 75-acre marsh beginning to the right of Gate 3 entrance; a 75-acre area to the right of Cane Creek on the Battle Drill Area; a seasonal area surrounding Blue Hole Pond; an area south of the impact area road; and a large block from Gate 13 to the Battle Drill Area where flats occur.

2.4 REGIONAL GEOLOGY

Fort McClellan (Main Post) and Pelham Range lie within the Appalachian fold and thrust structural belt (Valley and Ridge province) where southeastward-dipping thrust faults with associated minor folding are the predominant structural features. The fold and thrust belt consists of Paleozoic sedimentary rocks that have been asymmetrically folded and thrust-faulted with major structures and faulting striking in a northeast-southwest direction. Northwestward transport of the Paleozoic rock sequence along the thrust faults has resulted in the imbricate stacking of large slabs of rock referred to as thrust sheets. Within an individual thrust sheet, smaller faults may splay off the larger thrust fault resulting in imbricate stacking of rock units within an individual thrust sheet (Osborne and Szabo 1984). Geologic contacts in this region generally strike parallel to the faults and repetition of lithologic units is common in vertical sequences. The extreme eastern portion of Fort McClellan lies within the Piedmont physiographic province. Geologic formations within Fort McClellan and Pelham Range have been mapped by Warman and Causey (1962), Osborne and Szabo (1984), and Moser and DeJarnette (1992), and vary in age from Precambrian to Mississippian. On the eastern boundary of Fort McClellan, Talladega Slate occurs in a narrow band between the county line and the easternmost exposure of the Paleozoic rocks (Warman and Causey 1962).

The Jacksonville Thrust Fault is the most significant structural geologic feature in the vicinity of Fort McClellan both for its role in determining the stratigraphic relationships in the area and for its contribution to regional water supplies. The trace of the faults extends northeastward for approximately 39 miles between Bynum, Alabama and Piedmont, Alabama. The fault is interpreted as a major splay of the Pell City fault (Osborne and Szabo 1984). In the vicinity of Fort McClellan, the Jacksonville fault has juxtaposed the Cambrian Chilhowee Group and Shady Dolomite against Ordovician rocks of the underlying Eden thrust sheet (Osborne and Szabo 1984). The Ordovician sequence comprising the Eden thrust sheet is exposed at Fort McClellan through an eroded "window" or "fenster" in the overlying thrust sheet. The Fort McClellan window is framed on the northwest by the Rome and Conasauga formations, and by the Knox Group of the Pell City thrust sheet. Exposures of the Jacksonville Fault are rare because of deep weathering and thick colluvium accumulation. The fault contact has been observed (Osborne and Szabo 1984) in an excavated trench at Fort McClellan and was marked by approximately 6 feet of brecciated shale and mudstone in thrust contact with residuum of Shady Dolomite. The Jacksonville Fault is thought to provide a principal reservoir and conduit for groundwater movement in the region including the consistent supply of groundwater to Coldwater Spring. The Coldwater Spring has supplied water to the Anniston and Fort McClellan areas since 1890 producing an average of 32 million gallons per day (Moser and DeJarnette 1992). Large-scale lineaments have been mapped by the Alabama Geological Survey (Guthrie

1993) from satellite imagery with conjugate lineament sets trending NE-SW and NW-SE crossing regional geological structures.

The Cambrian Weisner Formation consists of interlayered shale, siltstone, sandstone, quartzite, and conglomerate and is the basal formation of the sedimentary rock sequence (Warman and Causey 1962). The Weisner Formation is mapped by Osborne and Szabo (1984) as the uppermost formation in the undifferentiated Chilhowee Group.

The Cambrian Shady Dolomite overlies the Weisner Formation east and south of the Main Post and consists of interlayered limestone and dolomite. The Cambrian Rome Formation is composed of red and green shale and siltstone with thinly interbedded light gray sandstone and calcareous layers. The Rome Formation locally occurs to the northwest and southeast of the Main Post as mapped by Warman and Causey (1962) and Osborne and Szabo (1984). The Conasauga Formation comprises the uppermost Cambrian unit and occurs northwest and southeast of the Main Post. A narrow band of the Conasauga Formation has been mapped (Osborne and Szabo 1984) immediately to the west of Reilly airfield. The Conasauga Formation also occurs along anticlinal axes in the northeastern portion of Pelham Range (Warman and Causey 1962). The Conasauga Formation is composed of interbedded limestone, dolomite, and shale.

Overlying the Conasauga Formation is the Knox Group, composed of the Copper Ridge and Chepultepec dolomite of Cambro-Ordovician age. The Knox Group carbonates consist of light medium gray, fine to medium crystalline, variably bedded to laminated, siliceous dolostone that weathers to a chert residuum (Osborne and Szabo 1984). The Knox Group underlies a large portion of the Pelham Range area. The Knox Group is overlain by Ordovician limestone and shale formations, including the Newala and Longview limestones, Lenoir Limestone, Athens Shale, Little Oak Limestone, and Chickamauga Limestone. These units occur within an eroded "window" in the uppermost structural thrust sheet at Fort McClellan and underlies much of the developed area of the Main Post. The Devonian Frog Mountain Sandstone consists of sandstone and quartzitic sandstone and locally occurs in the western portion of Pelham Range.

The Mississippian Fort Payne Chert and the Maury Formation overlie the Frog Mountain Sandstone and are composed of claystone with increasing amounts of calcareous chert toward the upper portion of the formation. These units occur in the northwestern portion of Pelham Range. Overlying the Fort Payne Chert is the Floyd Shale, also of Mississippian Age, which consists of thin-bedded, fissile brown to black shale with thin intercalated limestone layers and interbedded sandstone. Floyd Shale mapped by Warman and Causey (1962) on the Main Post of Fort McClellan was reassigned to the Ordovician Athens Shale by Osborne and Szabo (1984) on the basis of fossil data.

2.4.1 Soils

In general, the soils are acidic to very strongly acidic with pH between 4.5 and 5.5 units. The soil associations found at Fort McClellan and Pelham Range (SCS 1961) include:

- ***Anniston-Allen-Decatur-Cumberland:*** alluvium resulting from weathering of older saprolitic soils developed from sandstone, shale, and quartzite; deep, well-drained, level to moderately steep soils in valleys underlain by limestone and shale; subsoil is dark red sandy clay loam; Cumberland and Decatur soils are dark reddish-brown gravelly loam developed from limestone saprolite source.

- ***Clarksville-Fullerton:*** well-drained to moderately well-drained stony or cherty soils developed in the residuum of cherty limestone. This association is limited to the Pelham Range. The soils are generally dark brown to dark gray brown silt loam.

- ***Rarden-Montevallo-Lehew:*** moderately deep or shallow soils on ridgetops and steep slopes and in local alluvium in draws; soils developed from the residuum of shale and fine-grained, micaceous sandstone; reddish-brown to dark gray brown to yellow-brown silt loam, clay, or silty clay.

- ***Stony Rough Land:*** shallow, steep, and stony soils formed from the weathering of sandstone, limestone, and Talladega Slate; infiltration slow; contains many boulders and fragments with clayey residuum. This association underlies a large portion of the Main Post at Fort McClellan.

The distribution of surface soil types on the Main Post and Pelham Range are shown on Figures 2-1 and 2-2.

2.5 REGIONAL HYDROGEOLOGY

Groundwater flow in the vicinity of Fort McClellan was approximated in 1987 by the U.S. Geological Survey (Scott et al 1987) using existing monitoring and water supply wells in the region. Based on groundwater depth measurements obtained from wells in the composited aquifer (multiple formations) in 1985, regional groundwater elevation ranged between 800 feet above mean sea level (msl) on the Main Post to approximately 600 feet msl on Pelham Range. The developed groundwater elevation contours (50 foot intervals), indicate that groundwater flow is from the Main Post cantonment area toward the City of Weaver to the northwest. Groundwater movement on a local scale is potentially more complex exhibiting the influence resulting from large scale geologic structures and topographic variability. Because of the impacts of differential weathering, variable fracturing, and the potential for conduit flow development, the use of surface topography as an indicator of groundwater flow direction is approximate. Aquifers in the vicinity of Fort McClellan and Pelham Range are developed in residuum derived from bedrock decomposition; within fractured bedrock; along fault zones; and from the development of karst frameworks. Scott et al (1987) concluded that the aquifers in the region are hydraulically connected and that the slope of the groundwater surface broadly coincides with the surface topography.

Precipitation in the form of rain is the source of most groundwater in Calhoun County, and the thrust fault zones typical of the county form large storage reservoirs for groundwater. Precipitation and subsequent infiltration provide recharge to the groundwater flow system. Points of discharge occur as springs, effluent streams, and lakes. Shallow groundwater on Fort McClellan occurs principally in the residuum developed from Cambrian sedimentary and carbonate bedrock units of the Weisner Formation and locally in lower Ordovician carbonates. Bedrock permeability may be locally enhanced by fracture zones associated `with thrust faults and by the development of solution (karst) features (predominantly on Pelham Range). Several sinkholes have been mapped within the Pelham Range boundaries.

2.6 DEMOGRAPHICS AND LAND USE

Two major municipalities are located near Fort McClellan. The City of Anniston (population 26,623; 1990 census) adjoins the main installation on the south and west, and the

town of Gadsden (population 47,565; 1990 census) is located 28 miles to the north. The town of Weaver (population 2,715; 1990 census) is located less than 1 mile northwest of the Main Post and the town of Oxford (population 9,362; 1990 census) is located immediately south of the City of Anniston. The City of Jacksonville (population 10,283; 1990 census) is located approximately 4 miles north-northeast of the Main Post. Smaller municipalities including Pelham Heights, Sherman Heights, and Anniston Beach are located immediately west or north of the Main Post. Population figures were provided by the Calhoun County Chamber of Commerce (1993).

The Anniston area, of which Fort McClellan is a part, is one of two major population concentrations (population 25,000 or more) in the region. Fort McClellan contributes to the population of Anniston and surrounding areas. Besides the military personnel living off-Post, retired military personnel and their dependents live in the area surrounding Fort McClellan. Fort McClellan provides family housing units, Bachelor Officer Quarters, and Bachelor Enlisted Quarters to military personnel and their dependents.

Table 2-1. Normal and Total Precipitation (inches) by Month at Anniston Airport, Anniston, Alabama

Month	Average 1961-1990[a]	1990[b]	1991[c]	1992[d]	1993[e]	1994[f]	1995[g]	1996[g]	1997[h]
January	5.30	7.56	4.25	4.09	7.67	3.50	3.43	7.99	5.08
February	5.07	8.99	6.24	6.32	2.54	5.04	7.35	3.58	5.07
March	6.34	8.65	6.45	4.47	7.17	7.42	4.26	8.75	6.34
April	5.25	1.90	4.76	2.85	3.19	5.81	2.54	2.81	5.25
May	4.23	2.94	7.61	2.17	5.11	2.95	2.36	3.63	4.23
June	3.71	2.63	7.29	5.96	4.96	6.6	2.4	2.63	3.71
July	4.46	3.37	2.39	4.44	0.80	8.3	2.44	--	4.46
August	3.90	0.58	2.4	6.47	3.16	2.89	2.92	--	3.9
September	3.57	0.58	3.53	5.28	1.71	2.69	7.12	--	3.57
October	2.74	2.65	0.53	2.12	2.68	3.68	9.35	--	2.74
November	3.72	3.03	3.82	10.32	3.96	4.33	6.94	--	3.72
December	4.81	2.47	4.66	5.71	4.42	3.62	4.77	--	4.81

[a]Data obtained from *Monthly Station Normals, Anniston FAA AP, 1961-1990*, NOAA, National Climatic Data Center, 1992.
[b]Data obtained from *Climatological Data Annual Summary, Alabama, 1990*, Vol. 96, No. 13, NOAA.
[c]Data obtained from *Annual Climatological Summary for 1991, Anniston FAA Airport* , NOAA, National Climatic Data Center, 1993.
[d]Data obtained from *Summary of the Day Data (Form 5670) for 1992, Anniston FAA Airport*, NOAA, National Climatic Data Center, 1993.
[e]Data obtained from *Summary of the Day Data (Form 5670) for 1993, Anniston FAA Airport*, NOAA, National Climatic Data Center, 1994.
[f]Data obtained from *Summary of the Day Data (Form 5670) for 1994, Anniston FAA Airport*, NOAA, National Climatic Data Center, 1994.
[g]Data obtained from *The Weather Resource* at www.cdc.noaa.com on June 25, 1998.
[h]Data obtained from National Weather Service, Birmingham, Alabama, Anniston monthly normals and records 1997.
-- Data not available

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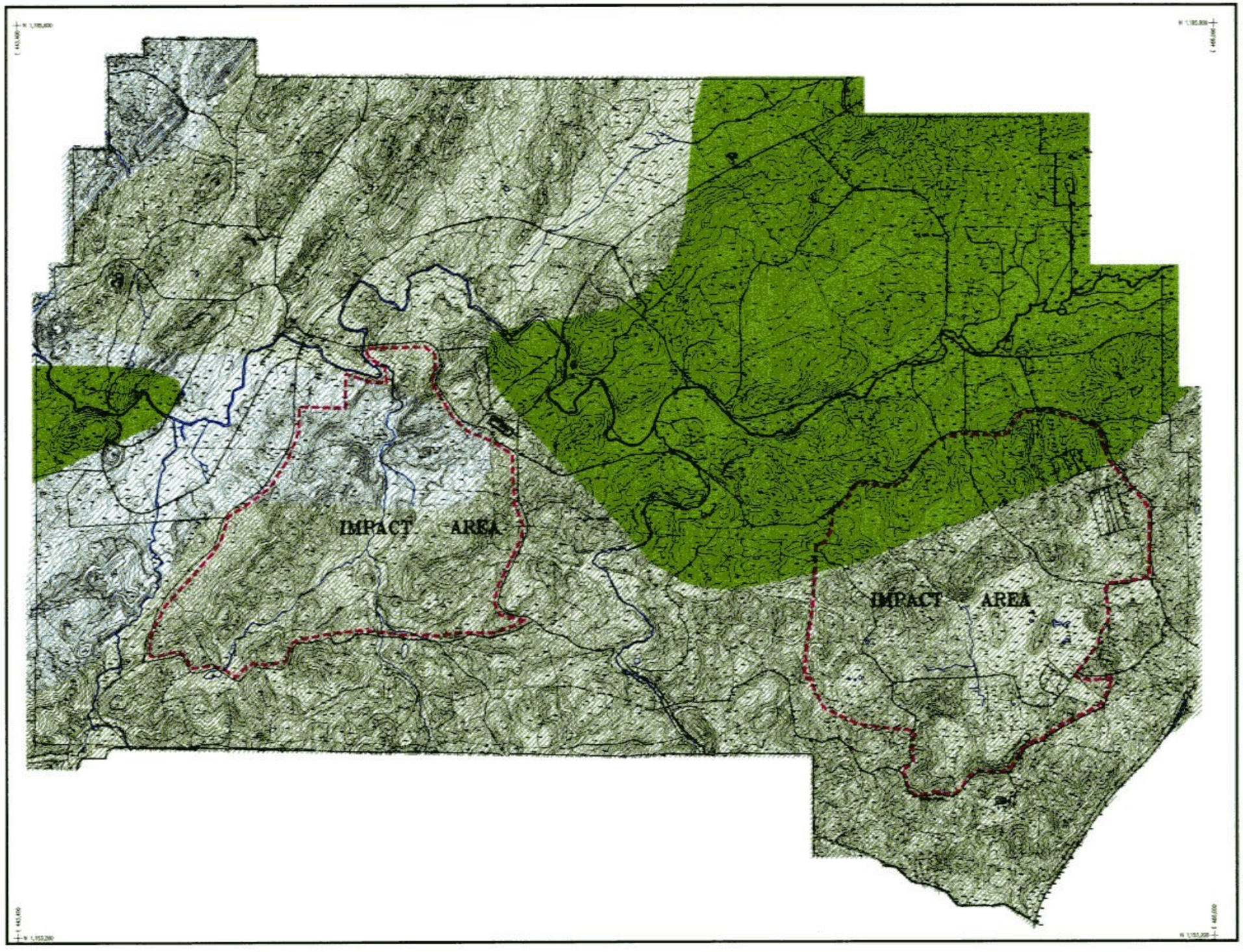


LEGEND:

- PRIMARY ROADS
- SECONDARY ROADS
- BUILDINGS
- STREAM & TRIBUTARY
- FENCE
- RAILROAD
- IMPACT AREA
- TOPOGRAPHIC CONTOUR (25 ft. INTERVAL)
- TOPOGRAPHIC CONTOUR (5 ft. INTERVAL)
- ALABAMA STATE PLANE GRID
- CLARKSVILLE-FULLERTON SERIES
- RARDEN-MONTEVALLO-LEHEW SERIES
- ANNISTON-ALLEN-DECATUR-CUMBERLAND SERIES

NOTES:

1. Soil distributions from Soil Conservation Service, 1961.
2. Base map from U.S. Army Corps of Engineers, Mobile District, 1989.

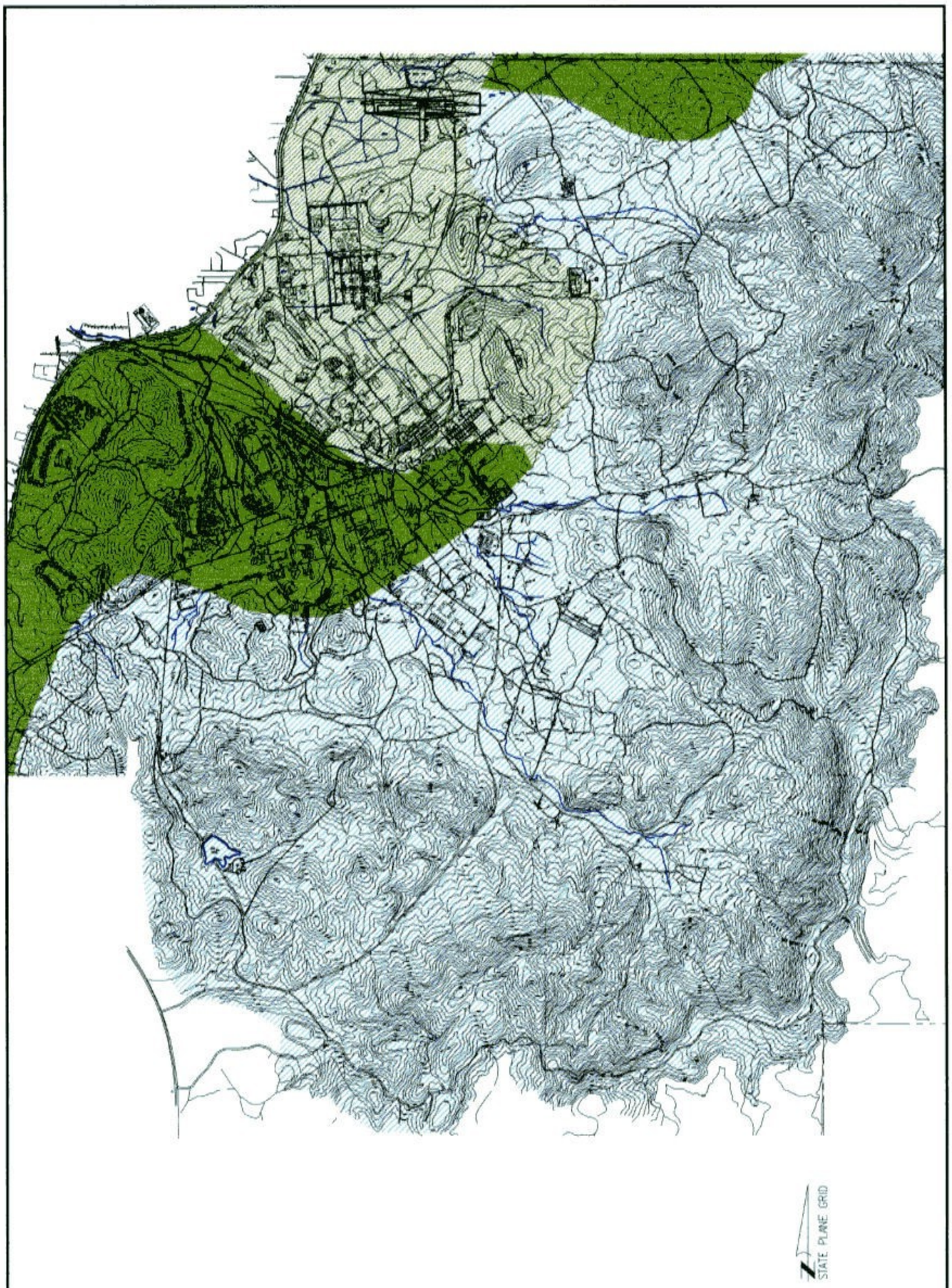
0 3500 7000

SCALE: 1" = 3500'

U.S. ARMY
CORPS OF ENGINEERS
MOBILE DISTRICT
MOBILE, ALABAMA

SOIL DISTRIBUTION MAP
PELHAM RANGE
FT. McLELLAN, ALABAMA

Figure No.	Project No.	File Name	Date
2-2	01-0827-03-6520-025	DWGS\FORT-McL\879GSALL-A	June, 1995



STATE PLANE GRID

0 1000 2000 3000 6000

SCALE: 1" = 3000'

NOTES:

1. Soil distributions from Soil Conservation Service, 1961
2. Base map from U.S. Army Corps of Engineers, Mobile District, 1989.

LEGEND:

- PRIMARY AND SECONDARY ROADS
- BUILDINGS
- STREAM & TRIBUTARY
- FENCE
- RAILROAD
- PROPERTY BOUNDARY
- TOPOGRAPHIC CONTOUR (25 ft. INTERVAL)
- ALABAMA STATE PLANE GRID
- ANNISTON-ALLEN-DECATUR-CUMBERLAND SERIES
- CLARKSVILLE-FULLERTON SERIES
- RARDEN-MONTEVALLO-LEHEW SERIES

U.S. ARMY
CORPS OF ENGINEERS
MOBILE DISTRICT
MOBILE, ALABAMA

SOIL DISTRIBUTION MAP

MAIN POST
FORT McLELLAN, ALABAMA

Figure No.	Project No.	File Name	Date
2-1	01-0827-03-3652-025	DWGS\FORT-McL\A01_MW-A	June, 1998

3. METHODS AND PROCEDURES

Additional background surface soil, subsurface soil, surface water, and sediment samples wire obtained from 25 locations on the Main Post and 25 locations on Pelham Range as shown on Sheets 1 and 2. Groundwater samples were obtained from 16 locations on the Main Post and 13 locations on (and around) Pelham Range. Environmental samples were collected in accordance with procedures contained in applicable sections of the U.S. EPA Region IV *Environmental Investigations Standard Operating Procedures and Quality Assurance Manual* (EPA 1996).

3.1 SAMPLING RATIONALE

The surface geologic map of the Main Post (USGS 1995) indicates that the area is underlain predominantly by residuum derived from the weathering of sedimentary rocks comprising the Chilhowee Group and the Athens Shale with fault-bounded fensters (predominantly in the developed Post area) exposing Cambrian-Ordovician carbonate rocks of the Little Oak and Newala Limestone Formations of the Knox Group and Cambrian Shady Dolomite. Relatively few exposures of these rock units occur on the Main Post because of cultural development and deep residuum formation. The general soil map of Calhoun County (SCS 1961) indicates that the majority of the Main Post is underlain by soils of the Stony rough land association with localized areas of the western portion of the Main Post underlain by soils of the Anniston-Allen-Decatur-Cumberland association and the Rarden-Montevallo-Lehew association. Pelham Range is predominantly underlain by carbonate rocks of the Cambrian-Ordovician Knox Group and the Cambrian Conasauga Formation. The Conasauga Formation consists of argillaceous limestone with interbedded dark gray shale. Karst features have been observed in the Knox Group carbonate rocks that underlie the majority of Pelham Range and Anniston Army Depot.

3.1.1. Sample Locations and Protocols

A comprehensive background data set is necessary to ensure that non-mission-related constituents are exempted from study area assessments and that site decisions are not driven by constituents that are reflective of background conditions in the vicinity of Fort McClellan. The principal sampling objective was to obtain a statistically robust number of samples within five environmental media (groundwater, surface water, sediment, surface soil, and subsurface soil) on Fort McClellan and Pelham Range from locations that are sufficiently distributed to obtain spatial coverage over the entirety of the Main Post and Pelham Range. The number of samples per medium (25) was established by the BCT and these samples were distributed over the site areas to avoid known or obvious training areas or activities. Sampling within the cantonment (developed) area on the Main Post was recommended by the BCT on the basis that areas of limited historical military usage within the cantonment could be representative of background conditions. Because the cantonment area is prioritized as surplus, background samples from within the area were regarded as desirable by the BCT based on the high potential for re-development in this area. The Main Post is surrounded by developed land on three sides and adjoins the Talladega National Forest to the east. Military training has historically occurred within the leased forest property and the surrounding private property is residentially and commercially developed, therefore background sampling was conducted within the Post perimeter with emphasis in the lightly-utilized mountainous areas surrounding the cantonment.

The locations for the collection of the additional background samples (Sheets 1 and 2) were selected to obtain spatial coverage of land area and surface water bodies that have not been affected (or have been minimally affected) by training activities on both Main Post and Pelham Range. Because it is not possible to state unequivocally that areas on the Main Post or Pelham Range have not been impacted by previous training activity, sample locations were selected surrounding the developed portion of the Main Post because of the

reduced history of military training in these areas. Sample locations were also sited in less disturbed areas within the cantonment area. The sediment and surface water sample locations were selected to obtain samples near the headwater portions of mapped streams upgradient from the developed Post area and from major surface water bodies on the Post. As recommended by the BCT, sediment samples were obtained from areas of deposition within a streambed, with emphasis on the collection of fine-grained sediments, to the extent that they were available within the streams. Surface water and sediment sampling was conducted in accordance with Sections 10 and 11 of the EISOPQAM (EPA 1996). Surface soil samples were obtained from the interval 0.0 to 1.0 feet below land surface (BLS) and subsurface soil samples were composited over the interval between 1.0 feet and 10.0 feet BLS as directed by the BCT. Soil sampling was conducted in accordance with Section 12 of the EISOPQAM (EPA 1996b).

Background groundwater samples were obtained from 10 existing wells on the Main Post including wells BK-G03 (Reilly Lake well), MW-5-94 (BK-G04 at Landfill #4), LF1-G01, LF2-G01, T24A-G03, BK-G06, four upgradient UST wells within the cantonment area (MW1-G01, MW2-G02, MW4-G01, MW5-G01), and six new well placements (BK-YAHOU, BK-G07, BK-G08, BK-G09, and BK-G10, BK-G11). Proposed well MW2-1 at UST site #2 could not be located for sampling and was replaced by well MW2-2 from the same site. Background groundwater on Pelham Range was obtained from two existing City of Weaver wells (CW-G01, CW-G02), existing Army wells at Rideout Hall (GW-P8802), the SOT Testing Area (GW-P8607), the SOT Administrative Area (GW-P8203), and Range 57 (GW-P8415), two designated background locations for Anniston Army Depot (LDLF-4, Williams well), two upgradient wells from Range L (RL-G01) and the Old Water Hole (OWH-G02) sites, and three newly installed well placements (GW-BKPR01, GW-BKPR02, GW-BKPR03). Groundwater samples from potable water supply wells were obtained in accordance with Section 8 of the EISOPQAM (EPA 1996). The McCullers well (background for AAD) was not sampled during the 1997 sampling round because the well was found to be in a state of disrepair. The locations of the background wells for the Main Post and Pelham Range are shown on Sheets 1 and 2.

3.1.2 Chemical Analysis Program

Environmental samples collected during the background sampling were analyzed for Target Analyte List (TAL) metals (including speciated chromium) in all media and including common anion (SO_4, HCO_3, Cl, Br, F, CO_3, NO_3, PO_4) analyses in groundwater, using USEPA SW-846 analytical methods. Analyses for mercury were conducted using cold vapor atomic absorption (CVAA) and analyses for antimony, arsenic, lead, selenium, and thallium were analyzed by graphite furnace atomic absorption (GFAA). Hexavalent chromium analyses were conducted on 20% of the samples from each medium. Target detection limits for the metals analyses and a comparison to regulatory limits are shown in Table 3-1. The detection limits for arsenic (1 μg/L) and beryllium (0.2 μg/L) in water exceed the EPA Region III risk-based concentrations (RBCs) for tap water by approximately one order of magnitude for non-detections. The detection level for silver (0.1 μg/L) in water exceeded the EPA ecological screening value for surface water by an approximate factor of five for non-detections. Soil detection limits were achieved that are below risk-based concentrations and ecological screening values with the exception of iron (50 mg/kg) in sediment.

3.1.3 Number of Additional Samples

The number of additional samples necessary to produce a statistically robust background data set for the Main Post was estimated using existing analytical data from the Fort McClellan RI and procedures outlined in *Guidance for Data Useability in Risk Assessment* (EPA 1992a) and *Guidance for Planning for Data Collection in Support of Environmental Decision-Making Using the Data Quality Objectives Process* (EPA 1993c). The estimate is provided as backup for the BCT-mandated sample size of 25 samples per medium. The approach used to evaluate the proposed sample size is based on defining an acceptable level of

statistical confidence (probability of avoiding a false positive) and power (probability of avoiding a false negative). Benchmarks for statistical confidence (80%) and power (90%) have been established by EPA (1992). At a given level of confidence and power the number of samples that would be required to detect a difference in concentration between site samples and the background reference data set can be estimated. The Minimum Detectable Relative Difference (MDRD) is the minimum difference (expressed as a percentage) necessary to demonstrate a statistically significant difference between the data sets. The EPA (1992) recommends that MDRD's of 10 to 20 percent are appropriate targets for sampling efforts.

The observed concentration variations for arsenic, lead, manganese, and vanadium in soil were calculated using the analytical data available for Fort McClellan soils. The number of additional samples was estimated using a one-tailed student t-test in conjunction with the EPA-recommended confidence level, power, and MDRD range. The data was tested using a probability plot correlation coefficient (Appendix B). Risk assessment convention assumes that the inconclusive tests were log-normally distributed. The number of samples needed for a range of MDRD's between 10% and 40% are shown on Table 3-2. Based on these results, between 4 and 35 (average 16) multimedia samples would be needed to achieve an MDRD of 15%. The Fort McClellan BCT has recommended and approved the collection and analysis of 25 samples to be obtained from surface water, sediment, surface soil, and subsurface soil on each of the Main Post and Pelham Range. Background groundwater samples were obtained from 30 locations on the Main Post, Pelham Range, the City of Weaver, and Anniston Army Depot.

3.1.4 Sample Surveying

The precise sample locations were field-determined base on the approximate map locations and the physical features encountered in the field. The approximate locations are shown on Sheets 1 and 2. The sampled locations were staked prior to sampling. Survey coordinates are in the Alabama State Plane Coordinate System (east). Monitoring wells installed during the background investigation were surveyed by Frank Hollis and Associates of Oneonta, Alabama.

3.2 RISK-BASED SCREENING VALUES

One of the initial stages in the assessment of chemical data from hazardous waste sites is the screening of detected constituents against established health-based or ecological benchmark concentrations and background concentrations to identify contaminants that exceed thresholds and are regarded as site related. The health-based concentrations are also used to evaluate laboratory detection limits to identify limits that exceed the health-based threshold concentrations and would result in artificially elevated risk estimates associated with the constituent. Detection limits that exceed the risk-based or ecological screening concentrations for individual constituents may result in estimated risk levels that will require risk management.

The regulatory thresholds for TAL metals in consumable water (as groundwater), surface water, residential soil (surface and subsurface), and sediments as obtained from published guidance are shown in Table 3-1. The primary sources of regulatory limits for the purpose of detection limit evaluation are the EPA Region III RBC table (EPA 1996) and the EPA Region IV Ecological Screening Values (EPA 1995). The EPA Region III guidance was used to assess detection limits for groundwater (as tap water), surface and subsurface soil (as residential soil), sediments (as residential soil), and surface water (as tap water) as conservative indicators of human health exposures. The EPA Region IV ecological screening guidance, supplemented by additional literature values and calculated screening values for sediment and soil, were used to assess the laboratory detection limits for ecological surface water, soil, and sediment exposures. Nutrient

constituents in sediment including calcium, magnesium, potassium, and sodium are incorporated into the background data without comparison to the laboratory reporting limit.

3.2.1 USEPA Region III Risk-Based Concentrations (RBCs)

Risk based concentration (RBC) values are calculated and published by USEPA Region III and provide a conservative benchmark for estimation of human health risk associated with chemical constituents in groundwater (as tap water), surface water (as tap water), sediments (as residential soil), residential soil, and industrial soil. The RBC values are derived for human health assessments and are calculated using default assumptions for exposure that result in a 1×10^{-6} cancer risk target and a hazard index (HI) value of 0.1 for non-cancer risk target. Detection limits exceeding the established RBC values will have a directly proportional impact on the estimated carcinogenic and non-carcinogenic risk that is attributable to an individual element. The conservative risk-based concentrations for consumable water and residential soil were used to assess the usability of the existing background groundwater, surface water, sediment, surface soil, and subsurface soil data. The surface water and sediment data also were assessed against ecological benchmarks. The USEPA Region III (EPA 1996) RBC values for the TAL metals are shown on Table 3-1.

3.2.2 Ecological Screening Concentrations

Available regulatory guidance for metals concentrations (EPA 1995, Suter and Tsao 1996) in surface water and sediments were used as benchmarks to identify detection limits that exceed chemical concentrations of ecological concern in the existing data. The EPA (1995) ecological screening levels are based on chemical concentrations that are associated with a low probability of unacceptable risk to ecological receptors. The surface water values were obtained by EPA from Water Quality Criteria documents and represent the chronic ambient water quality criteria values for the protection of aquatic life. The sediment screening values were derived by EPA from statistical interpretation of effects databases obtained from published literature. The EPA guidance currently provides screening values for 17 TAL metals (including speciated chromium) in fresh surface water and 9 TAL metals in sediment. These values were used as the primary concentrations for evaluation of existing detection limits for surface water and sediment samples against ecological thresholds (see Table 3-1).

Chemical constituents in surface water that are not listed in referenced guidance have been evaluated (Suter and Tsao 1996) using the Tier II method as described in the EPA's *Proposed Water Quality Guidance for the Great Lakes System.* The Tier II values were developed so that aquatic benchmarks could be established for constituents having less available ecological toxicology data than are required for the National Ambient Water Quality Criteria (NAWQC). The Tier II values are concentrations that would be expected to be higher than NAWQC in no more than 20% of cases. The available Tier II values were used for surface water constituents that are not addressed by other published ecological screening guidance. Tier II values are available for 8 TAL metals in surface water.

3.2.3 Calculated Ecological Sediment Screening Values

Because screening criteria are not available for all TAL elemental metals in sediment, screening concentrations were calculated for this work plan using a conservative food-chain model assuming that raccoons and herons, as representatives of terrestrial mammals and bird predators of sediment-exposed biota, eat nothing but sediment invertebrates. The approach of proposing screening values for contaminants not available in guidance is recommended by EPA (1995). The equation used to calculate the screening value in sediment is:

$$\text{Screening Value} = TRV \times BW / (I_a \times BSF + I_s)$$

where:

TRV= Toxicity reference value
BW= Body weight (kg)
I_a= Daily ingestion of animal prey (kg/d)
I_s= Daily incidental ingestion of sediment (kg/d)
BSF= Bio-sediment factor (kg sediment/kg tissue)

In the model, chemical constituents in sediment are transferred to prey at a rate given by available (Cain et al 1992) bio-sediment factors (BSFs). Additional BSF values are those used for the transfer of contaminants from soil to earthworms (HAZWRAP 1994). Rates of food and soil ingestion and body weights were taken from EPA 1993. Screening values were calculated for 10 metals constituents (including speciated chromium) in sediments for which published guidance is not available (see Table 3-1). Direct sediment toxicity benchmarks do not exist for cobalt and iron. However, an estimated screening benchmark may be derived by combining an estimated sediment/pore water distribution with a toxicity benchmark for aquatic invertebrates. This derivation assumes that sediment pore water is in equilibrium with sediment particles, so the partitioning coefficient K_D can be used to calculate the concentration of a contaminant in sediment when its pore water concentration equals a toxicity bench-mark for an aquatic invertebrate. In this case, the benchmark is the lowest chronic value (LCV) for daphnids (Suter and Tsao 1996). The derivation is as follows:

$$K_D = [C_{sed} / C_w]$$

where:
C_{sed}= concentration in sediment (mg/kg)
C_w = concentration in water (mg/L)

such that the screening concentration is:

$$Csed_{scr} = K_D \times LCV.$$

Screening values were not calculated for common nutrient metals including calcium, magnesium, potassium, and sodium. These metals were assessed against the USEPA RBC values for residential soil.

3.2.4 Calculated Ecological Soil Screening Values

Screening levels were established by calculating the dietary exposure of screening receptors to contaminants in soil and using published NOAELs to derive a risk-based dietary benchmark. The screening intake equation, based on *EPA Region IV Guidance for Wildlife Screening Values* (EPA 1995), conservatively assumes that the entire diet of the receptor consists of soil, all of which contains a uniform concentration of the analyte. Receptors are not unit-specific but, instead, are the animals used in the analyte-specific toxicity studies. However, since small omnivorous mammals and songbirds were used as unit-specific terrestrial receptors for risk assessment, toxicity tests using species most closely related to them (e.g., mice and rats rather than primates, or doves rather than ducks) were used when they were available. Benchmarks were derived for both mammals and birds. The dietary benchmark equation is derived below:

$$SI = Cs_{scr} \times f / w$$

where:

SI =Screening intake in milligrams per kilogram body weight per day (mg/kg/d)
Cs_{scr} =Screening soil concentration in mg/kg
f =Feeding rate of test animal in kg/d, and
w =Body weight of test animal in kg.

The screening benchmark is the soil concentration at which the screening intake is equal to the No Observed Adverse Effects Level (NOAEL in mg/kg/d). Therefore,

$$(Cs_{scr})\ (f/w) = \text{NOAEL and,}$$
$$Cs_{scr} = (\text{NOAEL})\ (w/f)$$

Toxicity benchmarks reflecting a dietary NOAEL are used preferentially for benchmarks in the soil screening. Where NOAEL tests could not be found, other tests with endpoints of lowest observed adverse effect level (LOAEL) are used, and the LOAEL is divided by 10 to substitute for a NOAEL. Feeding rates and body weights of the animals used in the toxicity tests, as well as results of the toxicity screening for inorganics other than iron and silver, are published in summaries of the toxicity tests (Sample et al. 1996). Few toxicity data are available for iron and silver. No adverse effect was reported when dogs were given 800 mg $FeCl_2$ daily by oral administration. Assuming a body weight of 10 kg, this corresponds to a NOAEL of 36 mg Fe/kg/d. Using an allometric relationship (Nagy 1987), food intake by the dog was calculated as 0.45 kg/g:

$$FIR=(0.0687)(BW^{0.822}) = (0.0687)(10^{0.822})= (0.0687)(6.65)= 0.45 \quad \text{where:}$$

FIR= food ingestion rate (kg/d)
BW= body weight (kg)

In animals deficient in selenium and vitamin E, chronic silver ingestion appears to exacerbate selenium deficiency, resulting in hepatic damage. However, in rats that were not deficient in selenium and vitamin E, exposures of 140 mg/kg/d were well tolerated (Bunyan et al. 1968). Therefore, a NOAEL of 140 mg/kg/d for rats was used to derive the screening level for silver.

3.3 DATA VALIDATION

A comprehensive quality assurance/quality control (QA/QC) program was followed during the background metals survey activities conducted at Fort McClellan, Alabama. The overall objectives for the background study are to establish background concentrations for target analyte list (TAL) metals in environmental media (i.e., surface water, surface soil, subsurface soil, and groundwater) to be used throughout the Base Realignment and Closure (BRAC) process. Analytical work for the background samples was performed by QST Environmental (QST) in accordance with the *U.S. Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW846.* The U.S. Environmental Protection Agency (EPA) *Contract Laboratory Program* (CLP) *Statement of Works for Inorganic Analysis* and the *EPA CLP National Functional Guidelines for Inorganic data Review* (February 1994) were used during the evaluation of the QC data. Environmental data used to construct the background data sets (human and ecological receptors) has been collected between 1991 and 1997. Prior to 1996, the data has been validated in accordance with U.S. Army Environmental Center (USAEC) protocols (USATHAMA 1990) and using the

IRDMIS data validation. Analytical data obtained using non-Army methods were validated using National Functional Guidelines. During the validation process, data were qualified based on the results of the QA/QC samples (e.g., laboratory and field blanks). The data obtained under the supplemental sampling program were analyzed exclusively using EPA methods and are being validated under the National Functional Guidelines. Data found to be unsuitable by data validation are excluded from the background data set.

3.4 CALCULATION OF SUMMARY STATISTICS

The arithmetic mean for each TAL metal was calculated using the laboratory data incorporated into the overall database. The results of duplicate samples collected to evaluate field precision were averaged with the duplicated sample prior to inclusion in the calculation of the arithmetic mean and standard deviation. Non-detected values were used at one-half of the analytical detection level in the calculation of the arithmetic mean and standard deviation. The range (minimum and maximum) of CRL's and detected concentrations are summarized in Section 4 for all inorganic TAL constituents. A background threshold established as twice the arithmetic mean was calculated for each TAL metal.

The underlying sample distribution (normal or log-normal) for each inorganic constituent was evaluated using the probability plot correlation coefficient (EPA 1992a). The probability plot correlation coefficient is a measure of the linearity of points on a scatter diagram with higher coefficients indicating a greater degree of correlation supporting the determination of the underlying distribution. The resulting correlation coefficient (R) is compared to a tabulation of critical values for the appropriate number of samples at a 95 percent confidence level. If the coefficient for the untransformed data is greater than the critical value, then the data are determined to be normally distributed. If the coefficient is less than the critical value then the calculation is repeated using logarithmically transformed data with the result again compared to the critical value. If the resulting correlation coefficient for the transformed data is greater than the critical value then the data are log-normally distributed.

3.5 DERIVATION OF EXPOSURE POINT CONCENTRATIONS

Exposure point concentrations (EPCs) are the concentrations of chemical constituents in a given medium to which human or ecological receptors are exposed at the point of contact. Background EPCs were calculated for each TAL metal in the background analytical data according to medium using EPA's *Supplemental Guidance to RAGS: Calculating the Concentration Term* (EPA 1992b). Methods used to derive EPCs are dependent on the underlying shape of the distribution of the data set. If the data were found to be normally distributed, the EPC was calculated as the 95% upper confidence limit (UCL) on the arithmetic mean of the data using the Student's t-statistic. If the data are found to be log-normally distributed or a distribution cannot be defined, the EPCs were calculated as the 95% UCL on the arithmetic mean using the H-statistic (EPA 1992b). The H-statistic is used to compute a one-sided 95% UCL on a log-normal mean (Gilbert 1987). In accordance with EPA guidance, if the 95% UCL exceeds the maximum value observed in the data set for the individual constituent, the maximum value was used as the EPC. Non-detected results were used at one-half the certified reporting limit and included in the calculations of the UCL values. Field duplicate analytical results were averaged and included in the calculation of the EPCs.

Table 3-1. Laboratory Detection Limits and Screening Values
Fort McClellan, Alabama

Parameter	Soil/Sediment: Proposed Laboratory Reporting Limit (mg/kg)	Soil/Sediment: Actual Laboratory Reporting Limit (mg/kg)	Soil/Sediment: USEPA III RBC Residential Soil (mg/kg)	Soil/Sediment: Lower Ecological Screening Soil (mg/kg)	Soil/Sediment: USEPA Ecological Screening Sediment (ppm)	Soil/Sediment: Ecological Screening Sediment (mg/kg)	Groundwater/Surface Water: Proposed Laboratory Reporting Limit (ug/L)	Groundwater/Surface Water: Actual Laboratory Reporting Limit (ug/L)	Groundwater/Surface Water: USEPA III RBC Tap water (ug/L)	Groundwater/Surface Water: USEPA-Ecological Surface Water (ug/L)	Groundwater/Surface Water: Ecological Tier II Surface Water (ug/L)
Aluminum	10	10	78,000	10.5		28	25	50	37,000	87	
Antimony	0.05	0.1	31	0.7	2	2.1	0.5	0.5	15	160	
Arsenic	0.1	0.5	0.43	0.7	7.24		1	1.0	0.045*	190	
Barium	0.5	2	5,500	63.8		230	0.5	1.0	2,600		4
Beryllium	0.02	0.05	0.15	8.3		21	0.2	0.2	0.016*	0.53	
Calcium	50	75	Nutrient				50	100	Nutrient		116,000
Cadmium	0.02	0.02	39	2.6	0.676		0.1	0.1	18	0.66	
Chromium^{total}	0.2	1	78,000	1.7	52.3		1	10	37,000	117.3	
Chromium^{6+}	0.02	0.02	390	1.7	52.3		2	20	180	11	
Cobalt	0.2	0.2	4,700	112.4		0.23	0.5	20	2,200		23
Copper	0.2	0.5	3,100	85.4	18.7		0.5	5.0	1,500	6.54	
Cyanide	1	0.5	390	858.8		3,355	10	5.0	180	5.2	
Iron	25	50	23,000	800		3.95	10	45	11,000	1,000	
Lead	0.2	0.5	400	0.9	30.2		0.5	0.5	15	1.32	
Magnesium	20	25	Nutrient				10	100	Nutrient		82,000
Manganese	2.5	4	390	374.2		3,516	0.5	5.0	180		120
Mercury	0.1	0.04	7.8	0.4	0.13		0.025	0.200	3.7	0.012	
Nickel	0.2	2	1,600	140.7	15.9		1	15	730	87.7	
Potassium	50	100	Nutrient				200	200	Nutrient		53,000
Selenium	0.2	0.5	390	0.8		1	2	2.0	180	5	
Silver	0.05	0.02	390	1750	0.733		0.1	0.1	180	0.012	
Sodium	10	50	Nutrient				100	100	Nutrient		680,000
Thallium	0.01	0.01	5.5	0.1		0.03	0.1	0.1	2.6	4	
Vanadium	0.2	1	550	2.0		4.19	1	10	260		20
Zinc	2	5	23,000	228.1		615	1	30	11,000	58.91	

[ ]=Highlighted cells indicate that one-half of the laboratory detection limit exceeds the regulatory limit or screening value for human health or ecological effects.
Laboratory RL's from QST Laboratory, 1998.
USEPA Region III RBC values obtained from Region III internet site March 1997.
USEPA Region IV ecological screening values from *"Draft Ecological Screening Values"*, Ecological Risk Assessment Bulletin No. 2, November, 1995; USEPA 1995.
Ecological screening values calculated by SAIC, 1997.
Tier II ecological values for surface water from *"Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aqutic Biota: 1996 Revision"*, Suter II, G.W. and Tsao, C.L., June 1996.
* EPA Maximum Contaminant Level (MCL) for arsenic in drinking water is 50 µg/L; MCL for beryllium is 4 µg/L.

Table 3-2. Estimated Number of Background Samples Required to Achieve Target MDRD
Fort McClellan, Alabama

Analyte	Power (%)	Confidence Level (%)	Measured Coefficient of Variation (%)	Minimum Detectable Relative Difference (MDRD)				
				10%	15%	20%	30%	40%
Arsenic	90%	80%	41.70%	79	35	20	9	5
		90%	41.70%	115	52	29	14	8
		95%	41.70%	150	68	39	18	11
	95%	80%	41.70%	108	48	27	12	7
		90%	41.70%	150	67	38	17	10
		95%	41.70%	190	85	48	22	13
	99%	80%	41.70%	165	74	42	19	11
		90%	41.70%	216	96	55	25	14
		95%	41.70%	263	118	67	30	18
Lead	90%	80%	19.30%	17	8	5	2	1
		90%	19.30%	25	12	7	4	2
		95%	19.30%	33	16	9	5	3
	95%	80%	19.30%	23	11	6	3	2
		90%	19.30%	33	15	9	4	3
		95%	19.30%	42	19	11	6	4
	99%	80%	19.30%	36	16	9	4	3
		90%	19.30%	47	21	12	6	4
		95%	19.30%	57	26	15	8	5
Manganese	90%	80%	27.10%	33	15	9	4	2
		90%	27.10%	49	22	13	6	4
		95%	27.10%	64	29	17	8	5
	95%	80%	27.10%	46	21	12	5	3
		90%	27.10%	64	29	17	8	5
		95%	27.10%	81	37	21	10	6
	99%	80%	27.10%	70	31	18	8	5
		90%	27.10%	92	41	24	11	7
		95%	27.10%	112	51	29	14	8
Vanadium	90%	80%	13.90%	9	4	3	1	1
		90%	13.90%	14	6	4	2	2
		95%	13.90%	18	9	5	3	2
	95%	80%	13.90%	12	6	3	2	1
		90%	13.90%	17	8	5	3	2
		95%	13.90%	22	11	7	4	3
	99%	80%	13.90%	19	8	5	2	1
		90%	13.90%	25	11	7	3	2
		95%	13.90%	30	14	9	5	3

Transition metals concentrations from Main Post soil data. Distributions determined to be lognormal based on goodness-of-fit testing using probability plot correlation coefficient.
EPA recommends a target of 80 percent for confidence, 90 percent for power, and 10 to 20 percent for MDRD.

The following documents were used to support the statistical sampling analysis:
(1) Guidance for Data Useability in Risk Assessment (Part A) (EPA 1992b).
(2) Guidance For Planning for Data Collection in Support of Environmental Decision Making Using the Data Quality Objectives Process, Interim Final (EPA 1993b).

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4. BACKGROUND RESULTS

The results of the assessment of suitability of the existing background data for inclusion in the overall background data set, the data quality assessment for the supplemental data, and the analytical results for the supplemental data are provided below. The summary statistics for the combined background data set and the calculated background thresholds are also provided in the following sections.

4.1 EXISTING BACKGROUND DATA BASE ASSESSMENT

The existing background data base for Fort McClellan and Pelham Range consists of samples collected on Post between 1991 and 1995 and incorporates data collected during an ongoing remedial investigation at the Anniston Army Depot between 1994 and 1996. These investigations were conducted under the U.S. Army Environmental Center's 1990 QA/QC program. However, because the chemical investigations were conducted independently and by different analytical laboratories, laboratory detection limits vary for each study. In addition, regulatory criteria for evaluating environmental data were revised in 1995 and it is necessary to evaluate the existing chemical data against these criteria to ensure that the data are suitable for inclusion in a comprehensive background data set.

The utility of the existing background database of information was evaluated by comparison of the laboratory reporting limits (CRL) for the existing data to risk-based concentrations (RBC's) as calculated by USEPA Region III, USEPA Region IV ecological screening values, published ecological benchmarks, and calculated ecological screening values for sediment and soil. Analytical data with detection limits that exceed the RBC or screening values by greater than a factor of two were excluded from the background data set to the extent that laboratory analytical methods are capable of achieving the RBC or ecological screening concentrations. The factor of two criteria is recommended as a conservative limiting value for the existing data set because non-detect values are typically utilized in quantitative risk assessment at one half of the detection limit. Because human health risk and ecological assessments (and screenings) are conducted independently of each other and the risk-based criteria are different for these assessments, some of the surface water or sediment data that is questionable for human health assessment may be usable for ecological assessment or vice versa. Background concentrations for human and ecological receptors were established incorporating the existing data that meets the most stringent criteria established for either type of assessment. Because groundwater is not evaluated as a pathway for ecological assessments, detection limits for analyses in these media will only be compared to human health RBC's. A flow diagram showing the steps associated with the existing data assessment is shown in Figure 4-1.

4.1.1 Historical Background Data

The existing background database for Fort McClellan and Pelham Range consists of samples collected on Post between 1991 and 1995 and also incorporates data collected during a remedial investigation at the Anniston Army Depot between 1994 and 1996. Table 4-1 summarizes the laboratory reporting limits for metals during each study. The availability of the existing chemical data for inclusion in the overall background data set is based on the comparison of laboratory detection limits to conservative human health and ecological thresholds. These thresholds have been described in Section 3. Detection limits for individual parameters that exceed the human health and ecological screening values by greater than a factor of two were excluded from the background data set to the extent that current laboratory analytical methods are capable of achieving the RBC or ecological screening concentrations. Historical background sample locations are shown on Figure 4-2 (Anniston Army Depot) and Sheets 1 and 2 (Fort McClellan).

4.1.1.1 Fort McClellan Main Post Historical Data

Historical analytical data for thallium in surface water and groundwater was eliminated from the data set because the detection limit exceeds the RBC value by a factor of 48 and analytical methods are available to achieve the regulatory criteria. Detection limits for arsenic and beryllium in surface water and groundwater exceed the RBC values, however, the RBC concentrations cannot be attained by laboratory analytical methods therefore the arsenic and beryllium data for waters will not be eliminated from the data set. Analytical detection limits for cadmium, copper, lead, mercury, and silver in surface water exceed the ecological screening criteria, but do not exceed the human health RBC's. Analytical data for these elements were retained because the screening concentrations cannot be attained by current laboratory analytical methods. Analytical detection limits for arsenic, beryllium, and thallium in surface soil and sediment exceed the RBC criteria and laboratory methods are available to achieve lower detection limits, therefore these data were eliminated from the database.

4.1.1.2 Pelham Range Historical Data

Comparatively fewer multimedia background samples have been previously obtained on Pelham Range as compared to the Fort McClellan Main Post and the Anniston Army Depot. The detection limits for arsenic and beryllium in groundwater exceeded the RBC values. However, the RBC concentrations cannot be attained by current laboratory analytical methods, therefore the arsenic and beryllium data were not eliminated from the background data set.

4.1.1.3 Anniston Army Depot Historical Data

Historical analytical data for thallium in groundwater and surface water will not be included in the background data set because the detection limit exceeds the RBC value and laboratory methods are available to achieve lower detection limits. Analytical detection limits for arsenic and beryllium in groundwater and surface water exceed the RBC criteria. The RBC concentrations cannot be attained by current laboratory analytical methods, therefore the arsenic and beryllium data were not eliminated from the background data set. Cadmium and mercury in surface water can be practically detected at the ecological screening thresholds, therefore the existing data were eliminated from the background data set. The detection limit for silver exceeds the ecological screening criteria, however, the screening value (0.012 μg/L) cannot be achieved in the laboratory therefore the existing data was retained in the background database for surface water.

Beryllium was eliminated in the surface soil, subsurface soil, and sediment data set because analytical methods are available to achieve the RBC and ecological screening criteria for beryllium in these media. The detection limit for antimony in sediment exceeded the ecological screening criteria. Analytical data for antimony will not be included in the background data set because analytical methods are available to achieve the screening concentrations.

4.1.1.4 U.S. Geological Survey Data

Analytical data obtained by the U.S. Geological Survey on the Main Post and Pelham Range is provided in Appendix C for informational purposes. These data will not be incorporated into the background data set for Fort McClellan because of the lack of available QA/QC information for the water sampling and the semi-quantitative nature of the chemical analyses of soil and rock samples.

4.2 DATA QUALITY ASSESSMENT FOR SUPPLEMENTAL DATA

This section presents a summary of the results of the data quality assessment conducted for the laboratory data associated with the samples collected during the background study at Fort McClellan. Included is a summary of the project data quality objectives (DQOs) including a discussion on precision, accuracy, representativness, comparability, and completeness (PARRC). A detailed project data quality assessment is presented in Appendix E that includes all data validation qualifiers that were applied to the data. The number of soil, sediment, surface water, and groundwater samples collected during the supplemental background study, including field QC and selected laboratory rinsate QC samples is provided in Table 4-2.

4.2.1 *Precision*

Analytical data precision was evaluated based on the analysis of three different types of QC samples including matrix spike/matrix spike duplicates (MS/MSDs), laboratory duplicates, and field duplicate sample analyses. The first type of QC sample used to assess the precision of the data quality was the relative percent differences (RPDs) of the MS/MSDs and laboratory duplicates. All MS/MSDs were within the control limits specified within the National Functional Guidelines with the exceptions listed here and in Appendix E. Six inductively coupled plasma (ICP) soil, 5 ICP/mass spectroscopy (MS) soil, 1 mercury water, and 3 phosphorus water RPDs did not meet the required RPD criteria for MS/MSD and laboratory duplicate analysis, and the associated data points were qualified as estimated "J" due to these RPDs. These qualified data points are acceptable and usable estimates.

Field duplicate samples were included to evaluate field precision. Duplicate sample pairs were collected to ascertain the contribution of variability (i.e., precision) due to environmental media and sampling precision technique. Data have not been qualified based on the results of field duplicates, since laboratory data validation functional guidelines for evaluating inorganic analyses do not include control limits for RPD values. No specific control limits for field duplicates were established in part because the natural heterogeneity of the environmental media was much greater than the variability imparted by field and laboratory activities.

Based on an evaluation of MS/MSD, laboratory duplicate, and field duplicate RPDs, overall precision is acceptable and the analytical DQO for precision is met. A discussion of MS/MSD, laboratory duplicate, and field duplicate results is presented in Appendix E.

4.2.2 *Accuracy*

Analytical accuracy was assessed through the use of MSs and laboratory control samples (LCSs). Matrix spike analyses were one type of QC used to assess accuracy. Various percent recoveries for metals, cyanide, and total phosphorus in soil and water were outside the acceptable QC limits. The data points associated with MS/MSD recoveries that are outside the acceptable ranges were qualified as "UJ" or "J" These qualified data points are acceptable and usable estimates.

Five water samples were qualified as rejected for barium due to low MS results and possible negative matrix interference. The samples that were rejected are: BG-D10 (SAICRB05), BGP-D08 (SAICRB06), BGP-D01 (SAICRB07), BG-S09 (SAICRB08), and BG-D03 (SAICRB09). Data points that were rejected are considered unusable and will not be used in the risk assessment.

The LCS was another type of QC used to assess analytical accuracy. Based on an evaluation of the data, all criteria were met with the following exceptions: 37 antimony, 26 selenium and 23 mercury soil data points were associated with LCS recoveries that were outside the required control limits. The

data points associated with LCSs outside the acceptable ranges were qualified as "UJ" or "J". These qualified data points are considered to be acceptable and usable estimates.

Method blank analysis was conducted with each analytical lot of environmental samples analyzed, and the results evaluated for compounds that may potentially interfere with accurate quantitation of a target compound. Cadmium was detected in the method blank analyzed with a lot of soil samples and sodium was detected in the continuing calibration blank (CCB) analyzed with a water lot. As a result, 14 cadmium values in soil and 1sodium result in water were qualified as "U," since the concentrations detected in these samples were less than 5 times that detected in the associated blanks. These qualified data points are considered to be acceptable but estimates, and will be used in the risk assessment. The CCBs were not run at a frequency of 10 percent for the analysis of ICP metals and cyanide in water and soil samples. The potential effect on the data because of this is considered to be minimal, and therefore, no action was taken.

Equipment rinsate samples were collected to assess the degree of potential equipment cross-contamination or to ensure successful decontamination. Common elements, such as aluminum, calcium, iron, magnesium, manganese, sodium, potassium, and zinc, were noted in many equipment rinsates at levels different from the reporting limits. Constituents including antimony, barium, cadmium, chromium, and nickel, were observed at levels below the reporting limits but greater than the MDLs. It is likely that these concentrations are the result of residuals remaining on field equipment after decontamination. The data validation qualifier "U" was applied to eight antimony, three cadmium, and three nickel results in soil samples, and three barium, seven calcium, six magnesium, four sodium, and four lead results in water samples, since the concentrations detected in these samples were less than 5 times that detected in the associated blanks. These qualified data points are considered to be acceptable estimates, and will be used in the risk assessment.

Based on an evaluation of the MS, LCS, method blank, and equipment rinsate blank results, overall analytical accuracy is acceptable, except where noted. The field DQO for analytical accuracy is met. Additional discussion of the field QC results is presented in Appendix E.

4.2.3 *Representativeness*

Representativeness was defined as the degree to which the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling location, a process condition, or an environmental condition. Factors that affect the laboratory representativeness of the analytical data include improper preservation, holding time exceedance, use of standard analytical methods, and matrix or analyte interferences. Representativeness is the qualitative parameter concerned most with the proper design of the sampling program. A sampling approach was implemented at Fort McClellan to evaluate representative background conditions by distributing samples within the variety of geological and hydrogeological subdivisions at Fort McClellan to the exclusion of areas obviously or historically impacted by mission-related activities. Based on this approach, surface soil, subsurface soil, and groundwater analytical results were determined by the Fort McClellan BCT to be representative of a single distribution (by medium). Analytical data for these media were combined into three comprehensive background data sets for samples obtained from the Main Post and Pelham Range.

Representativeness was assessed by reviewing the drilling techniques and equipment, sample collection methods, equipment, and sample containers used during the background investigation, in addition to evaluating the RPD values calculated from the duplicate samples. The reproducibility of a representative set of samples reflects the degree of heterogeneity of the sampled medium, as well as the effectiveness of the sample collection techniques. During the background investigation, sample methods and repetitive sample events were selected to ensure that an environmental sample accurately represented the characteristic population from which it was obtained. Based on the evaluation of the factors described above and summarized in Appendix E, the samples collected during the background study are considered to be representative of the background environmental condition at Fort McClellan with the exception of outlier values identified by USEPA in surface water and sediment.

Surface water and sediment data distributions for the combined Main Post and Pelham Range analytical results were qualitatively evaluated using probability plot (p-plot) analysis (T. Simon written communication 1998). Outlier analyte values for sediment included antimony (BG-D06, BG-D12, BG-D17, SD-BK-001, SD-BK-002), arsenic (BG-D17), beryllium (BG-D04), cobalt (BGP-D02), copper (BG-D06, BG-D16, BGP-D17, BGP-D18), lead (BG-D06, BG-D17, T5-D02), manganese (BGP-D02), and thallium (SD-BK-001, SD-BK-002) as identified by USEPA and SAIC. Outlier values for surface water included antimony (BG-W06, BGP-W03, BGP-W19), chromium (BG-W04, BGP-W03, BGP-W19), cobalt (BG-W04, BGP-W03, BGP-W19), copper (BG-W04, BGP-W13, BGP-W19), mercury (BGP-W03), selenium (BGP-W19), silver (BGP-W19, BGP-W22), thallium (BG-W04, BGP-W03, BGP-W19), vanadium (BGP-W03, BGP-W19), and zinc (BG-W04). Outlier values were identified by USEPA in a memorandum dated May 28, 1998.

4.2.4 *Comparability*

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another and is limited to the other PARCC parameters, because only when precision and accuracy are known can one data set be compared to another. To optimize comparability, only the specific methods and protocols that were specified in the QAPP (SAIC 1994), as required by the USATHAMA *Quality Assurance Program, PAM 11-41* (January 1990), were used to collect and analyze samples during the background investigation. By using consistent sampling procedures, all data sets were comparable within the sites at the installation, or among U.S. Army facilities nationwide, to ensure that remedial action decisions and priorities were based on a consistent database. Based on the precision and accuracy assessment presented above, the data collected during the background study are considered to be comparable with the data collected during previous investigations at Fort McClellan.

4.2.5 *Completeness*

The completeness criteria assesses the amount of valid data that is obtained from the laboratory analysis process and sampling. For data to be considered valid, it must meet all acceptance criteria, including accuracy and precision, as well as any other criteria specified by the analytical methods used. Furthermore, project completeness was defined as the percentage of data that may be used to compare with regulatory limits and to conduct quantitative data evaluations. For analytical data to be considered usable for quantitative assessments, each data point must be satisfactorily validated. Results that have been qualified for various reasons may be considered to have encountered minor problems with limited impact on the data quality. Data were qualified as rejected when significant errors were identified. Rejected data may not be expected to be representative, but may be useful in making broad observations and conclusions. Rejected results are not to be used in quantitative evaluations. DQOs for the background study were set at 90 percent for the field sampling and laboratory completeness. Based on the evaluation of the field and laboratory QC results

presented in Appendix E, 99.8 percent of the total environmental sample data collected during the background study are available as the basis for establishing background environmental concentrations at Fort McClellan.

4.3 BACKGROUND ANALYTICAL RESULTS

Additional background data was obtained from groundwater, surface water, sediment, surface soil (0 to 1 foot depth) and subsurface soil (0 to10 foot depth) between July, 1997 and October, 1997. Fifty shallow soil borings were drilled for the purpose of collecting composite subsurface soil samples. Nine monitoring wells (BK-G07, BK-G08, BK-G09, BK-G10, BK-G11, BK-YAHOU, BKPR-01, BKPR-02, and BKPR-03) were installed as additional background wells. Drilling and well installation were completed by Miller Drilling Company of Knoxville, Tennessee. Laboratory analysis of all environmental samples was completed by QST Environmental of Gainesville, Florida. Surface and subsurface clearance for explosives and ordinance avoidance was completed by EOD Technologies of Knoxville, Tennessee. The background sampling locations on the Main Post and Pelham Range are shown on Sheets 1 and 2.

4.3.1 Qualitative Groundwater Chemical Composition

Groundwater quality in Talladega and Calhoun counties was investigated by Moser (1988) and Moser and Dejarnette (1992). Samples were collected in 1987 and 1988 from springs and private wells ranging in depth from 65 to 263 feet below land surface (BLS). A trilinear (Piper) diagram (Figure 4-3) of the regional (Calhoun and Talladega counties) and local (Fort McClellan) groundwater analyses indicates that the groundwater is predominantly a calcium-bicarbonate type, which is characteristic of carbonate regions. Groundwater data used to construct the diagram represents analyses taken from wells and springs in various geological formations ranging in age from Cambrian to Mississippian and representing rock types from residuum to shale to limestone. The distribution of the water analyses on the trilinear diagram suggests that the groundwater quality overlaps considerably across geological formations. A trilinear diagram (Figure 4-4) of data obtained from the Main Post and Pelham Range background wells also reflects the overlap in water quality between the background wells and does not support the differentiation of groundwater between the two Post areas on the basis of water quality.

4.3.2 Supplemental Background Groundwater Data

Additional background groundwater samples were obtained from 16 wells on the Main Post and 13 wells on Pelham Range. The wells sampled during the background survey and comprising the background data set are listed in Table 4-3 and are shown on Sheets 1 and 2. Table 4-4 summarizes the analytical results for the sampled background wells.

4.3.3 Supplemental Background Surface Water Data

Additional background surface water samples were obtained from 25 locations (BG-W01 to BG-W25) on the Main Post and 25 locations (BGP-W01 to BGP-W25) on Pelham Range. The planned locations were adjusted in the field to reflect the availability of surface water at some of the locations east and south of the Main Post. The sample locations are shown on Sheets 1 and 2. Table 4-5 summarizes the analytical results for the surface water locations on the Main Post and Pelham Range.

4.3.4 Supplemental Background Sediment Data

Additional background sediment samples were obtained from 25 locations (BG-D01 to BG-D25) on the Main Post and 25 locations (BGP-D01 to BGP-D25) on Pelham Range. The planned locations were

adjusted in the field to reflect the availability of surface water at some of the locations east and south of the Main Post. Sediment samples were obtained at the surface water locations as shown on Sheets 1 and 2. Table 4-6 summarizes the analytical results for the sediment locations on the Main Post and Pelham Range.

4.3.5 Supplemental Background Soil Data

Additional background surface and subsurface soil samples were obtained from 25 locations (BG-S01 to BG-S25) on the Main Post and 25 locations (BGP-S01 to BGP-S25) on Pelham Range. The planned locations were adjusted in the field to reflect site accessibility for a drilling rig and proximity to active Fort McClellan facilities and operations. Surface soil sample depths were between 0-1 feet BLS and subsurface sample locations were composited between 1 to 10 feet BLS. Soil boring locations are shown on Sheets 1 and 2. Tables 4-7 and 4-8 summarize the analytical results for the background surface and subsurface soil samples from locations on the Main Post and Pelham Range.

4.4 COMPOSITE BACKGROUND DATA SETS

The analytical results obtained during the supplemental background metals survey were combined with the useable historical data to comprise the overall background data set for Fort McClellan. Outlier values within the surface water and sediment data sets were identified by USEPA Region IV using probability plots constructed for each surface water and sediment analyte (T. Simon, written communication 5/28/98). The probability plots were constructed by calculating a percentile for each datum and expressing the percentile as a z-score plotted against each logarithmically transformed data value. A resulting straight-line plot is indicative of a single statistical distribution. Outlier values from the straight line distribution were excluded from the calculation of the mean concentration. Summary statistics, including the twice the mean background threshold were calculated for each medium from the composited data obtained from Pelham Range and Main Post. The summary statistics for the composited background data are provided in Tables 4-9 to 4-13.

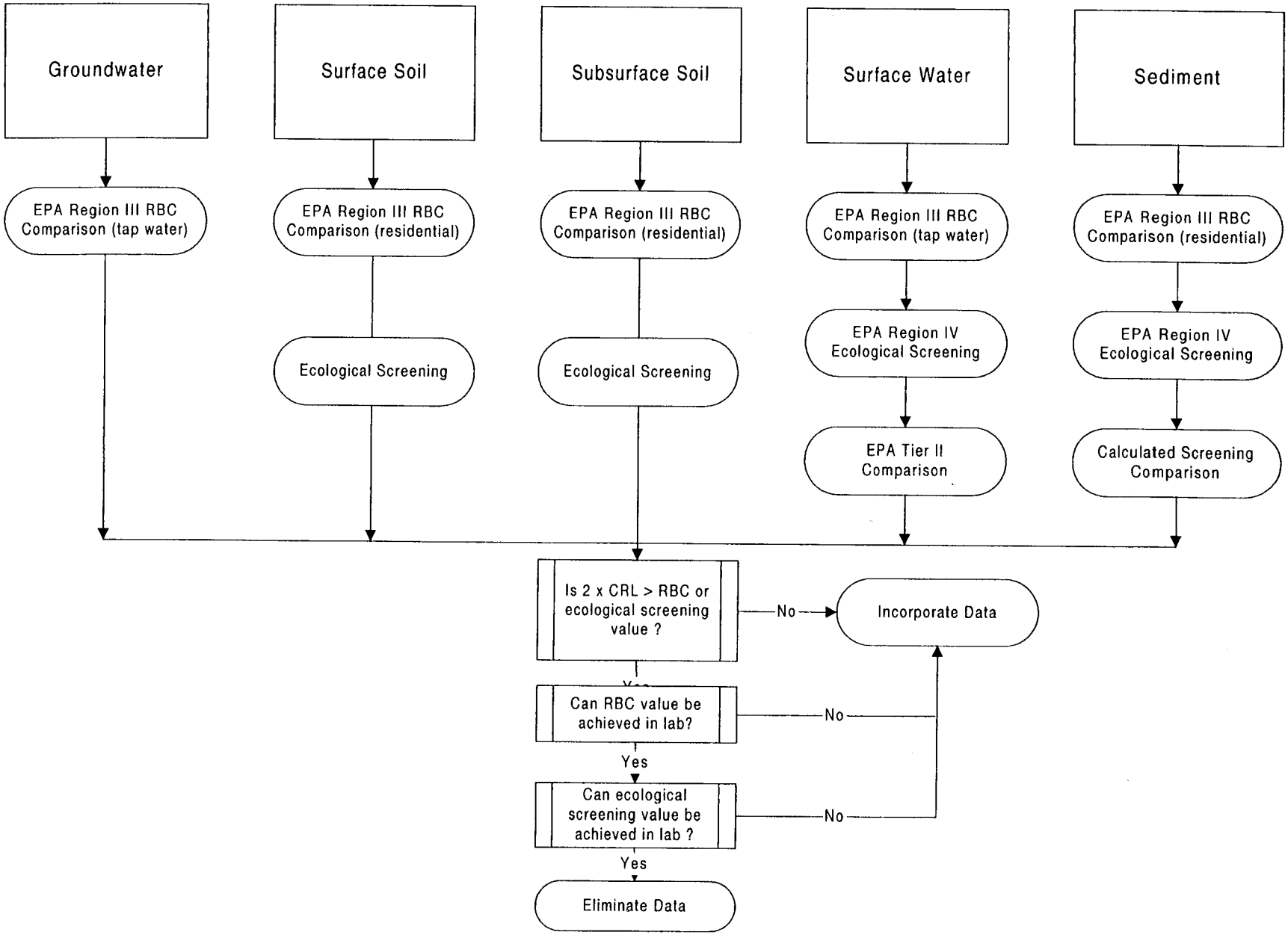
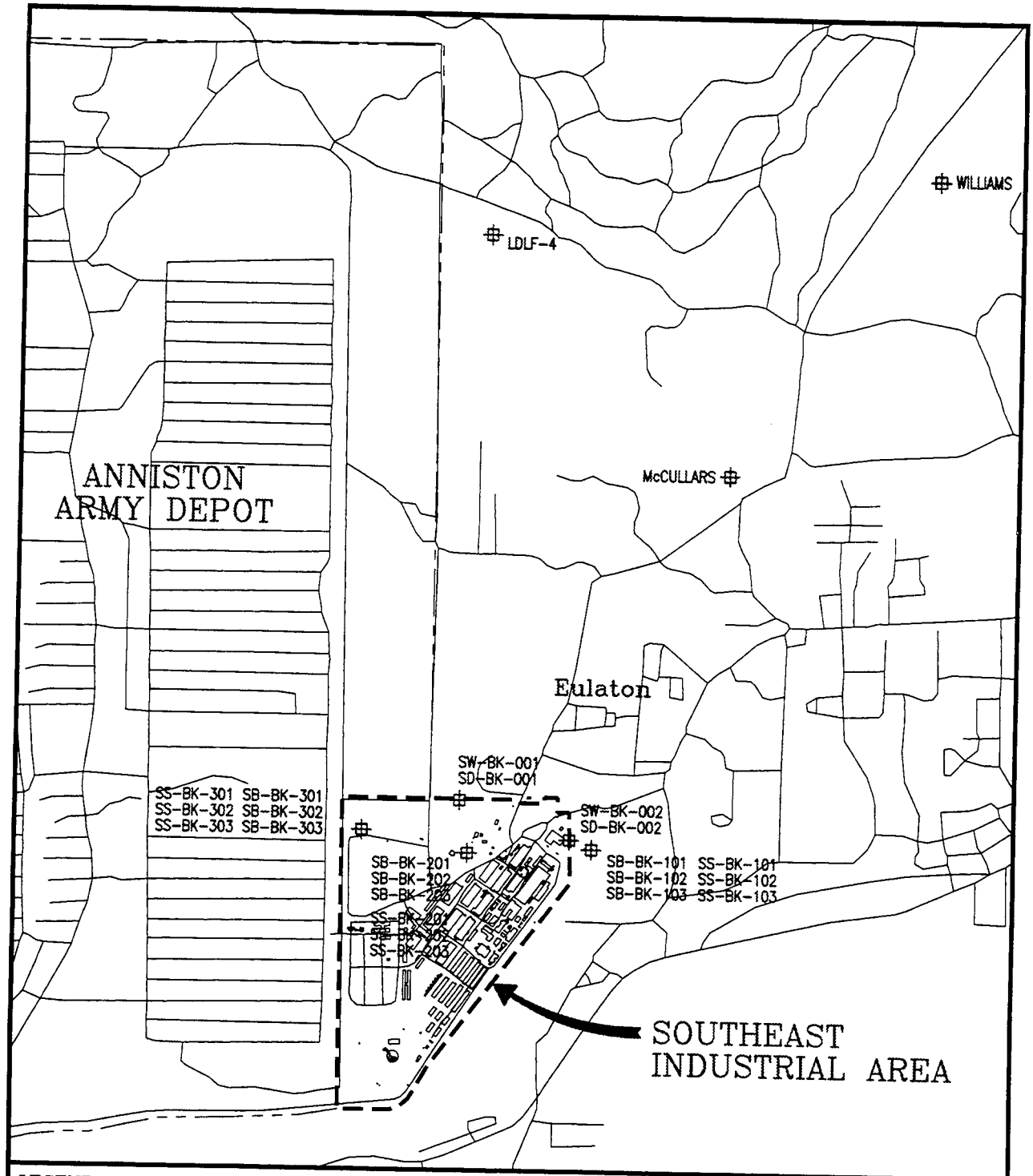


Figure 4-1. Data Assessment Flow Diagram



LEGEND:

- BACKGROUND SAMPLING POINT
- DEPOT BOUNDARY
- SOUTHEAST INDUSTRIAL AREA
- ROADS
- BUILDINGS

0 500 1000 2000

SCALE: 1" = 1000'

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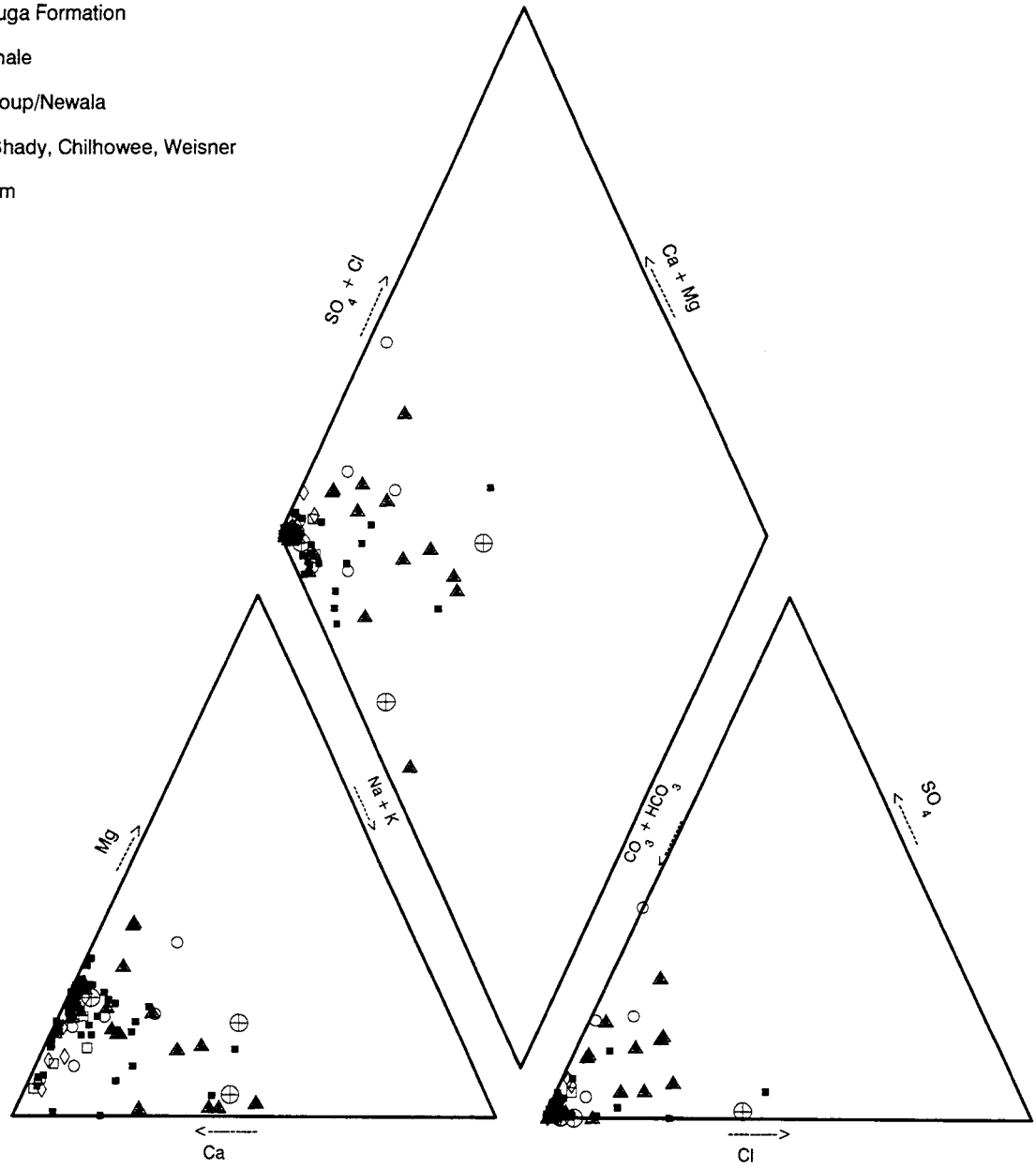
MOBILE DISTRICT
MOBILE, ALABAMA

ANNISTON ARMY DEPOT
BACKGROUND SAMPLE LOCATION MAP

FIGURE:	REV. NO./DATE:	CAD FILE:
4-2	3/23/96	BACKGROUND.DWG

LEGEND

- ○ Athens Shale
- ◊ Conasauga Formation
- □ Floyd Shale
- ■ Knox Group/Newala
- ▲ Rome, Shady, Chilhowee, Weisner
- ⊕ Residuum



Groundwater analyses from "Groundwater Availability in Calhoun County, Alabama", Geological Survey of Alabama Special Map 228, "Groundwater Availability in Talladega County, Alabama, Geological Survey of Alabama Special Map 207, 1988, Samples obtained 1997.

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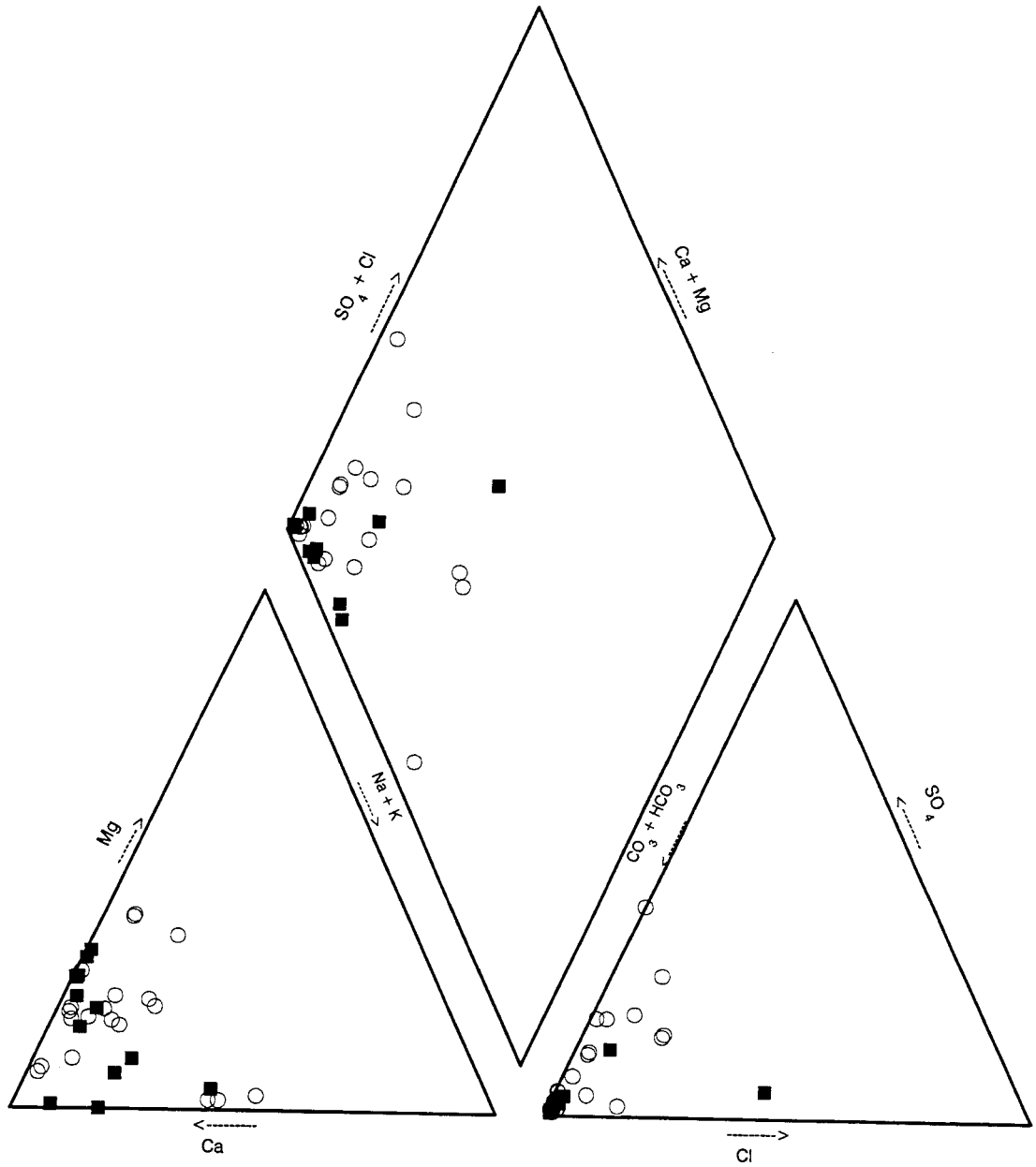
MOBILE, ALABAMA

REGIONAL GROUNDWATER QUALITY
FORT McCLELLAN AND VICINITY

FORT McCLELLAN, ALABAMA

Figure:	Project:	File:	Date:
4-3	01-0827-03-6520-025	FTMC WQ.GRF	JAN 1998



Groundwater analyses from samples obtained between July, 1997 and October, 1997.

LEGEND

○ Main Post

■ Pelham Range

U.S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT
MOBILE, ALABAMA

GROUNDWATER QUALITY
MAIN POST AND PELHAM RANGE
BACKGROUND METALS SURVEY

Figure:	Project:	File:	Date:
4-4	01-0827-03-6520-025	FTMC WQ.GRF	JAN 1998

Table 4-1. Comparison of Laboratory Reporting Limits for Background Studies
Fort McClellan, Alabama

	Fort McClellan					Anniston	
Metal	*SI CRL Soil ug/g*	*SI CRL Water ug/L*	*RI CRL Soil ug/g*	*RI CRL Water ug/L*	*USGS Water ug/L*	*RI CRL Soil ug/g*	*RI CRL Water ug/L*
Aluminum	11.2	112	11.2	112	0.1	2.35	141
Antimony	19.6	60	3	3	0.1	7.14	3.03
Arsenic	2.5	2.35	2.5	2.35	0.6	0.25	2.54
Barium	3.29	2.82	3.29	2.82	¤	5.18	5
Beryllium	0.427	1.12	0.427	1.12	1	0.5	5
Cadmium	1.2	6.78	1.2	4	3	0.7	4.01
Calcium	25.3	105	25.3	105	¤	100	500
Chromium	1.04	16.8	1.04	16.8	0.9	4.05	6.02
Cobalt	2.5	25	2.5	25	0.1	1.42	25
Copper	2.84	18.8	2.84	18.8	0.6	0.965	8.09
Iron	6.66	77.5	6.66	77.5	10	3.68	38.8
Lead	7.44	43.4	0.467	4.47	0.5	0.177	1.26
Magnesium	10.1	135	10.1	135	¤	100	500
Manganese	9.87	9.67	9.87	9.67	0.4	2.05	2.75
Mercury	0.05	0.1	0.05	0.1	NA	0.05	0.243
Nickel	2.74	32.1	2.74	32.1	0.3	1.71	34.3
Potassium	131	1240	131	1240	¤	100	375
Selenium	0.449	2.53	0.449	2.53	NA	0.25	3.02
Silver	0.803	10	0.803	10	0.1	0.589	4.6
Sodium	38.7	279	38.7	279	¤	100	500
Thallium	34.3	125	34.3	1	0.6	6.62	81.4
Vanadium	1.14	27.6	1.14	27.6	0.2	3.39	11
Zinc	2.34	18	2.34	18	3	8.03	21.1

¤ = Detection Limit not provided in report.
NA= Analysis not conducted.
ND= Values not available.

Table 4-2. Sample Matrix for Background Analytical Data
Fort McClellan, Alabama

SAMPLES								SOIL METHODS												WATER METHODS																
								Cn		TMETALS			PB			HG		CR6		Cn		TMETALS			HG		PB			CR6		TPO4	NO3NO2	ANIONS		CARB
SWMU	Site Type	Site ID	Field Sample	Date	QC	Flag	Depth	KY01	XXXX	JD15	JS16	XXXX	JD17	JS16	XXXX	JB01	XXXX	JY02	XXXX	9010	XXXX	6010	6020	XXXX	7470	XXXX	6010	6020	XXXX	7196	XXXX	3651	3532	300	YYYY	3101
BGMP	BORE	BG-S01	SAIC01	8/4/97			0.00		SLGL			SLGL			SLGL		SLGL																			
BGMP	BORE	BG-S01	SAIC02	8/17/97			1.00		SLWL			SLWL			SLWL		SLWL																			
BGMP	BORE	BG-S02	SAIC01	7/23/97			0.00		ZENS			ZENS			ZENS		ZENS																			
BGMP	BORE	BG-S02	SAIC02	8/19/97			1.00		SLRL			SLRL			SLRL		SLRL																			
BGMP	BORE	BG-S02	SAIC02D	8/19/97		D	1.00		SLRL			SLRL			SLRL		SLRL																			
BGMP	BORE	BG-S03	SAIC01	7/29/97			0.00		SLQK			SLQK			SLQK		SLQK																			
BGMP	BORE	BG-S03	SAIC02	8/16/97			1.00		SLWL			SLWL			SLWL		SLWL																			
BGMP	BORE	BG-S04	SAIC01	7/29/97			0.00		SLQK			SLQK			SLQK		SLQK																			
BGMP	BORE	BG-S04	SAIC02	8/16/97			1.00		SLWL			SLWL			SLWL		SLWL																			
BGMP	BORE	BG-S05	SAIC01	7/29/97			0.00		SLQK			SLQK			SLQK		SLQK																			
BGMP	BORE	BG-S05	SAIC02	8/16/97			1.00		SLWL			SLWL			SLWL		SLWL																			
BGMP	BORE	BG-S06	SAIC01	7/29/97			0.00		SLQK			SLQK			SLQK		SLQK																			
BGMP	BORE	BG-S06	SAIC02	8/16/97			1.00		SLWL			SLWL			SLWL		SLWL																			
BGMP	BORE	BG-S07	SAIC01	7/29/97			0.00		SLQK			SLQK			SLQK		SLQK																			
BGMP	BORE	BG-S07	SAIC02	8/19/97			1.00		SLRL			SLRL			SLRL		SLRL																			
BGMP	BORE	BG-S07	SAIC02D	8/19/97		D	1.00		SLRL			SLRL			SLRL		SLRL																			
BGMP	BORE	BG-S08	SAIC01	7/29/97			0.00		SLIL			SLIL			SLIL		SLIL																			
BGMP	BORE	BG-S08	SAIC02	8/17/97			1.00		SLWL			SLWL			SLWL		SLWL																			
BGMP	BORE	BG-S09	SAIC01	7/22/97			0.00		ZENS			ZENS			ZENS		ZENS																			
BGMP	BORE	BG-S09	SAIC02	7/22/97			1.00		ZENS			ZENS			ZENS		ZENS																			
BGMP	BORE	BG-S10	SAIC01	8/4/97			0.00		SLGL			SLGL			SLGL		SLGL																			
BGMP	BORE	BG-S10	SAIC02	8/15/97			1.00		SLWL			SLWL			SLWL		SLWL																			
BGMP	BORE	BG-S11	SAIC01	8/3/97			0.00		SLGL			SLGL			SLGL		SLGL																			
BGMP	BORE	BG-S11	SAIC02	8/19/97			1.00		SLRL			SLRL			SLRL		SLRL																			
BGMP	BORE	BG-S12	SAIC01	7/22/97			0.00		ZENS			ZENS			ZENS		ZENS		ZENS																	
BGMP	BORE	BG-S12	SAIC02	8/15/97			1.00		SLWL			SLWL			SLWL		SLWL																			
BGMP	BORE	BG-S13	SAIC01	7/22/97			0.00		ZENS			ZENS			ZENS		ZENS																			
BGMP	BORE	BG-S13	SAIC02	8/18/97			1.00		SLRL			SLRL			SLRL		SLRL																			
BGMP	BORE	BG-S14	SAIC01	7/22/97			0.00		ZENS			ZENS			ZENS		ZENS																			
BGMP	BORE	BG-S14	SAIC02	8/15/97			1.00		SLWL			SLWL			SLWL		SLWL																			
BGMP	BORE	BG-S15	SAIC01	8/5/97			0.00		ZEQS			ZEQS			ZEQS		ZEQS		ZEQS																	
BGMP	BORE	BG-S15	SAIC01D	8/5/97		D	0.00		ZEQS			ZEQS			ZEQS		ZEQS																			
BGMP	BORE	BG-S15	SAIC02	8/18/97			1.00		SLRL			SLRL			SLRL		SLRL		SLRL																	
BGMP	BORE	BG-S16	SAIC01	8/17/97			0.00		SLWL			SLWL			SLWL		SLWL		SLWL																	
BGMP	BORE	BG-S16	SAIC02	8/17/97			1.00		SLWL			SLWL			SLWL		SLWL		SLWL																	
BGMP	BORE	BG-S17	SAIC01	8/12/97			0.00		SLWL			SLWL			SLWL		SLWL																			
BGMP	BORE	BG-S18	SAIC01	8/5/97			0.00		ZEQS			ZEQS			ZEQS		ZEQS		ZEQS																	
BGMP	BORE	BG-S18	SAIC02	8/5/97			1.00		ZEQS			ZEQS			ZEQS		ZEQS		ZEQS																	
BGMP	BORE	BG-S18	SAIC02D	8/5/97		D	1.00		ZEQS			ZEQS			ZEQS		ZEQS		ZEQS																	
BGMP	BORE	BG-S19	SAIC01	8/3/97			0.00		SLGL			SLGL			SLGL		SLGL																			
BGMP	BORE	BG-S19	SAIC02	8/17/97			1.00		SLUL			SLUL			SLUL		SLUL																			
BGMP	BORE	BG-S19	SAIC02D	8/17/97		D	1.00		SLUL			SLUL			SLUL		SLUL																			
BGMP	BORE	BG-S20	SAIC01	8/4/97			0.00		SLGL			SLGL			SLGL		SLGL		SLGL																	
BGMP	BORE	BG-S20	SAIC02	8/18/97			1.00		SLRL			SLRL			SLRL		SLRL		SLRL																	
BGMP	BORE	BG-S20	SAIC02D	8/18/97		D	1.00		SLRL			SLRL			SLRL		SLRL																			
BGMP	BORE	BG-S21	SAIC01	7/22/97			0.00		ZENS			ZENS			ZENS		ZENS																			
BGMP	BORE	BG-S21	SAIC02	8/15/97			1.00		SLUL			SLUL			SLUL		SLUL																			
BGMP	BORE	BG-S22	SAIC01	8/3/97			0.00		SLGL			SLGL			SLGL		SLGL																			
BGMP	BORE	BG-S22	SAIC02	8/17/97			1.00		SLUL			SLUL			SLUL		SLUL																			
BGMP	BORE	BG-S23	SAIC01	7/22/97			0.00		ZENS			ZENS			ZENS		ZENS																			
BGMP	BORE	BG-S23	SAIC02	8/17/97			1.00		SLUL			SLUL			SLUL		SLUL																			
BGMP	BORE	BG-S24	SAIC01	7/22/97			0.00		ZENS			ZENS			ZENS		ZENS																			
BGMP	BORE	BG-S24	SAIC02	8/16/97			1.00		SLUL			SLUL			SLUL		SLUL																			
BGMP	BORE	BG-S24	SAIC02D	8/16/97		D	1.00		SLUL			SLUL			SLUL		SLUL																			
BGMP	BORE	BG-S25	SAIC01	7/22/97			0.00		ZENS			ZENS			ZENS		ZENS																			
BGMP	BORE	BG-S25	SAIC02	8/17/97			1.00		SLUL			SLUL			SLUL		SLUL																			
BGMP	CREK	BG-D01	SAIC01	8/3/97			0.00		SLGL			SLGL			SLGL		SLGL																			
BGMP	CREK	BG-D02	SAIC01	8/4/97			0.00		SLGL			SLGL			SLGL		SLGL																			
BGMP	CREK	BG-D02	SAIC01D	8/4/97		D	0.00		SLGL			SLGL			SLGL		SLGL																			
BGMP	CREK	BG-D03	SAIC01	7/23/97			0.00		ZENS			ZENS			ZENS		ZENS																			
BGMP	CREK	BG-D03	SAIC01D	7/23/97		D	0.00		ZENS			ZENS			ZENS		ZENS																			
BGMP	CREK	BG-D04	SAIC01	7/18/97			0.00		SLNK			SLNK			SLNK		SLNK																			
BGMP	CREK	BG-D05	SAIC01	7/18/97			0.00		SLNK			SLNK			SLNK		SLNK		SLNK																	
BGMP	CREK	BG-D05	SAIC01D	7/18/97		D	0.00		SLNK			SLNK			SLNK		SLNK		SLNK																	
BGMP	CREK	BG-D06	SAIC01	7/18/97			0.00		SLNK			SLNK			SLNK		SLNK		SLNK																	
BGMP	CREK	BG-D07	SAIC01	7/19/97			0.00		ZENS			ZENS			ZENS		ZENS																			
BGMP	CREK	BG-D08	SAIC01	8/3/97			0.00		SLGL			SLGL			SLGL		SLGL																			
BGMP	CREK	BG-D09	SAIC01	7/17/97			0.00		SLNK			SLNK			SLNK		SLNK																			
BGMP	CREK	BG-D10	SAIC01	7/19/97			0.00		ZENS			ZENS			ZENS		ZENS																			

Table 4-2. Sample Matrix for Background Analytical Data
Fort McClellan, Alabama

								SOIL METHODS												WATER METHODS															
SAMPLES								Cn		TMETALS			PB			HG		CR6		Cn		TMETALS			HG		PB			CR6		TPO4	NO3NO2	ANIONS		CARB
SWMU	Site Type	Site ID	Field Sample	Date	QC	Flag	Depth	KY01	XXXX	JD15	JS16	XXXX	JD17	JS16	XXXX	JB01	XXXX	JY02	XXXX	9010	XXXX	6010	6020	XXXX	7470	XXXX	6010	6020	XXXX	7196	XXXX	3651	3532	300	YYYY	3101
BGMP	CREK	BG-D12	SAIC01	7/19/97			0.00		ZENS			ZENS			ZENS		ZENS																			
BGMP	CREK	BG-D13	SAIC01	7/15/97			0.00		SLNK			SLNK			SLNK		SLNK																			
BGMP	CREK	BG-D14	SAIC01	8/13/97			0.00		SLWL			SLWL			SLWL		SLWL																			
BGMP	CREK	BG-D15	SAIC01	7/18/97			0.00		SLNK			SLNK			SLNK		SLNK		SLNK																	
BGMP	CREK	BG-D16	SAIC01	7/17/97			0.00		SLNK			SLNK			SLNK		SLNK																			
BGMP	CREK	BG-D17	SAIC01	7/18/97			0.00		SLNK			SLNK			SLNK		SLNK		SLNK																	
BGMP	CREK	BG-D18	SAIC01	8/3/97			0.00		SLGL			SLGL			SLGL		SLGL																			
BGMP	CREK	BG-D19	SAIC01	7/20/97			0.00		ZENS			ZENS			ZENS		ZENS																			
BGMP	CREK	BG-D20	SAIC01	8/3/97			0.00		SLGL			SLGL			SLGL		SLGL																			
BGMP	CREK	BG-D21	SAIC01	7/17/97			0.00		SLNK			SLNK			SLNK		SLNK																			
BGMP	CREK	BG-D22	SAIC01	8/20/97			0.00		SLWL			SLWL			SLWL		SLWL																			
BGMP	CREK	BG-D22	SAIC01D	8/20/97		D	0.00		SLWL			SLWL			SLWL		SLWL																			
BGMP	CREK	BG-D23	SAIC01	7/19/97			0.00		ZENS			ZENS			ZENS		ZENS																			
BGMP	CREK	BG-D24	SAIC01	8/5/97			0.00		ZEQS			ZEQS			ZEQS		ZEQS																			
BGMP	LAKE	BG-D11	SAIC01	7/20/97			0.00		ZENS			ZENS			ZENS		ZENS		ZENS																	
BGMP	LAKE	BG-D25	SAIC01	7/17/97			0.00		SLNK			SLNK			SLNK		SLNK																			
BGMP_H	BORE	BK-S01	BK-S0101	4/13/92			1.00					TAC			TAC		TAC																			
BGMP_H	BORE	BK-S01	BK-S0102	4/13/92			5.00					TAC			TAC		TAC																			
BGMP_H	BORE	BK-S02	SAIC01	4/12/94			1.00					AKGB			AKGB		AKGB																			
BGMP_H	BORE	BK-S03	SAIC01	4/12/94			1.00					AKGB			AKGB		AKGB																			
BGMP_H	BORE	BK-S04	SAIC01	4/12/94			0.00					AKGB			AKGB		AKGB																			
BGMP_H	CREK	BK-D01	BK-D01	4/13/92			0.00					TAC			TAC		TAC																			
BGMP_H	CREK	BK-D02	SAIC01	6/19/94			0.00					ANHO			ANHO		ANHO																			
BGMP_H	CREK	BK-D04	SAIC01	6/19/94			0.00					ANHO			ANHO		ANHO																			
BGMP_H	CREK	LF1-D01	SAIC01	6/9/94			0.00					AMJT			AMJT		AMJT																			
BGMP_H	CREK	LF2-D01	SAIC01	6/9/94			0.00					AMJT			AMJT		AMJT																			
BGMP_H	CREK	T5-D02	SAIC01	6/6/94			0.00					AMJT			AMJT		AMJT																			
BGMP_H	LAKE	BK-D03	SAIC01	6/19/94			0.00					ANHO			ANHO		ANHO																			
BGP	BORE	BGP-S01	SAIC01	7/30/97			0.00		SLIL			SLIL			SLIL		SLIL		SLIL																	
BGP	BORE	BGP-S01	SAIC02	8/5/97			1.00		ZEQS			ZEQS			ZEQS		ZEQS		ZEQS																	
BGP	BORE	BGP-S02	SAIC01	8/1/97			0.00		SLIL			SLIL			SLIL		SLIL																			
BGP	BORE	BGP-S02	SAIC02	8/14/97			1.00		SLWL			SLWL			SLWL		SLWL																			
BGP	BORE	BGP-S02	SAIC02D	8/14/97		D	1.00		SLWL			SLWL			SLWL		SLWL																			
BGP	BORE	BGP-S03	SAIC01	8/2/97			0.00		SLGL			SLGL			SLGL		SLGL																			
BGP	BORE	BGP-S03	SAIC02	8/14/97			1.00		SLWL			SLWL			SLWL		SLWL																			
BGP	BORE	BGP-S04	SAIC01	8/1/97			0.00		SLIL			SLIL			SLIL		SLIL																			
BGP	BORE	BGP-S04	SAIC01D	8/1/97		D	0.00		SLIL			SLIL			SLIL		SLIL																			
BGP	BORE	BGP-S04	SAIC02	8/12/97			1.00		SLWL			SLWL			SLWL		SLWL																			
BGP	BORE	BGP-S04	SAIC02D	8/12/97		D	1.00		SLWL			SLWL			SLWL		SLWL																			
BGP	BORE	BGP-S05	SAIC01	8/1/97			0.00		SLIL			SLIL			SLIL		SLIL																			
BGP	BORE	BGP-S05	SAIC02	8/2/97			1.00		SLEL			SLEL			SLEL		SLEL																			
BGP	BORE	BGP-S06	SAIC01	8/1/97			0.00		SLIL			SLIL			SLIL		SLIL																			
BGP	BORE	BGP-S06	SAIC02	8/15/97			1.00		SLUL			SLUL			SLUL		SLUL																			
BGP	BORE	BGP-S07	SAIC01	8/1/97			0.00		SLIL			SLIL			SLIL		SLIL																			
BGP	BORE	BGP-S07	SAIC02	8/14/97			1.00		SLUL			SLUL			SLUL		SLUL																			
BGP	BORE	BGP-S08	SAIC01	8/17/97			0.00		SLUL			SLUL			SLUL		SLUL																			
BGP	BORE	BGP-S08	SAIC02	8/17/97			1.00		SLUL			SLUL			SLUL		SLUL																			
BGP	BORE	BGP-S09	SAIC01	8/1/97			0.00		SLIL			SLIL			SLIL		SLIL																			
BGP	BORE	BGP-S09	SAIC02	8/12/97			1.00		SLUL			SLUL			SLUL		SLUL																			
BGP	BORE	BGP-S10	SAIC01	8/17/97			0.00		SLUL			SLUL			SLUL		SLUL																			
BGP	BORE	BGP-S10	SAIC02	8/17/97			1.00		SLUL			SLUL			SLUL		SLUL																			
BGP	BORE	BGP-S11	SAIC01	7/31/97			0.00		SLIL			SLIL			SLIL		SLIL																			
BGP	BORE	BGP-S11	SAIC02	8/14/97			1.00		SLUL			SLUL			SLUL		SLUL																			
BGP	BORE	BGP-S12	SAIC01	8/4/97			0.00		ZEQS			ZEQS			ZEQS		ZEQS																			
BGP	BORE	BGP-S12	SAIC02	8/5/97			1.00		ZEQS			ZEQS			ZEQS		ZEQS		ZEQS																	
BGP	BORE	BGP-S13	SAIC01	7/30/97			0.00		SLIL			SLIL			SLIL		SLIL		SLIL																	
BGP	BORE	BGP-S13	SAIC02	8/5/97			1.00		ZEQS			ZEQS			ZEQS		ZEQS		ZEQS																	
BGP	BORE	BGP-S14	SAIC01	7/31/97			0.00		SLIL			SLIL			SLIL		SLIL																			
BGP	BORE	BGP-S14	SAIC02	8/6/97			1.00		ZEQS			ZEQS			ZEQS		ZEQS																			
BGP	BORE	BGP-S15	SAIC01	7/31/97			0.00		SLIL			SLIL			SLIL		SLIL																			
BGP	BORE	BGP-S15	SAIC02	8/6/97			1.00		ZEQS			ZEQS			ZEQS		ZEQS																			
BGP	BORE	BGP-S16	SAIC01	7/31/97			0.00		SLGL			SLGL			SLGL		SLGL																			
BGP	BORE	BGP-S16	SAIC01D	7/31/97		D	0.00		SLIL			SLIL			SLIL		SLIL																			
BGP	BORE	BGP-S16	SAIC02	8/18/97			1.00		SLRL			SLRL			SLRL		SLRL		SLRL																	

Table 4-2. Sample Matrix for Background Analytical Data
Fort McClellan, Alabama

SAMPLES								SOIL METHODS												WATER METHODS																
								Cn		TMETALS			PB			HG		CR6		Cn		TMETALS		HG		PB		CR6		TPO4	NO3NO2	ANIONS		CARB
SWMU	Site Type	Site ID	Field Sample	Date	QC	Flag	Depth	KY01	XXXX	JD15	JS16	XXXX	JD17	JS16	XXXX	JB01	XXXX	JY02	XXXX	9010	XXXX	6010	6020	XXXX	7470	XXXX	6010	6020	XXXX	7196	XXXX	3651	3532	300	YYYY	3101
BGMP	WELL	MW1-G01	SAIC01	10/2/97			5.82														ZKOZ			ZKOZ	UJZS	ZKOZ			ZKOZ			ZKIZ	ZKLZ	ZKDZ		ZKMZ
BGMP	WELL	MW2-G02	SAIC01	10/4/97			80.49														ZKOZ			ZKOZ	UJZS	ZKOZ			ZKOZ			ZKIZ	ZKPZ	ZKTZ		ZKMZ
BGMP	WELL	MW4-G01	SAIC01	10/3/97			3.00														ZKOZ			ZKOZ	UJZS	ZKOZ			ZKOZ			ZKIZ	ZKNZ	ZKDZ		ZKMZ
BGMP	WELL	MW5-G01	SAIC01	10/2/97			5.91														ZKOZ			ZKOZ	UJZS	ZKOZ			ZKOZ			ZKIZ	ZKLZ	ZKDZ		ZKMZ
BGMP	WELL	T24A-G03	SAIC01X	10/2/97			14.20														ZKOZ			ZKOZ	UJZS	ZKOZ			ZKOZ			ZKIZ	ZKNZ	ZKDZ		ZKMZ
BGMP	WELL	T24A-G03	SAIC01XD	10/2/97		D	14.20														ZKOZ			ZKOZ	UJZS	ZKOZ			ZKOZ			ZKIZ	ZKNZ	ZKDZ		ZKMZ
BGMP_H	CREK	BK-W01	BK-W01	4/13/92			0.00																													
BGMP_H	CREK	BK-W02	SAIC01	6/23/94			0.00																	TAH		TAH			TAH							
BGMP_H	CREK	BK-W04	SAIC01	6/20/94			0.00																	ANIP		ANIP			ANIP							
BGMP_H	CREK	LF1-W01	SAIC01	6/8/94			0.00																	ANIP		ANIP			ANIP							
BGMP_H	CREK	LF1-W01	SAIC02D	6/8/94		D	0.00																	AMOH		AMOH			AMOH							
BGMP_H	CREK	LF2-W01	SAIC01	6/19/94			0.00																	AMOH		AMOH			AMOH							
BGMP_H	CREK	T5-W02	SAIC01	6/8/94			0.00																	ANIP		ANIP			ANIP							
BGMP_H	LAKE	BK-W03	SAIC01	6/20/94			0.00																	AMOH		AMOH			AMOH							
BGMP_H	LAKE	BK-W03	SAIC02D	6/20/94		D	0.00																	ANIP		ANIP			ANIP							
BGMP_H	WELL	BK-G03	SAIC01	7/13/94			0.00																	ANIP		ANIP			ANIP							
BGMP_H	WELL	BK-G03	SAIC02D	7/13/94		D	0.00																	ANXY		ANXY			ANXY							
BGMP_H	WELL	BK-G03	SAIC03	1/30/95			0.00																	ANXY		ANXY			ANXY							
BGMP_H	WELL	BK-G03	SAIC04D	1/30/95		D	0.00																	ARGE		ARGE			ARGE							
BGMP_H	WELL	BK-G04	SAIC01	7/13/94			13.00																	ARGE		ARGE			ARGE							
BGMP_H	WELL	BK-G04	SAIC02	2/5/95			13.20																	ANXY		ANXY			ANXY							
BGMP_H	WELL	BK-G06	SAIC01	7/15/94			17.50																	ARJH		ARJH			ARJH							
BGMP_H	WELL	BK-G06	SAIC03	2/2/95			14.60																	ANXY		ANXY			ANXY							
BGMP_H	WELL	LF1-G01	SAIC01	7/13/94			30.00																	ARGR		ARGR			ARGR							
BGMP_H	WELL	LF1-G01	SAIC03	2/1/95			29.90																	ANXY		ANXY			ANXY							
BGMP_H	WELL	LF2-G01	SAIC01	7/4/94			20.60																	ARGE		ARGE			ARGE							
BGMP_H	WELL	LF2-G01	SAIC03	1/31/95			19.30																	ANIP		ANIP			ANIP							
BGMP_H	WELL	T24A-G03	SAIC01	10/23/94			18.50																	ARGE		ARGE			ARGE							
BGMP_H	WELL	T24A-G03	SAIC03	2/1/95			12.80																	APYF		APYF			APYF							
																								ARGR		ARGR			ARGR							
BGP	CMPH	TCLP-01	SAIC01	10/6/97			0.00														ZKOZ			ZKOZ		ZKOZ			ZKOZ							
BGP	CREK	BGP-W01	SAIC01	7/21/97			0.00														UJJR			UJJR		UJJR			UJJR		UJJR	ZKLY	ZKIY	ZKCZ	ZKCZ	ZKGY
BGP	CREK	BGP-W02	SAIC01	7/21/97			0.00														UJJR			UJJR		UJJR			UJJR			ZKLY	ZKIY	ZKCZ	ZKCZ	ZKGY
BGP	CREK	BGP-W03	SAIC01	8/13/97			0.00														ZKXY			ZKXY		ZKXY			ZKXY			ZKTY	ZKRY	ZKBZ	ZKBZ	ZKSY
BGP	CREK	BGP-W04	SAIC01	7/20/97			0.00														UJNR			UJNR		UJNR			UJNR		UJNR	ZKLY	ZKIY	ZKCZ	ZKCZ	ZKWX
BGP	CREK	BGP-W05	SAIC01	7/20/97			0.00														UJNR			UJNR		UJNR			UJNR			ZKLY	ZKIY	ZKCZ	ZKCZ	ZKWX
BGP	CREK	BGP-W06	SAIC01	8/1/97			0.00														UJNR			UJNR		UJNR			UJNR			ZKTY	ZKIY	ZKWY	ZKWY	ZKGY
BGP	CREK	BGP-W07	SAIC01	7/20/97			0.00														UJNR			UJNR		UJNR			UJNR			ZKLY	ZKIY	ZKCZ	ZKCZ	ZKWX
BGP	CREK	BGP-W07	SAIC01D	7/20/97		D	0.00														UJJR			UJJR		UJJR			UJJR			ZKLY	ZKEY	ZKCZ	ZKCZ	ZKWX
BGP	CREK	BGP-W08	SAIC01	7/20/97			0.00														UJJR			UJJR		UJJR			UJJR		UJJR	ZKLY	ZKEY	ZKCZ	ZKCZ	ZKWX
BGP	CREK	BGP-W09	SAIC01	7/20/97			0.00														UJJR			UJJR		UJJR			UJJR			ZKLY	ZKEY	ZKCZ	ZKCZ	ZKWX
BGP	CREK	BGP-W10	SAIC01	8/2/97			0.00														UJUR			UJUR		UJUR			UJUR			ZKTY	ZKJY	ZKWY	ZKWY	ZKOY
BGP	CREK	BGP-W11	SAIC01	7/21/97			0.00														UJJR			UJJR		UJJR			UJJR			ZKLY	ZKIY	ZKCZ	ZKCZ	ZKGY
BGP	CREK	BGP-W12	SAIC01	7/21/97			0.00														UJJR			UJJR		UJJR			UJJR			ZKLY	ZKIY	ZKCZ	ZKCZ	ZKGY
BGP	CREK	BGP-W13	SAIC01	7/16/97			0.00														UJJR			UJJR		UJJR			UJJR			ZKCY	ZKEY	ZKCZ	ZKCZ	ZKWX
BGP	CREK	BGP-W14	SAIC01	8/2/97			0.00														UJUR			UJUR		UJUR			UJUR			ZKTY	ZKJY	ZKWY	ZKWY	ZKOY
BGP	CREK	BGP-W15	SAIC01	7/16/97			0.00														UJJR			UJJR		UJJR			UJJR			ZKCY	ZKEY	ZKCZ	ZKCZ	ZKWX
BGP	CREK	BGP-W17	SAIC01	7/20/97			0.00														UJJR			UJJR		UJJR			UJJR		UJJR	ZKLY	ZKEY	ZKCZ	ZKCZ	ZKWX
BGP	CREK	BGP-W18	SAIC01	7/20/97			0.00														UJJR			UJJR		UJJR			UJJR		UJJR	ZKLY	ZKEY	ZKCZ	ZKCZ	ZKWX
BGP	CREK	BGP-W19	SAIC01	7/29/97			0.00														UJJR			UJJR		UJJR			UJJR			ZKLY	ZKEY	ZKCZ	ZKCZ	ZKWX
BGP	CREK	BGP-W20	SAIC01	7/16/97			0.00														UJJR			UJJR		UJJR			UJJR			ZKCY	ZKEY	ZKCZ	ZKCZ	ZKWX
BGP	CREK	BGP-W20	SAIC01D	7/16/97		D	0.00														UJJR			UJJR		UJJR			UJJR			ZKCY	ZKEY	ZKCZ	ZKCZ	ZKWX
BGP	CREK	BGP-W21	SAIC01	8/2/97			0.00														UJUR			UJUR		UJUR			UJUR			ZKTY	ZKJY	ZKWY	ZKWY	ZKOY
BGP	CREK	BGP-W22	SAIC01	7/21/97			0.00														UJJR			UJJR		UJJR			UJJR			ZKLY	ZKIY	ZKCZ	ZKCZ	ZKWX
BGP	CREK	BGP-W23	SAIC01	7/21/97			0.00														UJJR			UJJR		UJJR			UJJR			ZKLY	ZKEY	ZKCZ	ZKCZ	ZKGY
BGP	CREK	BGP-W24	SAIC01	7/20/97			0.00														UJJR			UJJR		UJJR			UJJR			ZKLY	ZKEY	ZKCZ	ZKCZ	ZKWX
BGP	CREK	BGP-W25	SAIC01	7/16/97			0.00														UJJR			UJJR		UJJR			UJJR			ZKCY	ZKEY	ZKCZ	ZKCZ	ZKWX
BGP	POND	BGP-W16	SAIC01	7/16/97			0.00														UJJR			UJJR		UJJR			UJJR			ZKCY	ZKEY	ZKCZ	ZKCZ	ZKWX
BGP	RNSW	BGP-D01	SAICRB07	7/21/97	R		0.00													ZKKY		UJRT	UJNR		UJJR		UJRT	UJNR		ME28					
BGP	RNSW	BGP-D08	SAICRB06	7/20/97	R		0.00													ZKKY		UJRT	UJNR		UJJR		UJRT	UJNR		ME27					
BGP	RNSW	BGP-D10	SAICRB15	8/2/97	R		0.00													ZKQY		UJRT	UJUR		UJVR		UJRT	UJUR							
BGP	RNSW	BGP-D13	SAICRB02	7/16/97	R		0.00													ZKHY		UJRT	UJGR		UJJR		UJRT	UJGR							
BGP	RNSW	BGP-S02	SAICRB12	7/31/97	R		0.00													ZKQY		UJRT	UJNR		UJOR		UJRT	UJNR							

Table 4-2. Sample Matrix for Background Analytical Data
Fort McClellan, Alabama

SAMPLES								SOIL METHODS												WATER METHODS																	
								Cn		TMETALS			PB			HG		CR6		Cn		TMETALS			HG		PB			CR6		TPO4	NO3NO2	ANIONS		CARB
SWMU	Site Type	Site ID	Field Sample	Date	QC	Flag	Depth	KY01	XXXX	JD15	JS16	XXXX	JD17	JS16	XXXX	JB01	XXXX	JY02	XXXX	9010	XXXX	6010	6020	XXXX	7470	XXXX	6010	6020	XXXX	7196	XXXX	3651	3532	300	YYYY	3101
BGP	RNSW	BGP-S02	SAICRB13	8/1/97	R		0.00													ZKQY		UJRT	UJNR		UJOR		UJRT	UJNR								
BGP	RNSW	BGP-S05	SAICRB14	8/2/97	R		0.00													ZKQY		UJRT	UJUR		UJVR		UJRT	UJUR								
BGP	RNSW	BGP-S11	SAICRB25	8/14/97	R		0.00													ZKXY		UJRT	UJUR		UJVR		UJRT	UJUR								
BGP	RNSW	BGP-S12	SAICRB20	8/5/97	R		0.00													ZKUY		UJRT	UJUR		UJVR		UJRT	UJUR		ME43						
BGP	RNSW	BGP-S13	SAICRB11	7/30/97	R		0.00													ZKQY		UJRT	UJNR		UJOR		UJRT	UJNR		ME39						
BGP	RNSW	BGP-S16	SAICRB29	8/18/97	R		0.00													ZKZY		UJRT	UJJS		UJHS		UJRT	UJJS		ME52						
BGP	RNSW	BGP-S17	SAICRB23	8/12/97	R		0.00													ZKXY		UJRT	UJUR		UJVR		UJRT	UJUR								
BGP	RNSW	BGP-S18	SAICRB17	8/3/97	R		0.00													ZKQY		UJRT	UJUR		UJVR		UJRT	UJUR								
BGP	RNSW	BGP-S21	SAICRB19	8/4/97	R		0.00													ZKUY		UJRT	UJUR		UJVR		UJRT	UJUR								
BGP	RNSW	BGP-S24	SAICRB22	8/6/97	R		0.00													ZKUY		UJRT	UJUR		UJVR		UJRT	UJUR								
BGP	RNSW	BK-G04	SAICRB31	10/2/97	R		0.00													ZKOZ		UJAT	UJBT		UJZS		UJAT	UJBT				ZKIZ	ZKLZ	ZKDZ		ZKMZ
BGP	RNSW	BK-G09	SAICRB33	10/1/97	R		0.00													ZKOZ		UJAT	UJBT		UJZS		UJAT	UJBT		ME85		ZKIZ	ZKLZ	ZKDZ		ZKMZ
BGP	RNSW	LDLF-4	SAICRB32	10/3/97	R		0.00													ZKOZ		UJAT	UJBT		UJZS		UJAT	UJBT				ZKIZ	ZKNZ	ZKDZ		ZKMZ
BGP	TRIP	TCLP-01	SAICTB01	10/6/97	T		0.00																														
BGP	WELL	CW-G01	SAIC01X	10/2/97			0.00														ZKOZ			ZKOZ		ZKOZ			ZKOZ			ZKIZ	ZKLZ	ZKDZ	ZKDZ	ZKMZ
BGP	WELL	CW-G02	SAIC01X	10/2/97			0.00														ZKOZ			ZKOZ		ZKOZ			ZKOZ			ZKIZ	ZKLZ	ZKDZ	ZKDZ	ZKMZ
BGP	WELL	GW-BKPR-01	SAIC01	10/1/97			41.60														ZKOZ			ZKOZ		ZKOZ			ZKOZ			ZKIZ	ZKLZ	ZKDZ	ZKDZ	ZKJZ
BGP	WELL	GW-BKPR-02	SAIC01	10/1/97			32.00														ME85			ME85		ME85			ME85		ME85	ZKIZ	ZKLZ	ZKDZ	ZKDZ	ZKMZ
BGP	WELL	GW-BKPR-03	SAIC01	10/1/97			13.30														ZKOZ			ZKOZ		ZKOZ			ZKOZ			ZKIZ	ZKLZ	ZKDZ	ZKDZ	ZKJZ
BGP	WELL	GW-P8203	SAIC01	10/3/97			0.00														ZKOZ			ZKOZ		ZKOZ			ZKOZ			ZKIZ	ZKLZ	ZKDZ	ZKDZ	ZKMZ
BGP	WELL	GW-P8415	SAIC01	10/3/97			0.00														ZKOZ			ZKOZ		ZKOZ			ZKOZ			ZKIZ	ZKLZ	ZKDZ	ZKDZ	ZKMZ
BGP	WELL	GW-P8607	SAIC01	10/3/97			0.00														ZKOZ			ZKOZ		ZKOZ			ZKOZ			ZKIZ	ZKNZ	ZKDZ	ZKDZ	ZKMZ
BGP	WELL	GW-P8607	SAIC01D	10/3/97		D	0.00														ZKOZ			ZKOZ		ZKOZ			ZKOZ			ZKIZ	ZKNZ	ZKDZ	ZKDZ	ZKMZ
BGP	WELL	GW-P8802	SAIC01	7/14/97			0.00														ZKFY			ZKFY		ZKFY			ZKFY		ZKFY	ZKCY	ZKEY	ZKCZ	ZKCZ	ZKVX
BGP	WELL	GW-P8802	SAIC01D	7/14/97		D	0.00														ZKFY			ZKFY		ZKFY			ZKFY		ZKFY	ZKCY	ZKEY	ZKCZ	ZKCZ	ZKVX
BGP	WELL	LDLF-4	SAIC01X	10/3/97			21.74														ZKOZ			ZKOZ		ZKOZ			ZKOZ			ZKIZ	ZKNZ	ZKDZ	ZKDZ	ZKMZ
BGP	WELL	OWH-G02	SAIC01X	10/1/97			62.00														ME85			ME85		ME85			ME85		ME85	ZKIZ	ZKLZ	ZKDZ	ZKDZ	ZKJZ
BGP	WELL	RL-G01	SAIC01X	10/1/97			20.00														ME85			ME85		ME85			ME85		ME85	ZKIZ	ZKLZ	ZKDZ	ZKDZ	ZKMZ
BGP	WELL	WILLIAMS	SAIC01X	10/3/97			63.66														ZKOZ			ZKOZ		ZKOZ			ZKOZ			ZKIZ	ZKNZ	ZKDZ	ZKDZ	ZKMZ
BGP_H	CREK	SW-BK-001	SAIC01	2/1/95			0.00														TIQA			TIQA		TIQA			TIQA		TIQA					
BGP_H	CREK	SW-BK-002	SAIC01	2/1/95			0.00														TIQA			TIQA		TIQA			TIQA		TIQA					
BGP_H	TAPW	FPR001	1	1/12/94			0.00																	AHXT		AHXT			AHXT							
BGP_H	TAPW	FPR001	2	1/12/94		D	0.00																	AHXT		AHXT			AHXT							
BGP_H	TAPW	FPR001	FPR001	2/27/92			0.00																	SLB		SLB			SLB							
BGP_H	WELL	CW-G01	SAIC01	7/18/94			0.00																	ANXY		ANXY			ANXY							
BGP_H	WELL	CW-G01	SAIC03	2/3/95			0.00																	ARJH		ARJH			ARJH							
BGP_H	WELL	CW-G02	SAIC01	7/18/94			0.00																	ANXY		ANXY			ANXY							
BGP_H	WELL	CW-G02	SAIC02	2/3/95			0.00																	ARJH		ARJH			ARJH							
BGP_H	WELL	LDLF-4	SAIC02	4/1/96			0.00																	ZFCG		ZFCG			ZFCG							
BGP_H	WELL	MCCULLERS	SAIC02	3/31/96			0.00																	XCIG		XCIG			XCIG							
BGP_H	WELL	OWH-G02	SAIC01	2/8/95			81.81																	ARJH		ARJH			ARJH							
BGP_H	WELL	OWH-G02	SAIC02	4/30/95			91.83																	ASKV		ASKV			ASKV							
BGP_H	WELL	RL-G01	SAIC01	2/6/95			40.81																	ARJH		ARJH			ARJH							
BGP_H	WELL	RL-G01	SAIC02	4/25/95			29.25																	ASGR		ASGR			ASGR							
BGP_H	WELL	RL-G01	SAIC03	4/25/95			29.25																	ASGR		ASGR			ASGR							
BGP_H	WELL	WILLIAMS	SAIC02	3/31/96			0.00																	ZFCG		ZFCG			ZFCG							
QC-R	RNSW	BG-S16	SAICRB27	8/17/97	R		0.00																							ME52						
								0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Data received from lab:								5	187	5	5	199	2	5	199	5	199	4	43	32	93	32	32	133	80	133	32	32	133	9	24	93	93	93	42	93
100%								5	187	5	5	199	2	5	199	5	199	4	43	32	93	32	32	133	80	133	32	32	133	9	24	93	93	93	42	93
								100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 4-2. Sample Matrix for Background Analytical Data
Fort McClellan, Alabama

SAMPLES								SOIL METHODS												WATER METHODS																		
								Cn		TMETALS			PB			HG		CR6		Cn		TMETALS			HG		PB			CR6		TPO4	NO3NO2	ANIONS		CARB
SWMU	Site Type	Site ID	Field Sample	Date	QC	Flag	Depth	KY01	XXXX	JD15	JS16	XXXX	JD17	JS16	XXXX	JB01	XXXX	JY02	XXXX	9010	XXXX	6010	6020	XXXX	7470	XXXX	6010	6020	XXXX	7196	XXXX	3651	3532	300	YYYY	3101
BGP	BORE	BGP-S16	SAIC02D	8/18/97		D	1.00		SLRL			SLRL			SLRL		SLRL		SLRL																		
BGP	BORE	BGP-S17	SAIC01	7/31/97			0.00		SLIL			SLIL			SLIL		SLIL																				
BGP	BORE	BGP-S17	SAIC02	8/12/97			1.00		SLUL			SLUL			SLUL		SLUL																				
BGP	BORE	BGP-S18	SAIC01	8/1/97			0.00		SLIL			SLIL			SLIL		SLIL																				
BGP	BORE	BGP-S18	SAIC02	8/3/97			1.00		SLEL			SLEL			SLEL		SLEL																				
BGP	BORE	BGP-S19	SAIC01	7/31/97			0.00		SLIL			SLIL			SLIL		SLIL																				
BGP	BORE	BGP-S19	SAIC02	8/6/97			1.00		ZEQS			ZEQS			ZEQS		ZEQS																				
BGP	BORE	BGP-S20	SAIC01	8/1/97			0.00		SLGL			SLGL			SLGL		SLGL																				
BGP	BORE	BGP-S20	SAIC02	8/14/97			1.00		SLUL			SLUL			SLUL		SLUL																				
BGP	BORE	BGP-S21	SAIC01	7/31/97			0.00		SLGL			SLGL			SLGL		SLGL																				
BGP	BORE	BGP-S21	SAIC02	8/4/97			1.00		ZEQS			ZEQS			ZEQS		ZEQS																				
BGP	BORE	BGP-S22	SAIC01	8/17/97			0.00		SLUL			SLUL			SLUL		SLUL																				
BGP	BORE	BGP-S22	SAIC02	8/17/97			1.00		SLUL			SLUL			SLUL		SLUL																				
BGP	BORE	BGP-S23	SAIC01	7/30/97			0.00		SLIL			SLIL			SLIL		SLIL		SLIL																		
BGP	BORE	BGP-S24	SAIC01	7/31/97			0.00		SLGL			SLGL			SLGL		SLGL																				
BGP	BORE	BGP-S24	SAIC02	8/6/97			1.00		ZEQS			ZEQS			ZEQS		ZEQS																				
BGP	BORE	BGP-S25	SAIC01	7/30/97			0.00		SLIL			SLIL			SLIL		SLIL		SLIL																		
BGP	BORE	BGP-S25	SAIC02	8/5/97			1.00		ZEQS			ZEQS			ZEQS		ZEQS		ZEQS																		
BGP	CREK	BGP-D01	SAIC01	7/21/97			0.00		ZENS			ZENS			ZENS		ZENS		ZENS																		
BGP	CREK	BGP-D02	SAIC01	7/21/97			0.00		ZENS			ZENS			ZENS		ZENS																				
BGP	CREK	BGP-D03	SAIC01	7/21/97			0.00		ZENS			ZENS			ZENS		ZENS																				
BGP	CREK	BGP-D04	SAIC01	7/20/97			0.00		ZENS			ZENS			ZENS		ZENS		ZENS																		
BGP	CREK	BGP-D05	SAIC01	7/20/97			0.00		ZENS			ZENS			ZENS		ZENS																				
BGP	CREK	BGP-D06	SAIC01	8/1/97			0.00		SLIL			SLIL			SLIL		SLIL																				
BGP	CREK	BGP-D07	SAIC01	7/20/97			0.00		ZENS			ZENS			ZENS		ZENS																				
BGP	CREK	BGP-D07	SAIC01D	7/20/97		D	0.00		ZENS			ZENS			ZENS		ZENS																				
BGP	CREK	BGP-D08	SAIC01	7/20/97			0.00		ZENS			ZENS			ZENS		ZENS		ZENS																		
BGP	CREK	BGP-D09	SAIC01	7/20/97			0.00		ZENS			ZENS			ZENS		ZENS																				
BGP	CREK	BGP-D10	SAIC01	8/2/97			0.00		SLGL			SLGL			SLGL		SLGL																				
BGP	CREK	BGP-D11	SAIC01	7/21/97			0.00		ZENS			ZENS			ZENS		ZENS																				
BGP	CREK	BGP-D12	SAIC01	7/21/97			0.00		ZENS			ZENS			ZENS		ZENS																				
BGP	CREK	BGP-D13	SAIC01	7/16/97			0.00		SLNK			SLNK			SLNK		SLNK																				
BGP	CREK	BGP-D14	SAIC01	8/2/97			0.00		SLGL			SLGL			SLGL		SLGL																				
BGP	CREK	BGP-D15	SAIC01	7/16/97			0.00		SLNK			SLNK			SLNK		SLNK																				
BGP	CREK	BGP-D17	SAIC01	7/20/97			0.00		ZENS			ZENS			ZENS		ZENS		ZENS																		
BGP	CREK	BGP-D18	SAIC01	7/20/97			0.00		ZEMS			ZEMS			ZEMS		ZEMS		ZEMS																		
BGP	CREK	BGP-D19	SAIC01	7/20/97			0.00		ZEMS			ZEMS			ZEMS		ZEMS																				
BGP	CREK	BGP-D20	SAIC01	7/16/97			0.00		SLNK			SLNK			SLNK		SLNK																				
BGP	CREK	BGP-D21	SAIC01	8/2/97			0.00		SLGL			SLGL			SLGL		SLGL																				
BGP	CREK	BGP-D22	SAIC01	7/21/97			0.00		ZENS			ZENS			ZENS		ZENS																				
BGP	CREK	BGP-D23	SAIC01	7/21/97			0.00		ZENS			ZENS			ZENS		ZENS																				
BGP	CREK	BGP-D24	SAIC01	7/20/97			0.00		ZEMS			ZEMS			ZEMS		ZEMS																				
BGP	CREK	BGP-D25	SAIC01	7/16/97			0.00		SLNK			SLNK			SLNK		SLNK																				
BGP	POND	BGP-D16	SAIC01	7/16/97			0.00		SLNK			SLNK			SLNK		SLNK																				
BGP	POND	BGP-D16	SAIC01D	7/16/97		D	0.00		SLNK			SLNK			SLNK		SLNK																				
BGP_H	BORE	SB-BK-101	SAIC01	5/10/95			0.50		UBEF			UBEF			UBEF		UBEF																				
BGP_H	BORE	SB-BK-101	SAIC02	5/10/95			7.00		UBEF			UBEF			UBEF		UBEF																				
BGP_H	BORE	SB-BK-102	SAIC01	5/10/95			0.50		UBEF			UBEF			UBEF		UBEF																				
BGP_H	BORE	SB-BK-102	SAIC02	5/10/95			7.00		UBEF			UBEF			UBEF		UBEF																				
BGP_H	BORE	SB-BK-201	SAIC01	5/11/95			0.50		UBEF			UBEF			UBEF		UBEF		UBEF																		
BGP_H	BORE	SB-BK-201	SAIC02	5/11/95			7.00		UBEF			UBEF			UBEF		UBEF		UBEF				YCLE		YCLE			YCLE								
BGP_H	BORE	SB-BK-202	SAIC01	5/11/95			1.00		UBEF			UBEF			UBEF		UBEF		UBEF				YCLE		YCLE			YCLE								
BGP_H	BORE	SB-BK-202	SAIC02	5/11/95			7.00		UBEF			UBEF			UBEF		UBEF		UBEF																		
BGP_H	BORE	SB-BK-301	SAIC01	5/17/95			1.00		UBEF			UBEF			UBEF		UBEF		UBEF																		
BGP_H	BORE	SB-BK-301	SAIC02	5/17/95			7.00		UBEF			UBEF			UBEF		UBEF		UBEF																		
BGP_H	BORE	SB-BK-302	SAIC01	5/17/95			1.00		UBEF			UBEF			UBEF		UBEF		UBEF																		
BGP_H	BORE	SB-BK-302	SAIC02	5/17/95			7.00		UBEF			UBEF			UBEF		UBEF		UBEF																		
BGP_H	CREK	SD-BK-001	SAIC01	2/1/95			1.00		UBXD			UBXD			UBXD		UBXD		UBXD																		
BGP_H	CREK	SD-BK-002	SAIC01	2/1/95			1.00		UBXD			UBXD			UBXD		UBXD		UBXD																		
BGP_H	SURF	SS-BK-103	SAIC01	5/10/95			0.50		UBEF			UBEF			UBEF		UBEF																				
BGP_H	SURF	SS-BK-103	SAIC02	1/30/96			0.00		UBNG			UBNG			UBNG		UBNG																				
BGP_H	SURF	SS-BK-203	SAIC01	5/11/95			1.00		UBEF			UBEF			UBEF		UBEF		UBEF																		
BGP_H	SURF	SS-BK-203	SAIC02	1/27/96			0.00		UBLG			UBLG			UBLG		UBLG																				
BGP_H	SURF	SS-BK-203	SAIC03	1/27/96		D	0.00		UBOG			UBOG			UBOG		UBOG																				
BGP_H	SURF	SS-BK-303	SAIC01	5/17/95			1.00		UBEF			UBEF			UBEF		UBEF		UBEF																		

Table 4-2. Sample Matrix for Background Analytical Data
Fort McClellan, Alabama

								SOIL METHODS												WATER METHODS																	
SAMPLES								Cn		TMETALS			PB			HG		CR6		Cn		TMETALS			HG		PB			CR6		TPO4	NO3NO2	ANIONS		CARB
SWMU	Site Type	Site ID	Field Sample	Date	QC	Flag	Depth	KY01	XXXX	JD15	JS16	XXXX	JD17	JS16	XXXX	JB01	XXXX	JY02	XXXX	9010	XXXX	6010	6020	XXXX	7470	XXXX	6010	6020	XXXX	7196	XXXX	3651	3532	300	YYYY	3101
BGP_H	SURF	SS-BK-303	SAIC02	1/28/96			0.00		UBMG			UBMG			UBMG		UBMG																				
BK	BORE	SB-BK-101	SAIC03	5/10/95			10.00	XXXX		XXXX	XXXX			XXXX		XXXX																					
BK	BORE	SB-BK-201	SAIC03	5/11/95			10.00	XXXX		XXXX	XXXX		XXXX	XXXX		XXXX		XXXX																			
BK	BORE	SB-BK-202	SAIC03	5/11/95			10.00	XXXX		XXXX	XXXX			XXXX		XXXX		XXXX																			
BK	BORE	SB-BK-301	SAIC03	5/17/95		D	7.00																														
BK	BORE	SB-BK-301	SAIC04	5/17/95			10.00	XXXX		XXXX	XXXX		XXXX	XXXX		XXXX		XXXX																			
BK	BORE	SB-BK-302	SAIC03	5/17/95		D	7.00																														
BK	BORE	SB-BK-302	SAIC04	5/17/95			10.00	XXXX		XXXX	XXXX			XXXX		XXXX		XXXX																			
BGMP	CREK	BG-W01	SAIC01	8/3/97			0.00														UJUR			UJUR	UJVR	UJUR			UJUR			ZKTY	ZKJY	ZKWY		ZKOY
BGMP	CREK	BG-W01	SAIC01D	8/3/97		D	0.00														UJUR			UJUR	UJVR	UJUR			UJUR			ZKTY	ZKJY	ZKWY		ZKOY
BGMP	CREK	BG-W02	SAIC01	8/4/97			0.00														UJUR			UJUR	UJVR	UJUR			UJUR			ZKTY	ZKJY	ZKWY		ZKOY
BGMP	CREK	BG-W03	SAIC01	7/23/97			0.00														UJNR			UJNR	UJOR	UJNR			UJNR			ZKLY	ZKIY	ZKCZ		ZKGY
BGMP	CREK	BG-W03	SAIC01D	7/23/97		D	0.00														UJNR			UJNR	UJOR	UJNR			UJNR			ZKLY	ZKIY	ZKCZ		ZKGY
BGMP	CREK	BG-W04	SAIC01	7/18/97			0.00														UJGR			UJGR	UJJR	UJGR			UJGR			ZKCY	ZKEY	ZKCZ		ZKWX
BGMP	CREK	BG-W05	SAIC01	7/18/97			0.00														UJGR			UJGR	UJJR	UJGR			UJGR		UJGR	ZKCY	ZKEY	ZKCZ		ZKWX
BGMP	CREK	BG-W06	SAIC01	7/18/97			0.00														UJGR			UJGR	UJJR	UJGR			UJGR		UJGR	ZKCY	ZKEY	ZKCZ		ZKWX
BGMP	CREK	BG-W07	SAIC01	7/19/97			0.00														UJNR			UJNR	UJOR	UJNR			UJNR			ZKLY	ZKJY	ZKCZ		ZKWX
BGMP	CREK	BG-W08	SAIC01	8/3/97			0.00														UJUR			UJUR	UJVR	UJUR			UJUR			ZKTY	ZKJY	ZKWY		ZKOY
BGMP	CREK	BG-W09	SAIC01	7/17/97			0.00														UJGR			UJGR	UJJR	UJGR			UJGR			ZKCY	ZKEY	ZKCZ		ZKWX
BGMP	CREK	BG-W10	SAIC01	7/19/97			0.00														UJNR			UJNR	UJOR	UJNR			UJNR			ZKLY	ZKJY	ZKCZ		ZKWX
BGMP	CREK	BG-W12	SAIC01	7/19/97			0.00														UJNR			UJNR	UJOR	UJNR			UJNR			ZKLY	ZKJY	ZKCZ		ZKWX
BGMP	CREK	BG-W13	SAIC01	7/23/97			0.00														UJNR			UJNR	UJOR	UJNR			UJNR			ZKLY	ZKIY	ZKCZ		ZKGY
BGMP	CREK	BG-W14	SAIC01	8/13/97			0.00														ZKXY			ZKXY	UJVR	ZKXY			ZKXY			ZKTY	ZKRY	ZKBZ		ZKSY
BGMP	CREK	BG-W15	SAIC01	7/18/97			0.00														UJGR			UJGR	UJJR	UJGR			UJGR		UJGR	ZKCY	ZKEY	ZKCZ		ZKWX
BGMP	CREK	BG-W15	SAIC01D	7/18/97		D	0.00														UJGR			UJGR	UJJR	UJGR			UJGR		UJGR	ZKCY	ZKEY	ZKCZ		ZKWX
BGMP	CREK	BG-W16	SAIC01	7/17/97			0.00														UJGR			UJGR	UJJR	UJGR			UJGR			ZKCY	ZKEY	ZKCZ		ZKWX
BGMP	CREK	BG-W17	SAIC01	7/18/97			0.00														UJGR			UJGR	UJJR	UJGR			UJGR		UJGR	ZKCY	ZKEY	ZKCZ		ZKWX
BGMP	CREK	BG-W18	SAIC01	8/3/97			0.00														UJUR			UJUR	UJVR	UJUR			UJUR			ZKTY	ZKJY	ZKWY		ZKOY
BGMP	CREK	BG-W19	SAIC01	7/20/97			0.00														UJNR			UJNR	UJOR	UJNR			UJNR			ZKLY	ZKJY	ZKCZ		ZKWX
BGMP	CREK	BG-W20	SAIC01	8/3/97			0.00														UJUR			UJUR	UJVR	UJUR			UJUR			ZKTY	ZKJY	ZKWY		ZKOY
BGMP	CREK	BG-W21	SAIC01	7/17/97			0.00														UJGR			UJGR	UJJR	UJGR			UJGR			ZKCY	ZKEY	ZKCZ		ZKWX
BGMP	CREK	BG-W22	SAIC01	8/20/97			0.00														UJJS			UJJS	UJHS	UJJS			UJJS			ZKTY	ZKRY	ZKBZ		ZKSY
BGMP	CREK	BG-W22	SAIC01D	8/20/97		D	0.00														UJJS			UJJS	UJHS	UJJS			UJJS			ZKTY	ZKRY	ZKBZ		ZKSY
BGMP	CREK	BG-W23	SAIC01	7/19/97			0.00														UJNR			UJNR	UJOR	UJNR			UJNR			ZKLY	ZKJY	ZKCZ		ZKWX
BGMP	CREK	BG-W24	SAIC01	8/5/97			0.00														ZKUY			ZKUY	UJVR	ZKUY			ZKUY			ZKTY	ZKRY	ZKWY		ZKOY
BGMP	LAKE	BG-W11	SAIC01	7/20/97			0.00														UJNR			UJNR	UJOR	UJNR			UJNR		UJNR	ZKLY	ZKJY	ZKCZ		ZKWX
BGMP	LAKE	BG-W25	SAIC01	7/17/97			0.00														UJGR			UJGR	UJJR	UJGR			UJGR			ZKCY	ZKEY	ZKCZ		ZKWX
BGMP	RNSW	BG-D02	SAICRB18	8/4/97	R		0.00													ZKQY		UJRT	UJUR		UJVR		UJRT	UJUR		ME42						
BGMP	RNSW	BG-D03	SAICRB09	7/23/97	R		0.00													ZKKY		UJRT	UJNR		UJOR		UJRT	UJNR									
BGMP	RNSW	BG-D04	SAICRB04	7/18/97	R		0.00													ZKKY		UJRT	UJGR		UJJR		UJRT	UJGR		ME27						
BGMP	RNSW	BG-D09	SAICRB03	7/17/97	R		0.00													ZKHY		UJRT	UJGR		UJJR		UJRT	UJGR									
BGMP	RNSW	BG-D10	SAICRB05	7/19/97	R		0.00													ZKKY		UJRT	UJNR		UJJR		UJRT	UJNR									
BGMP	RNSW	BG-D14	SAICRB01	7/15/97	R		0.00													ZKHY		UJRT	UJGR		UJJR		UJRT	UJGR									
BGMP	RNSW	BG-D14	SAICRB24	8/13/97	R		0.00													ZKXY		UJRT	UJUR		UJVR		UJRT	UJUR									
BGMP	RNSW	BG-D18	SAICRB16	8/3/97	R		0.00													ZKQY		UJRT	UJUR		UJVR		UJRT	UJUR									
BGMP	RNSW	BG-S03	SAICRB10	7/29/97	R		0.00													ZKQY		UJRT	UJNR		UJOR		UJRT	UJNR									
BGMP	RNSW	BG-S05	SAICRB27	8/16/97	R		0.00													ZKXY		UJRT	UJUR		UJVR		UJRT	UJUR									
BGMP	RNSW	BG-S09	SAICRB08	7/22/97	R		0.00													ZKKY		UJRT	UJNR		UJOR		UJRT	UJNR									
BGMP	RNSW	BG-S11	SAICRB30	8/19/97	R		0.00													ZKZY		UJRT	UJJS		UJHS		UJRT	UJJS									
BGMP	RNSW	BG-S16	SAICRB28	8/17/97	R		0.00													ZKXY		UJRT	UJUR		UJVR		UJRT	UJUR									
BGMP	RNSW	BG-S21	SAICRB26	8/15/97	R		0.00													ZKXY		UJRT	UJUR		UJVR		UJRT	UJUR									
BGMP	WELL	BK-G03	SAIC01X	7/14/97			0.00														ZKFY			ZKFY	UJJR	ZKFY			ZKFY		ZKFY	ZKCY	ZKEY	ZKCZ		ZKVX
BGMP	WELL	BK-G04	SAIC01X	10/2/97			15.10														ZKOZ			ZKOZ	UJZS	ZKOZ			ZKOZ			ZKIZ	ZKLZ	ZKDZ		ZKMZ
BGMP	WELL	BK-G06	SAIC01X	10/1/97			6.80														ME85			ME85	UJZS	ME85			ME85		ME85	ZKIZ	ZKNZ	ZKDZ		ZKMZ
BGMP	WELL	BK-G06	SAIC01XD	10/1/97		D	6.80														ME85			ME85	UJZS	ME85			ME85		ME85	ZKIZ	ZKLZ	ZKDZ		ZKJZ
BGMP	WELL	BK-G07	SAIC01	10/4/97			7.49														ZKOZ			ZKOZ	UJZS	ZKOZ			ZKOZ			ZKIZ	ZKNZ	ZKTZ		ZKMZ
BGMP	WELL	BK-G08	SAIC01	10/2/97			11.50														ZKOZ			ZKOZ	UJZS	ZKOZ			ZKOZ			ZKIZ	ZKLZ	ZKDZ		ZKMZ
BGMP	WELL	BK-G09	SAIC01	10/1/97			62.55														ME85			ME85	UJZS	ME85			ME85		ME85	ZKIZ	ZKLZ	ZKDZ		ZKJZ
BGMP	WELL	BK-G10	SAIC01	10/1/97			44.50														ME85			ME85	UJZS	ME85			ME85		ME85	ZKIZ	ZKLZ	ZKDZ		ZKJZ
BGMP	WELL	BK-G11	SAIC01	10/2/97			26.60														ZKOZ			ZKOZ	UJZS	ZKOZ			ZKOZ			ZKIZ	ZKLZ	ZKDZ		ZKMZ
BGMP	WELL	BK-YAHOU	SAIC01	10/2/97			8.70														ZKOZ			ZKOZ	UJZS	ZKOZ			ZKOZ			ZKIZ	ZKLZ	ZKDZ		ZKMZ
BGMP	WELL	DIWATER	SAIC01	7/14/97			0.00														ZKFY			ZKFY	UJJR	ZKFY			ZKFY		ZKFY	ZKCY	ZKEY	ZKCZ		ZKVX
BGMP	WELL	LF1-G01	SAIC01X	10/3/97			30.00														ZKOZ			ZKOZ	UJZS	ZKOZ			ZKOZ			ZKIZ	ZKNZ	ZKDZ		ZKMZ
BGMP	WELL	LF2-G01	SAIC01X	10/3/97			22.00														ZKOZ			ZKOZ	UJZS	ZKOZ			ZKOZ			ZKIZ	ZKNZ	ZKDZ		ZKMZ

Table 4-3. Background Groundwater Monitoring Locations
Fort McClellan, Alabama

Well	Location	Easting	Northing	Drilled Depth	Top Screen	Bottom Screen	TOC Elevation	Reference
BK-G03	Main Post	515873.89	1178260.67	ND	ND	ND	ND	Reilly Lake
BK-G04	Main Post	513556.12	1178260.67	32			753.32	MW-5-94, LF #4
BK-G06	Main Post	522618.02	1157688.93	20	9.3	19.3	1022.59	SAIC
BK-G07	Main Post	521619.98	1178287.9	93.5	60.7	70.7	922.04	SAIC
BK-G08	Main Post	524893.5	1170171.3	63	45	55	969.64	SAIC
BK-G09	Main Post	517976.5	1164298.2	145.5	134.2	144.2	876.08	SAIC
BK-G10	Main Post	512551.8	1173672.4	55	43.9	53.9	823.91	SAIC
BK-G11	Main Post	516900.1	1168222.2	42.8	32.3	42.3	807.27	SAIC
BK-YAHOU	Main Post	510728.04	1158983.5	20	4.26	14.26	994.36	Lake Yahou
T24A-G03	Main Post	523558.29	1158265.24	40	26	36	1032.83	Area T-24
LF1-G01	Main Post	508707.95	1170252.9	41.5	30	40	796	Landfill #1
LF2-G01	Main Post	516723.95	1175402.57	27	17	27	809.59	Landfill #2
MW1-G01	Main Post	512052.07	1176855.09	14.5	4.5	14.5	778.57	UST
MW2-G02	Main Post	513969.15	1170305.66	9.5	4.4	9.5	749.09	UST
MW4-G01	Main Post	512380.42	1167753.38	9	3	9	786.42	UST
MW5-G01	Main Post	510559.54	1168676.57	15.1	5.2	15.1	756.56	UST
GW-BKPR-01	Pelham Range	447981.1	1162828.9	20.2	9.3	19.3	573.67	SAIC
GW-BKPR-02	Pelham Range	459965.7	1160738.2	61	35.3	45.3	741.8	SAIC
GW-BKPR-03	Pelham Range	484272.04	1164133.45	55	41.4	51.4	739.28	SAIC
GW-P8607	Pelham Range	460415.85	1171390.87	ND	ND	ND	ND	U.S. Army
GW-P8203	Pelham Range	470615.3	1181649.92	165	ND	ND	ND	U.S. Army
GW-P8802	Pelham Range	451821.94	1176379.77	350	ND	ND	ND	U.S. Army
GW-P8415	Pelham Range	481864.88	1170100.61	350	ND	ND	ND	U.S. Army
CW-G01	Pelham Range	504352.4	1182791.07	409	ND	ND	~719	Weaver
CW-G02	Pelham Range	500129.85	1180718.18	125	ND	ND	~720	Weaver
LDLF-4	Pelham Range	472922.31	1155737.06	51.4	ND	ND	~787	ANAD LF #4
McCULLARS	Pelham Range	477987.51	1150596.34	95	ND	ND	~708	Private
WILLIAMS	Pelham Range	482474.9	1156890.38	187	ND	ND	~760	Private
RL-G01	Pelham Range	449990.5	1176679.7	50	40	50	590.54	Range L
OWH-G02	Pelham Range	472076.02	1179262.6	104	98	108	667.23	Old Water Hole

1. Location coordinates in Alabama (east) state plane coordinate system.
ND=No data

Table 4-4. Background Groundwater Analytical Results
Fort McClellan, Alabama

Site ID		BK-G03	BK-G03	BK-G03	BK-G03	BK-G03	BK-G04	BK-G04
Field Sample Number		SAIC01	SAIC02D	SAIC03	SAIC04D	SAIC01X	SAIC01	SAIC02
Site Type		WELL	WELL	WELL	WELL	WELL	WELL	WELL
Collection Date		7/13/94	7/13/94	1/30/95	1/30/95	7/14/97	7/13/94	2/5/95
Depth (ft)		0	0	0	0	0	13	13.2
ANIONS	Units							
Bromide	ug/L	N/A	N/A	N/A	N/A	200 U	N/A	N/A
Chloride	ug/L	N/A	N/A	N/A	N/A	**3110**	N/A	N/A
Fluoride	ug/L	N/A	N/A	N/A	N/A	200 U	N/A	N/A
Sulfate	ug/L	N/A	N/A	N/A	N/A	**2100**	N/A	N/A
CARBONATES								
Alkalinity-phenolphthalein	ug/L	N/A	N/A	N/A	N/A	5000 U	N/A	N/A
Bicarbonate	ug/L	N/A	N/A	N/A	N/A	**188000**	N/A	N/A
Carbonate	ug/L	N/A	N/A	N/A	N/A	5000 U	N/A	N/A
Total Alkalinity	ug/L	N/A	N/A	N/A	N/A	**188000**	N/A	N/A
METALS								
Aluminum	ug/L	112 U	112 U	112 U	112 U	50 U	**8740**	**898**
Antimony	ug/L	10 U	10 U	5 U	5 U	1 U	10 U	5 U
Arsenic	ug/L	2.35 U	2.35 U	2.35 U	2.35 U	1.1 U	2.35 U	2.35 U
Barium	ug/L	**14.5**	**15.1**	**18.9**	**20.1**	**19.3**	**40.1**	**14.6**
Beryllium	ug/L	1.12 U	1.12 U	**1.93**	**1.66**	0.2 U	**2.37**	1.12 U
Cadmium	ug/L	5 U	5 U	5 U	5 U	**0.2**	5 U	5 U
Calcium	ug/L	**31900**	**31500**	**35200**	**35600**	**36000** J	**2250**	**735**
Chromium	ug/L	16.8 U	16.8 U	16.8 U	16.8 U	10 U	16.8 U	16.8 U
Cobalt	ug/L	25 U	25 U	25 U	25 U	20 U	25 U	25 U
Copper	ug/L	18.8 U	18.8 U	18.8 U	18.8 U	5 U	18.8 U	18.8 U
Cyanide	ug/L	N/A	N/A	N/A	N/A	5 U	N/A	N/A
Hexavalent Chromium	ug/L	N/A	N/A	N/A	N/A	20 U	N/A	N/A
Iron	ug/L	77.5 U	77.5 U	**234**	**203**	**47.2**	**21700**	**1920**
Lead	ug/L	4.47 U	4.47 U	**6.15**	**5.91**	**0.6**	**9.71**	4.47 U
Magnesium	ug/L	**19900**	**19600**	**21900**	**22100**	**21700**	**3900**	**923**
Manganese	ug/L	9.67 U	9.67 U	**9.83**	9.67 U	5 U	**551**	**75.2**
Mercury	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U
Nickel	ug/L	32.1 U	32.1 U	32.1 U	32.1 U	15 U	32.1 U	32.1 U
Potassium	ug/L	1240 U	1240 U	1240 U	1240 U	**714**	**5890**	**1680**
Selenium	ug/L	2.53 U	2.53 U	2.53 U	2.53 U	5 U	2.53 U	2.53 U
Silver	ug/L	10 U	10 U	10 U	10 U	0.1 U	10 U	10 U
Sodium	ug/L	**1420**	**1390**	**1450**	**1510**	**1870**	**1940**	**1840**
Thallium	ug/L	2 U	**5.28**	2.71 U	2.71 U	0.1 U	2 U	2.71 U
Vanadium	ug/L	27.6 U	27.6 U	27.6 U	27.6 U	10 U	27.6 U	27.6 U
Zinc	ug/L	**442**	**433**	**222**	**203**	**236**	**60.7**	18 U
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	N/A	N/A	N/A	N/A	**470**	N/A	N/A
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	N/A	N/A	N/A	N/A	10 UJ	N/A	N/A

Table 4-4. Background Groundwater Analytical Results
Fort McClellan, Alabama

Site ID		BK-G04	BK-G06	BK-G06	BK-G06	BK-G06	BK-G07	BK-G08
Field Sample Number		SAIC01X	SAIC01	SAIC03	SAIC01X	SAIC01XD	SAIC01	SAIC01
Site Type		WELL	WELL	WELL	WELL	WELL	WELL	WELL
Collection Date		10/2/97	7/15/94	2/2/95	10/1/97	10/1/97	10/4/97	10/2/97
Depth (ft)		15.1	17.5	14.6	6.8	6.8	7.49	11.5
ANIONS	Units							
Bromide	ug/L	200 U	N/A	N/A	200 U	200 U	200 U	200 U
Chloride	ug/L	**2610**	N/A	N/A	1310 U	1330 U	**1210**	**1370**
Fluoride	ug/L	200 U	N/A	N/A	200 U	200 U	**202**	**259**
Sulfate	ug/L	1000 U	N/A	N/A	1670 U	1650 U	**2920**	**14300**
CARBONATES								
Alkalinity-phenolphthalein	ug/L	5000 U	N/A	N/A	5000 U	5000 U	5000 U	**104000**
Bicarbonate	ug/L	**9000**	N/A	N/A	5000 U	5000 U	**132000**	**136000**
Carbonate	ug/L	5000 U	N/A	N/A	5000 U	5000 U	5000 U	5000 U
Total Alkalinity	ug/L	**9000**	N/A	N/A	5000 U	5000 U	**132000**	**172000**
METALS								
Aluminum	ug/L	**950** J	**5450**	**1010**	50 U	**100** J	**389** J	**5950** J
Antimony	ug/L	0.6 U	10 U	5 U	0.6 U	0.6 U	0.6 U	0.6 U
Arsenic	ug/L	1.1 U	2.35 U	2.35 U	1.1 U	1.1 U	1.1 U	**2.2**
Barium	ug/L	**23.6**	**53.1**	**26.8**	**19.9**	**20.9**	**50.5**	**123**
Beryllium	ug/L	**1.2**	1.12 U	1.12 U	0.2 U	0.2 U	**0.7**	**2**
Cadmium	ug/L	**0.2**	5 U	5 U	0.1 U	0.1 U	**0.2**	**0.3**
Calcium	ug/L	**1750**	**234**	**217**	263 U	231 U	**37700**	**13600**
Chromium	ug/L	10 U	16.8 U	16.8 U	10 U	10 U	10 U	10 U
Cobalt	ug/L	20 U	25 U	25 U	20 U	20 U	20 U	20 U
Copper	ug/L	5 U	18.8 U	18.8 U	5 U	5 U	5 U	**8.2**
Cyanide	ug/L	5 UJ	N/A	N/A	5 U	5 UJ	5 U	5 UJ
Hexavalent Chromium	ug/L	N/A	N/A	N/A	20 U	20 U	N/A	N/A
Iron	ug/L	**788** J	**25800**	**3560**	45 U	**158** J	**396** J	**4800** J
Lead	ug/L	**3.1**	4.47 U	4.47 U	0.6 U	0.6 U	**3**	**18.8**
Magnesium	ug/L	**1320**	**435**	**176**	100 U	100 U	**12100**	**2230**
Manganese	ug/L	**161**	**59.3**	**21.7**	5 U	5 U	**159**	**131**
Mercury	ug/L	0.2 U	0.1 U	0.1 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	ug/L	15 U	32.1 U	32.1 U	15 U	15 U	15 U	15 U
Potassium	ug/L	**1280**	**6280**	**3230**	**1960**	**2170**	**3940**	**68500**
Selenium	ug/L	2.2 U	2.53 U	2.53 U	2.2 U	2.2 U	2.2 U	2.2 U
Silver	ug/L	0.1 U	10 U	10 U	0.1 U	0.1 U	0.1 U	0.1 U
Sodium	ug/L	**1410**	**1370**	**1150**	898 U	934 U	**1240**	**35900**
Thallium	ug/L	0.1 U	**4.16**	2.44 U	0.1 U	0.1 U	0.1 U	0.1 U
Vanadium	ug/L	10 U	27.6 U	27.6 U	10 U	10 U	10 U	**11.1**
Zinc	ug/L	30 U	**25.9**	18 U	30 U	30 U	30 U	**44.5**
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	10 U	N/A	N/A	10 U	10 U	127 U	161 U
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	**15.7**	N/A	N/A	10 U	10 U	**50.4**	**282**

Table 4-4. Background Groundwater Analytical Results
Fort McClellan, Alabama

Site ID		BK-G09	BK-G10	BK-G11	BK-YAHOU	CW-G01	CW-G01	CW-G01
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC03	SAIC01X
Site Type		WELL	WELL	WELL	WELL	WELL	WELL	WELL
Collection Date		10/1/97	10/1/97	10/2/97	10/2/97	7/18/94	2/3/95	10/2/97
Depth (ft)		62.55	44.5	26.6	8.7	0	0	0
ANIONS	Units							
Bromide	ug/L	200 U	200 U	200 U	200 U	N/A	N/A	200 U
Chloride	ug/L	937 U	2640 U	**2300**	**1080**	N/A	N/A	N/A
Fluoride	ug/L	200 U	200 U	200 U	200 U	N/A	N/A	200 U
Sulfate	ug/L	**15800**	2160 U	**4330**	**3740**	N/A	N/A	N/A
CARBONATES								
Alkalinity-phenolphthalein	ug/L	5000 U	5000 U	5000 U	5000 U	N/A	N/A	5000 U
Bicarbonate	ug/L	172000 U	21000 U	**104000**	5000 U	N/A	N/A	**156000**
Carbonate	ug/L	5000 U	5000 U	5000 U	5000 U	N/A	N/A	5000 U
Total Alkalinity	ug/L	172000 U	21000 U	**104000**	5000 U	N/A	N/A	**156000**
METALS								
Aluminum	ug/L	50 U	**2700** J	50 U	50 U	112 U	112 U	50 U
Antimony	ug/L	**0.7**	0.6 U	0.6 U	0.6 U	10 U	5 U	0.6 U
Arsenic	ug/L	1.1 U	1.1 U	1.1 U	1.1 U	2.35 U	2.35 U	1.1 U
Barium	ug/L	**140**	**39.5**	**158**	**39.2**	**67.6**	**69.4**	**75.7**
Beryllium	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	1.12 U	**1.6**	0.2 U
Cadmium	ug/L	**0.1**	**0.1**	**0.3**	**0.7**	5 U	5 U	0.1 U
Calcium	ug/L	33900 U	1770 U	**73100**	**1010**	**40300**	**41600**	**34600**
Chromium	ug/L	10 U	10 U	10 U	10 U	16.8 U	16.8 U	10 U
Cobalt	ug/L	20 U	20 U	20 U	20 U	25 U	25 U	20 U
Copper	ug/L	5 U	5 U	5 U	5 U	18.8 U	18.8 U	5 U
Cyanide	ug/L	5 UJ	5 UJ	5 UJ	5 U	N/A	N/A	5 UJ
Hexavalent Chromium	ug/L	20 U	20 U	N/A	N/A	N/A	N/A	N/A
Iron	ug/L	**47.6** J	**3440** J	45 U	45 U	77.5 U	77.5 U	45 U
Lead	ug/L	0.7 U	2.1 U	0.6 U	0.6 U	4.47 U	4.47 U	0.6 U
Magnesium	ug/L	18400 U	4550 U	**4930**	**557**	**14900**	**15200**	**12500**
Manganese	ug/L	**14**	**60.1**	**115**	**228**	9.67 U	9.67 U	5 U
Mercury	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.1 U	0.1 U	0.2 U
Nickel	ug/L	15 U	15 U	15 U	15 U	32.1 U	32.1 U	15 U
Potassium	ug/L	**16000**	768 U	**1410**	**511**	**2480**	**2350**	**1800**
Selenium	ug/L	2.2 U	2.2 U	2.2 U	2.2 U	2.53 U	2.53 U	2.2 U
Silver	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	10 U	10 U	0.1 U
Sodium	ug/L	**8070**	**4160**	**2340**	**672**	**3320**	**3410**	**2790**
Thallium	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	2 U	2.44 U	0.1 U
Vanadium	ug/L	10 U	10 U	10 U	10 U	27.6 U	27.6 U	10 U
Zinc	ug/L	30 U	30 U	30 U	30 U	18 U	18 U	30 U
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	23 U	468 U	14 U	15 U	N/A	N/A	1110 U
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	10 U	**78.3**	10 U	10 U	N/A	N/A	**11.6**

Table 4-4. Background Groundwater Analytical Results
Fort McClellan, Alabama

Site ID		CW-G02	CW-G02	CW-G02	FPR001	FPR001	FPR001	GW-BKPR-01
Field Sample Number		SAIC01	SAIC02	SAIC01X	FPR001	1	2	SAIC01
Site Type		WELL	WELL	WELL	TAPW	TAPW	TAPW	WELL
Collection Date		7/18/94	2/3/95	10/2/97	2/27/92	1/12/94	1/12/94	10/1/97
Depth (ft)		0	0	0	0	0	0	41.6
ANIONS	Units							
Bromide	ug/L	N/A	N/A	200 U	N/A	N/A	N/A	200 U
Chloride	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoride	ug/L	N/A	N/A	200 U	N/A	N/A	N/A	200 U
Sulfate	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CARBONATES								
Alkalinity-phenolphthalein	ug/L	N/A	N/A	5000 U	N/A	N/A	N/A	5000 U
Bicarbonate	ug/L	N/A	N/A	**152000**	N/A	N/A	N/A	6000 U
Carbonate	ug/L	N/A	N/A	5000 U	N/A	N/A	N/A	5000 U
Total Alkalinity	ug/L	N/A	N/A	**152000**	N/A	N/A	N/A	6000 U
METALS								
Aluminum	ug/L	112 U	112 U	50 U	112 U	112 U	112 U	**296** J
Antimony	ug/L	10 U	5 U	0.6 U	60 X	60 U	60 U	0.6 U
Arsenic	ug/L	2.35 U	2.35 U	1.1 U	117 U	117 U	117 U	1.1 U
Barium	ug/L	**23.5**	**22**	**24.9**	**351**	**653**	**633**	17.6 U
Beryllium	ug/L	1.12 U	**2.12**	0.2 U	1.12 U	**1.21**	1.12 U	0.2 U
Cadmium	ug/L	5 U	5 U	0.1 U	6.78 U	6.78 U	6.78 U	**0.2**
Calcium	ug/L	**55400**	**55100**	**47700**	**26000**	**29800**	**29200**	1880 U
Chromium	ug/L	16.8 U	16.8 U	10 U	16.8 U	16.8 U	16.8 U	10 U
Cobalt	ug/L	25 U	25 U	20 U	25 U	25 U	25 U	**25.2**
Copper	ug/L	18.8 U	18.8 U	5 U	18.8 U	**207**	**210**	5 U
Cyanide	ug/L	N/A	N/A	5 UJ	N/A	N/A	N/A	5 UJ
Hexavalent Chromium	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/L	77.5 U	77.5 U	45 U	**5850**	**22900**	**22000**	**179** J
Lead	ug/L	4.47 U	4.47 U	0.6 U	43.4 X	43.4 U	43.4 U	1.8 U
Magnesium	ug/L	**6200**	**6030**	**5190**	**8740**	**9270**	**9040**	293 U
Manganese	ug/L	9.67 U	9.67 U	5 U	**461**	**447**	**436**	**296**
Mercury	ug/L	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.2 U
Nickel	ug/L	32.1 U	32.1 U	15 U	32.1 U	32.1 U	32.1 U	15 U
Potassium	ug/L	1240 U	1240 U	**1260**	1240 U	**1420**	**1560**	**584**
Selenium	ug/L	2.53 U	2.53 U	2.2 U	97.1 U	97.1 U	97.1 U	2.2 U
Silver	ug/L	10 U	10 U	0.1 U	10 U	10 U	10 U	0.1 U
Sodium	ug/L	**3120**	**2920**	**2590**	**7170**	**7150**	**6990**	1180 U
Thallium	ug/L	2 U	2.44 U	0.1 U	125 X	125 X	125 X	0.1 U
Vanadium	ug/L	27.6 U	27.6 U	10 U	27.6 U	27.6 U	27.6 U	10 U
Zinc	ug/L	**38.3**	18 U	30 U	**431**	**1520**	**1430**	30 U
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	N/A	N/A	1040 U	N/A	N/A	N/A	353 U
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	N/A	N/A	10 U	N/A	N/A	N/A	**23.4**

Table 4-4. Background Groundwater Analytical Results
Fort McClellan, Alabama

Site ID		GW-BKPR-02	GW-BKPR-03	GW-P8203	GW-P8415	GW-P8607	GW-P8607	GW-P8802
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01D	SAIC01
Site Type		WELL	WELL	WELL	WELL	WELL	WELL	WELL
Collection Date		10/1/97	10/1/97	10/3/97	10/3/97	10/3/97	10/3/97	7/14/97
Depth (ft)		32	13.3	0	0	0	0	0
ANIONS	Units							
Bromide	ug/L	**715**	200 U	200 U	200 U	200 U	200 U	200 U
Chloride	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoride	ug/L	**255**	200 U	200 U	200 U	200 U	200 U	200 U
Sulfate	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CARBONATES								
Alkalinity-phenolphthalein	ug/L	**132000**	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Bicarbonate	ug/L	64000 U	148000 U	**162000**	**128000**	**192000**	**216000**	**68000**
Carbonate	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Total Alkalinity	ug/L	164000 U	148000 U	**162000**	**128000**	**192000**	**216000**	**68000**
METALS								
Aluminum	ug/L	**2690** J	**278** J	50 J	50 U	50 U	50 U	50 U
Antimony	ug/L	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	1 U
Arsenic	ug/L	**4.5**	1.1 U	1.1 U	1.1 U	**219**	**224**	1.1 U
Barium	ug/L	9.4 U	16.8 U	6.5 U	**5.5**	**43.4**	**41.9**	**401**
Beryllium	ug/L	0.2 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	ug/L	0.1 U	0.1 U	**0.2**	0.1 U	0.1 U	0.1 U	**1.3**
Calcium	ug/L	**42400**	26300 U	28100 U	**22900**	**27000**	**27200**	**27700** J
Chromium	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cobalt	ug/L	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Copper	ug/L	5 U	5 U	5 U	5 U	**53.3**	**53.3**	**36.6**
Cyanide	ug/L	5 UJ	5 UJ	5 UJ	5 U	5 U	5 U	5 U
Hexavalent Chromium	ug/L	20 U	N/A	N/A	N/A	N/A	N/A	20 U
Iron	ug/L	**295** J	**156** J	45 J	**53.9** J	**9260** J	**9610** J	**5620**
Lead	ug/L	1.7 U	0.6 U	**1.9**	0.6 U	**5.1**	**5.1**	**23.7**
Magnesium	ug/L	100 U	15400 U	16700 U	**13600**	**24200**	**24500**	**8150**
Manganese	ug/L	**27.2**	**26.2**	5 U	5 U	**275**	**286**	**176**
Mercury	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	ug/L	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Potassium	ug/L	**22000**	480 U	270 U	**670**	**911**	**890**	**709**
Selenium	ug/L	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	5 U
Silver	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Sodium	ug/L	**4170**	1040 U	892 U	**893**	**1500**	**1520**	**6290**
Thallium	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	**0.1**	**0.1**	0.1 U
Vanadium	ug/L	**11.4**	10 U	10 U	10 U	10 U	10 U	10 U
Zinc	ug/L	30 U	30 U	**135**	30 U	**201**	**196**	**1150**
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	74 U	64 U	**771**	79 U	118 U	119 U	10 U
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	**92.1**	10 U	10 U	10 U	**30.2**	**24**	**192** J

Table 4-4. Background Groundwater Analytical Results
Fort McClellan, Alabama

Site ID		GW-P8802	LDLF-4	LDLF-4	LF1-G01	LF1-G01	LF1-G01	LF2-G01
Field Sample Number		SAIC01D	SAIC02	SAIC01X	SAIC01	SAIC03	SAIC01X	SAIC01
Site Type		WELL	WELL	WELL	WELL	WELL	WELL	WELL
Collection Date		7/14/97	4/1/96	10/3/97	7/13/94	2/1/95	10/3/97	7/4/94
Depth (ft)		0	0	21.74	30	29.9	30	20.6
ANIONS	Units							
Bromide	ug/L	200 U	N/A	**332**	N/A	N/A	200 U	N/A
Chloride	ug/L	N/A	N/A	N/A	N/A	N/A	**4930**	N/A
Fluoride	ug/L	200 U	N/A	200 U	N/A	N/A	200 U	N/A
Sulfate	ug/L	N/A	N/A	N/A	N/A	N/A	**36000**	N/A
CARBONATES								
Alkalinity-phenolphthalein	ug/L	5000 U	N/A	5000 U	N/A	N/A	5000 U	N/A
Bicarbonate	ug/L	**120000**	N/A	5000 U	N/A	N/A	**70000**	N/A
Carbonate	ug/L	5000 U	N/A	5000 U	N/A	N/A	5000 U	N/A
Total Alkalinity	ug/L	**120000**	N/A	5000 U	N/A	N/A	**70000**	N/A
METALS								
Aluminum	ug/L	50 U	**1220**	**120** J	**1580**	**1440**	**1450** J	**1850**
Antimony	ug/L	1 U	3.03 U	0.6 U	10 U	5 U	0.6 U	10 U
Arsenic	ug/L	1.1 U	2.54 U	1.1 U	2.35 U	2.35 U	1.1 U	2.35 U
Barium	ug/L	**371**	**21.9**	**25.2**	**27.2**	**41.9**	**51.1**	**17.8**
Beryllium	ug/L	0.2 U	5 U	0.2 U	1.12 U	**1.31**	0.2 U	1.12 U
Cadmium	ug/L	**1.3**	4.01 U	**0.1**	5 U	5 U	**0.1**	5 U
Calcium	ug/L	**27600** J	500 U	**271**	**14100**	**26700**	**17400**	**4680**
Chromium	ug/L	10 U	6.02 U	10 U	16.8 U	16.8 U	10 U	16.8 U
Cobalt	ug/L	20 U	25 U	20 U	25 U	25 U	20 U	25 U
Copper	ug/L	**32.5**	8.09 U	5 U	18.8 U	18.8 U	5 U	18.8 U
Cyanide	ug/L	5 U	N/A	5 U	N/A	N/A	5 U	N/A
Hexavalent Chromium	ug/L	20 U	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/L	**5640**	**1130**	45 U	**3080**	**1870**	**2120** J	**3280**
Lead	ug/L	**25**	1.26 U	**1.6**	4.47 U	4.47 U	**1.4**	4.47 U
Magnesium	ug/L	**8130**	**522**	**344**	**10300**	**9750**	**8250**	**6210**
Manganese	ug/L	**177**	**18.2**	5 U	**275**	**153**	**226**	**39.1**
Mercury	ug/L	0.2 U	0.243 U	0.2 U	0.1 U	0.1 U	0.2 U	0.1 U
Nickel	ug/L	15 U	34.3 U	15 U	32.1 U	32.1 U	15 U	32.1 U
Potassium	ug/L	**705**	**810**	**208**	**2480**	1240 U	**735**	1240 U
Selenium	ug/L	5 U	3.02 U	2.2 U	2.53 U	2.53 U	2.2 U	2.53 U
Silver	ug/L	0.1 U	4.6 U	0.1 U	10 U	10 U	0.1 U	10 U
Sodium	ug/L	**6320**	**6130**	**6440**	**13900**	**13700**	**11200**	**13700**
Thallium	ug/L	0.1 U	81.4 X	0.1 U	2 U	2.71 U	0.1 U	2 U
Vanadium	ug/L	10 U	11 U	10 U	27.6 U	27.6 U	10 U	27.6 U
Zinc	ug/L	**1160**	21.1 U	30 U	**37.7**	18 U	30 U	18 U
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	10 U	N/A	**430**	N/A	N/A	246 U	N/A
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	**256** J	N/A	**13.6**	N/A	N/A	**42.5**	N/A

Table 4-4. Background Groundwater Analytical Results
Fort McClellan, Alabama

Site ID		LF2-G01	LF2-G01	MCCULLERS	MW1-G01	MW2-G02	MW4-G01	MW5-G01
Field Sample Number		SAIC03	SAIC01X	SAIC02	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		WELL	WELL	WELL	WELL	WELL	WELL	WELL
Collection Date		1/31/95	10/3/97	3/31/96	10/2/97	10/4/97	10/3/97	10/2/97
Depth (ft)		19.3	22	0	5.82	80.49	3	5.91
ANIONS	Units							
Bromide	ug/L	N/A	200 U	N/A	200 U	200 U	**278**	**330**
Chloride	ug/L	N/A	**7910**	N/A	**3910**	**1920**	**5390**	**6090**
Fluoride	ug/L	N/A	200 U	N/A	200 U	**530**	**646**	**234**
Sulfate	ug/L	N/A	**23900**	N/A	**1400000**	**10800**	**106000**	**30100**
CARBONATES								
Alkalinity-phenolphthalein	ug/L	N/A	5000 U	N/A	5000 U	5000 U	5000 U	5000 U
Bicarbonate	ug/L	N/A	**36000**	N/A	**392000**	**252000**	**244000**	**200000**
Carbonate	ug/L	N/A	5000 U	N/A	5000 U	5000 U	5000 U	5000 U
Total Alkalinity	ug/L	N/A	**36000**	N/A	**392000**	**252000**	**244000**	**200000**
METALS								
Aluminum	ug/L	**714**	**550** J	141 U	**2020** J	**1740** J	**720** J	**4530** J
Antimony	ug/L	5 U	0.6 U	3.03 U	0.6 U	0.6 U	0.6 U	**0.8**
Arsenic	ug/L	2.35 U	1.1 U	2.54 U	1.1 U	**1.5**	**1.9**	**3.7**
Barium	ug/L	**17**	**15**	**105**	**36.4**	**330**	**51.1**	**277**
Beryllium	ug/L	**1.11**	0.2 U	5 U	**0.2**	**0.2**	0.2 U	**0.4**
Cadmium	ug/L	5 U	**0.3**	4.01 U	**1**	**0.6**	**5.3**	**0.3**
Calcium	ug/L	**6300**	**5310**	**25400**	**452000**	**35800**	**71400**	**47000**
Chromium	ug/L	16.8 U	10 U	6.02 U	10 U	10 U	10 U	10 U
Cobalt	ug/L	25 U	20 U	25 U	20 U	**20.2**	20 U	**20.4**
Copper	ug/L	18.8 U	5 U	**235**	5 U	**5.3**	5 U	**8.7**
Cyanide	ug/L	N/A	5 U	N/A	5 UJ	5 U	5 U	5 UJ
Hexavalent Chromium	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/L	**937**	**736** J	**2.51**	**3840** J	**5760** J	**1800** J	**10100** J
Lead	ug/L	4.47 U	**0.8**	**26.9**	**1.9**	**3.5**	**1.7**	**8.9**
Magnesium	ug/L	**7780**	**6070**	**14500**	**149000**	**19700**	**13600**	**17700**
Manganese	ug/L	**28.8**	**33.9**	**13.3**	**407**	**5820**	**897**	**1930**
Mercury	ug/L	0.1 U	0.2 U	2.43 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	ug/L	32.1 U	15 U	34.3 U	15 U	15 U	15 U	15 U
Potassium	ug/L	1240 U	**343**	**1.02**	**6470**	**1900**	**2360**	**3420**
Selenium	ug/L	2.53 U	2.2 U	3.02 U	2.2 U	2.2 U	2.2 U	2.2 U
Silver	ug/L	10 U	0.1 U	4.6 U	0.1 U	0.1 U	0.1 U	0.1 U
Sodium	ug/L	**16200**	**11600**	**3540**	**64700**	**18300**	**21100**	**12400**
Thallium	ug/L	2.71 U	0.1 U	81.4 X	0.1 U	**0.3**	0.1 U	**0.3**
Vanadium	ug/L	27.6 U	10 U	11 U	10 U	10 U	10 U	10 U
Zinc	ug/L	18 U	30 U	**908**	30 U	**52.2**	**40.2**	**49**
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	N/A	123 U	N/A	10 U	24 U	10 U	**693**
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	N/A	**18.5**	N/A	**78.9**	**11.3**	**38.8**	**73**

Table 4-4. Background Groundwater Analytical Results
Fort McClellan, Alabama

Site ID		OWH-G02	OWH-G02	OWH-G02	RL-G01	RL-G01	RL-G01	RL-G01
Field Sample Number		SAIC01	SAIC02	SAIC01X	SAIC01	SAIC02	SAIC01X	SAIC03
Site Type		WELL	WELL	WELL	WELL	WELL	WELL	WELL
Collection Date		2/8/95	4/30/95	10/1/97	2/6/95	4/25/95	10/1/97	4/25/95
Depth (ft)		81.81	91.83	62	40.81	29.25	20	29.25
ANIONS	Units							
Bromide	ug/L	N/A	N/A	200 U	N/A	N/A	200 U	N/A
Chloride	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoride	ug/L	N/A	N/A	200 U	N/A	N/A	200 U	N/A
Sulfate	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CARBONATES								
Alkalinity-phenolphthalein	ug/L	N/A	N/A	5000 U	N/A	N/A	5000 U	N/A
Bicarbonate	ug/L	N/A	N/A	82000 U	N/A	N/A	31000 U	N/A
Carbonate	ug/L	N/A	N/A	5000 U	N/A	N/A	5000 U	N/A
Total Alkalinity	ug/L	N/A	N/A	82000 U	N/A	N/A	31000 U	N/A
METALS								
Aluminum	ug/L	**418**	**9600**	**156** J	**2940**	N/A	**407** J	N/A
Antimony	ug/L	5 U	5 U	0.6 U	5 U	N/A	0.6 U	N/A
Arsenic	ug/L	2.35 U	**4.16**	**2.6**	2.35 U	2.35 U	**2.2**	2.35 U
Barium	ug/L	**14.6**	**54.4**	**128**	**65.1**	N/A	**174**	N/A
Beryllium	ug/L	1.12 U	**1.17**	0.2 U	1.12 U	N/A	0.2 U	N/A
Cadmium	ug/L	5 U	2 U	0.1 U	5 U	2 U	0.1 U	2 U
Calcium	ug/L	**5850**	**17700**	22200 U	**9840**	N/A	**39900**	N/A
Chromium	ug/L	16.8 U	16.8 U	10 U	16.8 U	N/A	10 U	N/A
Cobalt	ug/L	25 U	25 U	20 U	25 U	N/A	20 U	N/A
Copper	ug/L	18.8 U	18.8 U	5 U	18.8 U	N/A	5 U	N/A
Cyanide	ug/L	N/A	N/A	5 UJ	N/A	N/A	5 UJ	N/A
Hexavalent Chromium	ug/L	N/A	N/A	20 U	N/A	N/A	20 U	N/A
Iron	ug/L	**814**	**7620**	**128** J	**10400**	N/A	**149** J	N/A
Lead	ug/L	4.47 U	**12.4**	0.6 U	**9.96**	4.47 U	**0.6**	4.47 U
Magnesium	ug/L	**2690**	**6230**	4120 U	**481**	N/A	281 U	N/A
Manganese	ug/L	**225**	**464**	**77.3**	**320**	N/A	**23.4**	N/A
Mercury	ug/L	0.1 U	0.1 U	0.2 U	0.1 U	0.1 U	0.2 U	0.1 U
Nickel	ug/L	32.1 U	32.1 U	15 U	32.1 U	N/A	15 U	N/A
Potassium	ug/L	**5930**	**4870**	**4260**	**8140**	N/A	**2920**	N/A
Selenium	ug/L	2.53 U	2.53 U	2.2 U	2.53 U	2.53 U	2.2 U	2.53 U
Silver	ug/L	10 U	10 U	0.1 U	10 U	N/A	0.1 U	N/A
Sodium	ug/L	**29600**	**43700**	**14400**	**3980**	N/A	**3540**	N/A
Thallium	ug/L	**2.51**	10 U	0.1 U	2.44 U	10 U	0.1 U	10 U
Vanadium	ug/L	27.6 U	27.6 U	10 U	27.6 U	N/A	10 U	N/A
Zinc	ug/L	**27.7**	**56.3**	30 U	**36.6**	N/A	30 U	N/A
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	N/A	N/A	17 U	N/A	N/A	205 U	N/A
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	N/A	N/A	**13**	N/A	N/A	**46.5**	N/A

Table 4-4. Background Groundwater Analytical Results
Fort McClellan, Alabama

Site ID		T24A-G03	T24A-G03	T24A-G03	T24A-G03	WILLIAMS	WILLIAMS
Field Sample Number		SAIC01	SAIC03	SAIC01X	SAIC01XD	SAIC02	SAIC01X
Site Type		WELL	WELL	WELL	WELL	WELL	WELL
Collection Date		10/23/94	2/1/95	10/2/97	10/2/97	3/31/96	10/3/97
Depth (ft)		18.5	12.8	14.2	14.2	0	63.66
ANIONS	Units						
Bromide	ug/L	N/A	N/A	200 U	200 U	N/A	200 U
Chloride	ug/L	N/A	N/A	**1270**	**1250**	N/A	N/A
Fluoride	ug/L	N/A	N/A	200 U	200 U	N/A	200 U
Sulfate	ug/L	N/A	N/A	**6520**	**6640**	N/A	N/A
CARBONATES							
Alkalinity-phenolphthalein	ug/L	N/A	N/A	5000 U	5000 U	N/A	5000 U
Bicarbonate	ug/L	N/A	N/A	**25000**	**25000**	N/A	**48000**
Carbonate	ug/L	N/A	N/A	5000 U	5000 U	N/A	5000 U
Total Alkalinity	ug/L	N/A	N/A	**25000**	**25000**	N/A	**48000**
METALS							
Aluminum	ug/L	**2080**	**1220**	**58.7** J	50 U	**1340**	**83.3** J
Antimony	ug/L	10 U	5 U	0.6 U	0.6 U	3.03 U	0.6 U
Arsenic	ug/L	2.35 U	2.35 U	1.1 U	1.1 U	2.54 U	1.1 U
Barium	ug/L	**68**	**40.9**	**15.1**	**8.4**	**18.4**	**20.9**
Beryllium	ug/L	1.12 U	1.12 U	0.2 U	0.2 U	5 U	0.2 U
Cadmium	ug/L	5 U	5 U	**0.4**	**0.6**	4.01 U	**0.2**
Calcium	ug/L	**776**	**822**	**1750**	**1330**	**7650**	**10200**
Chromium	ug/L	16.8 U	16.8 U	10 U	10 U	6.02 U	10 U
Cobalt	ug/L	25 U	25 U	20 U	20 U	25 U	20 U
Copper	ug/L	18.8 U	18.8 U	5 U	5 U	**21.3**	**8.1**
Cyanide	ug/L	N/A	N/A	5 U	5 U	N/A	5 U
Hexavalent Chromium	ug/L	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/L	**10600**	**10200**	**5040** J	**4330** J	**14700**	**7720** J
Lead	ug/L	4.47 U	4.47 U	0.6 U	0.6 U	**2.06**	**5.3**
Magnesium	ug/L	**7200**	**7190**	**5220**	**5170**	**3510**	**4720**
Manganese	ug/L	**762**	**771**	**470**	**232**	**291**	**165**
Mercury	ug/L	0.1 U	0.1 U	0.2 U	0.2 U	0.243 U	0.2 U
Nickel	ug/L	32.1 U	32.1 U	15 U	15 U	34.3 U	15 U
Potassium	ug/L	1240 U	1240 U	**1110**	**1110**	**1440**	**1050**
Selenium	ug/L	2.53 U	2.53 U	2.2 U	2.2 U	3.02 U	2.2 U
Silver	ug/L	10 U	10 U	0.1 U	0.1 U	4.6 U	**0.4**
Sodium	ug/L	**1150**	**1280**	**1160**	**1140**	**555**	**659**
Thallium	ug/L	2.44 U	2.44 U	0.1 U	0.1 U	81.4 X	0.1 U
Vanadium	ug/L	27.6 U	27.6 U	10 U	10 U	11 U	10 U
Zinc	ug/L	**21.9**	**22.5**	30 U	30 U	**42**	30 U
NITRATE, NITRITE							
Nitrate,Nitrite	ug/L	N/A	N/A	35 U	36 U	N/A	74 U
TOTAL PHOSPHOROUS							
Total Phosphorous	ug/L	N/A	N/A	10 U	10 U	N/A	**10**

Table 4-5. Background Surface Water Analytical Results
Fort McClellan, Alabama

Site ID		BG-W01	BG-W01	BG-W02	BG-W03	BG-W03	BG-W04	BG-W05
Field Sample Number		SAIC01	SAIC01D	SAIC01	SAIC01	SAIC01D	SAIC01	SAIC01
Site Type		CREK	CREK	CREK	CREK	CREK	CREK	CREK
Collection Date		8/3/97	8/3/97	8/4/97	7/23/97	7/23/97	7/18/97	7/18/97
Depth (ft)		0	0	0	0	0	0	0
ANIONS	Units							
Bromide	ug/L	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Chloride	ug/L	**1030**	**1030**	**1180**	**1200**	**1190**	**2030**	**1450**
Fluoride	ug/L	100 U	100 U	100 U	200 U	200 U	200 U	200 U
Sulfate	ug/L	**1960**	**1970**	**1470**	**4140**	**4200**	**1440**	**8100**
CARBONATES								
Alkalinity-phenolphthalein	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Bicarbonate	ug/L	5000 U	5000 U	5000 U	**24000**	**27000**	**32000**	**160000**
Carbonate	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Total Alkalinity	ug/L	5000 U	5000 U	5000 U	**24000**	**27000**	**32000**	**160000**
METALS								
Aluminum	ug/L	**306**	**703**	**9490**	**90.2** J	**118**	**13500**	**960**
Antimony	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Arsenic	ug/L	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	**3.2**	1.1 U
Barium	ug/L	**18.2**	**21.1**	**42**	**15.3**	**14.4**	**200**	**88.7**
Beryllium	ug/L	0.2 U	0.2 U	**0.4**	0.2 U	0.2 U	**3.2**	0.2 U
Cadmium	ug/L	0.2 U	0.2 U	**0.4**	0.2 U	0.2 U	**0.5**	0.2 U
Calcium	ug/L	**258**	**281**	**534**	**5080**	**5160**	**12000** J	**64100** J
Chromium	ug/L	10 U	10 U	10 U	10 U	10 U	**117** X	10 U
Cobalt	ug/L	20 U	20 U	20 U	20 U	20 U	**26.6** X	20 U
Copper	ug/L	5 U	5 U	**10**	5 U	5 U	**33.3** X	5 U
Cyanide	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexavalent Chromium	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	20 U
Iron	ug/L	**479**	**959**	**27400**	**320**	**380**	**232000**	**1840**
Lead	ug/L	0.6 U	0.6 U	**10**	**1**	**1**	**19.4**	**7.9**
Magnesium	ug/L	**237**	**266**	**999**	**2590**	**2580**	**4570**	**6030**
Manganese	ug/L	**16.8**	**45**	**251**	**11.4**	**14**	**6060**	**224**
Mercury	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	ug/L	15 U	15 U	15 U	15 U	15 U	**70.1**	15 U
Potassium	ug/L	**1190**	**1220**	**1930**	**1040**	**753**	**1710**	**880**
Selenium	ug/L	5 UJ	5 UJ	5 UJ	5 U	5 U	5 U	5 U
Silver	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Sodium	ug/L	**998**	**754**	**873**	**840**	**744**	**1060**	**1280**
Thallium	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.4** X	0.1 U
Vanadium	ug/L	10 U	10 U	**21.1**	10 U	10 U	**35.6**	10 U
Zinc	ug/L	30 U	30 U	30 U	30 U	30 U	**8390** X	30 U
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	**12**	**12**	10 U	**59**	**74**	**24**	**39**
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	10 U	**46**	**142**	10 UJ	10 UJ	**655** J	**11** J

Table 4-5. Background Surface Water Analytical Results
Fort McClellan, Alabama

Site ID		BG-W06	BG-W07	BG-W08	BG-W09	BG-W10	BG-W11	BG-W12
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		CREK	CREK	CREK	CREK	CREK	LAKE	CREK
Collection Date		7/18/97	7/19/97	8/3/97	7/17/97	7/19/97	7/20/97	7/19/97
Depth (ft)		0	0	0	0	0	0	0
ANIONS	Units							
Bromide	ug/L	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Chloride	ug/L	**1160**	**2800**	**1170**	**1190**	**1500**	**1000**	**1310**
Fluoride	ug/L	200 U	**579**	100 U	200 U	200 U	200 U	200 U
Sulfate	ug/L	**2110**	**5260**	**1800**	**2110**	**3690**	**3050**	**3490**
CARBONATES								
Alkalinity-phenolphthalein	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Bicarbonate	ug/L	**10000**	**96000**	5000 U	5000 U	5000 U	5000 U	**164000**
Carbonate	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Total Alkalinity	ug/L	**10000**	**96000**	5000 U	5000 U	5000 U	5000 U	**164000**
METALS								
Aluminum	ug/L	**117**	**173** J	**225**	**187**	50 U	**74.9** J	50 U
Antimony	ug/L	**2.3** X	1 U	1 U	1 U	1 U	1 U	1 U
Arsenic	ug/L	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Barium	ug/L	**16.8**	**53.4**	**24**	**23.6**	**23.8**	**25.2**	**10.6**
Beryllium	ug/L	0.2 U	0.2 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Calcium	ug/L	**1460** J	**21300**	**294**	**466** J	**374**	**894**	**37800**
Chromium	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cobalt	ug/L	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Copper	ug/L	**50.6**	5 U	5 U	5 U	5 U	5 U	5 U
Cyanide	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexavalent Chromium	ug/L	20 U	N/A	N/A	N/A	N/A	20 U	N/A
Iron	ug/L	**575**	**215**	**375**	**270**	45 U	**164**	45 U
Lead	ug/L	**47.3**	0.6 U	**0.7**	0.6 U	0.6 U	0.6 U	0.6 U
Magnesium	ug/L	**790**	**8510**	**352**	**363**	**532**	**615**	**4300**
Manganese	ug/L	**15.2**	**17.3**	**147**	**25.8**	**5.5**	**11**	**16.5**
Mercury	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	ug/L	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Potassium	ug/L	**1510**	**2060**	**474**	**569**	**2420**	**330**	**533**
Selenium	ug/L	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U
Silver	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Sodium	ug/L	**1020**	**1630**	**979**	**847**	**1160**	**787**	**878**
Thallium	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Vanadium	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Zinc	ug/L	30 U	30 U	30 U	30 U	30 U	30 U	30 U
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	10 U	**12**	10 U	10 U	**55**	10 U	**51**
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	10 UJ	10 UJ	**42**	10 UJ	10 UJ	10 UJ	10 J

Table 4-5. Background Surface Water Analytical Results
Fort McClellan, Alabama

Site ID		BG-W13	BG-W14	BG-W15	BG-W15	BG-W16	BG-W17	BG-W18
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01D	SAIC01	SAIC01	SAIC01
Site Type		CREK	CREK	CREK	CREK	CREK	CREK	CREK
Collection Date		7/23/97	8/13/97	7/18/97	7/18/97	7/17/97	7/18/97	8/3/97
Depth (ft)		0	0	0	0	0	0	0
ANIONS	Units							
Bromide	ug/L	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Chloride	ug/L	**1310**	**702**	**1240**	**1270**	**1630**	**10100**	**916**
Fluoride	ug/L	200 U	100 U	200 U	200 U	200 U	**415**	100 U
Sulfate	ug/L	**4900**	**3910**	**3160**	**3210**	**1900**	**62400**	**2130**
CARBONATES								
Alkalinity-phenolphthalein	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Bicarbonate	ug/L	**19000**	5000 U	**10000**	**6000**	**126000**	**128000**	5000 U
Carbonate	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Total Alkalinity	ug/L	**19000**	5000 U	**10000**	**6000**	**126000**	**128000**	5000 U
METALS								
Aluminum	ug/L	**1490** J	**9930**	**339**	**480**	50 U	**707**	**589**
Antimony	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Arsenic	ug/L	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Barium	ug/L	**15**	**45.9**	**24.7**	**27.4**	**23**	**72.4**	**56.7**
Beryllium	ug/L	0.2 U	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Calcium	ug/L	**6420**	**2980**	**414** J	**410** J	**28100** J	**20600** J	**534**
Chromium	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cobalt	ug/L	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Copper	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cyanide	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexavalent Chromium	ug/L	N/A	N/A	20 U	20 U	N/A	20 U	N/A
Iron	ug/L	**2370**	**10800**	**420**	**490**	**169**	**1390**	**795**
Lead	ug/L	**6.1**	**3.7**	**8.3**	**11.2**	0.6 U	**17.1**	**1.4**
Magnesium	ug/L	**2130**	**1120**	**597**	**632**	**15900**	**24400**	**443**
Manganese	ug/L	**74.2**	**118**	**30.6**	**36**	**88**	**524**	**119**
Mercury	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	ug/L	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Potassium	ug/L	**1530**	**2300**	**2040**	**2060**	**756**	**1210**	**2090**
Selenium	ug/L	5 U	5 UJ	5 U	5 U	5 U	5 U	5 UJ
Silver	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Sodium	ug/L	**1020**	**296**	**1210**	**1190**	**1110**	**15200**	**1240**
Thallium	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Vanadium	ug/L	10 U	**18**	10 U	10 U	10 U	10 U	10 U
Zinc	ug/L	30 U	30 U	30 U	30 U	30 U	30 U	30 U
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	**214**	**44**	**67**	**68**	**14**	**37**	**18**
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	10 UJ	**190**	10 UJ	12 UJ	10 UJ	10 UJ	10 U

Table 4-5. Background Surface Water Analytical Results
Fort McClellan, Alabama

Site ID		BG-W19	BG-W20	BG-W21	BG-W22	BG-W22	BG-W23	BG-W24
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01D	SAIC01	SAIC01
Site Type		CREK	CREK	CREK	CREK	CREK	CREK	CREK
Collection Date		7/20/97	8/3/97	7/17/97	8/20/97	8/20/97	7/19/97	8/5/97
Depth (ft)		0	0	0	0	0	0	0
ANIONS	Units							
Bromide	ug/L	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Chloride	ug/L	**1290**	**1160**	**1170**	**1080**	**1080**	**1080**	**1170**
Fluoride	ug/L	200 U	100 U	200 U	100 U	100 U	200 U	100 U
Sulfate	ug/L	**1810**	**2360**	**1550**	**2060**	**2070**	**1220**	**1620**
CARBONATES								
Alkalinity-phenolphthalein	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Bicarbonate	ug/L	**7000**	**6000**	5000 U	5000 U	5000 U	5000 U	5000 U
Carbonate	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Total Alkalinity	ug/L	**7000**	**6000**	5000 U	5000 U	5000 U	5000 U	5000 U
METALS								
Aluminum	ug/L	**81.4** J	**105**	**96.2**	**1200**	**349**	**74.9** J	**65.1**
Antimony	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Arsenic	ug/L	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Barium	ug/L	**16.7**	**14.8**	**17.2**	**47.9**	**35.5**	**12.5**	**13.4**
Beryllium	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	ug/L	0.2 U	**0.2**	0.2 U	**1.5**	0.2 U	0.2 U	0.2 U
Calcium	ug/L	**210**	**179**	**239** J	**624**	**475**	**215**	**181**
Chromium	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cobalt	ug/L	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Copper	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cyanide	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexavalent Chromium	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/L	**147**	**126**	**130**	**1120**	**356**	**130**	**74.3**
Lead	ug/L	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Magnesium	ug/L	**233**	**187**	**200**	**443**	**392**	**171**	**200**
Manganese	ug/L	5 U	**6.7**	**7.2**	**87.3**	**24.2**	**6.4**	**13.7**
Mercury	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	ug/L	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Potassium	ug/L	**1800**	**1190**	**1200**	**601**	**534**	**1190**	**1020**
Selenium	ug/L	5 U	5 UJ	5 U	5 U	5 U	5 U	5 UJ
Silver	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Sodium	ug/L	**936**	**1020**	**918**	**943**	**857**	**781**	**799**
Thallium	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Vanadium	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Zinc	ug/L	30 U	30 U	30 U	30 U	30 U	30 U	30 U
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	**16**	10 U	**33**	10 U	10 U	**18**	**11**
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	10 UJ	**21**	10 UJ	**12**	**13**	10 UJ	10 U

Table 4-5. Background Surface Water Analytical Results
Fort McClellan, Alabama

Site ID		BG-W25	BGP-W01	BGP-W02	BGP-W03	BGP-W04	BGP-W05	BGP-W06
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		LAKE	CREK	CREK	CREK	CREK	CREK	CREK
Collection Date		7/17/97	7/21/97	7/21/97	8/13/97	7/20/97	7/20/97	8/1/97
Depth (ft)		0	0	0	0	0	0	0
ANIONS	Units							
Bromide	ug/L	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Chloride	ug/L	**7740**	**7120**	**1740**	**467**	**6340**	**1280**	**595**
Fluoride	ug/L	**202**	**213**	200 U	100 U	**203**	200 U	**128**
Sulfate	ug/L	**12400**	**6170**	**1440**	**4790**	**5980**	**2250**	**9950**
CARBONATES								
Alkalinity-phenolphthalein	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Bicarbonate	ug/L	5000 U	**148000**	**110000**	**7000**	**160000**	**36000**	**15000**
Carbonate	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Total Alkalinity	ug/L	5000 U	**148000**	**110000**	**7000**	**160000**	**36000**	**15000**
METALS								
Aluminum	ug/L	**13700**	**241** J	**675** J	**47800**	**320** J	**2280** J	**483** J
Antimony	ug/L	1 U	1 U	1 U	**1.9** X	1 U	1 U	1 U
Arsenic	ug/L	1.1 U	1.1 U	**1.4**	**2**	1.1 U	1.1 U	1.1 U
Barium	ug/L	**40.8**	**35**	**59.9**	**115**	**32.7**	**19.8**	**22.5**
Beryllium	ug/L	**0.3**	0.2 U	0.2 U	**0.3**	0.2 U	0.2 U	0.2 U
Cadmium	ug/L	0.2 U	0.2 U	0.2 U	**0.4**	0.2 U	0.2 U	0.2 U
Calcium	ug/L	**4430** J	**30800**	**23000**	**3570**	**31900**	**7200**	**6810**
Chromium	ug/L	**14.4**	10 U	10 U	**86.1** X	10 U	10 U	10 U
Cobalt	ug/L	20 U	20 U	20 U	**25.2** X	20 U	20 U	20 U
Copper	ug/L	**9.5**	5 U	5 U	**71.6**	5 U	5 U	5 U
Cyanide	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexavalent Chromium	ug/L	N/A	20 U	N/A	N/A	20 U	N/A	N/A
Iron	ug/L	**11500**	**340**	**1420**	**118000**	**455**	**3080**	**730**
Lead	ug/L	**3.4**	**0.9**	**2.8**	**37.9**	**1**	**0.9**	**3.1**
Magnesium	ug/L	**4680**	**13800**	**12800**	**3110**	**14400**	**3780**	**1710**
Manganese	ug/L	**35.2**	**56.3**	**2470**	**1530**	**94.6**	**141**	**74.8**
Mercury	ug/L	0.2 U	0.2 U	0.2 U	**0.22** X	0.2 U	0.2 U	0.2 U
Nickel	ug/L	15 U	15 U	15 U	**40**	15 U	15 U	15 U
Potassium	ug/L	**7120**	**1950**	**398**	**3320**	**1820**	**1130**	**364**
Selenium	ug/L	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U
Silver	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Sodium	ug/L	**4110**	**6100**	**1300**	**358**	**5580**	**818**	**1050**
Thallium	ug/L	0.1 U	0.1 U	0.1 U	**0.2** X	0.1 U	0.1 U	0.1 U
Vanadium	ug/L	**22.5**	10 U	10 U	**203** X	10 U	10 U	10 U
Zinc	ug/L	30 U	30 U	30 U	**182**	30 U	30 U	30 U
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	**31**	**838**	**29**	**725**	**611**	**18**	**32**
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	**56** J	**32** J	**39** J	**133**	**38** J	10 UJ	**30**

Table 4-5. Background Surface Water Analytical Results
Fort McClellan, Alabama

Site ID		BGP-W07	BGP-W07	BGP-W08	BGP-W09	BGP-W10	BGP-W11	BGP-W12
Field Sample Number		SAIC01	SAIC01D	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		CREK	CREK	CREK	CREK	CREK	CREK	CREK
Collection Date		7/20/97	7/20/97	7/20/97	7/20/97	8/2/97	7/21/97	7/21/97
Depth (ft)		0	0	0	0	0	0	0
ANIONS	Units							
Bromide	ug/L	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Chloride	ug/L	**1250**	**1300**	**1580**	**751**	**1580**	**1400**	**2040**
Fluoride	ug/L	200 U	200 U	200 U	200 U	100 U	200 U	200 U
Sulfate	ug/L	**2660**	**2640**	**2700**	**2420**	**4300**	**1190**	**1820**
CARBONATES								
Alkalinity-phenolphthalein	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Bicarbonate	ug/L	**24000**	**42000**	**70000**	**14000**	**106000**	**126000**	**26000**
Carbonate	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Total Alkalinity	ug/L	**24000**	**42000**	**70000**	**14000**	**106000**	**126000**	**26000**
METALS								
Aluminum	ug/L	**65.2** J	**201**	50 U	50 U	**73.4**	**398** J	**3470** J
Antimony	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Arsenic	ug/L	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Barium	ug/L	**22.4**	**25.5**	**31.1**	**17.7**	**40.8**	**11.1**	**40.4**
Beryllium	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Calcium	ug/L	**10500**	**11700** J	**16900** J	**2950** J	**37700**	**26400**	**5170**
Chromium	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cobalt	ug/L	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Copper	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cyanide	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexavalent Chromium	ug/L	N/A	N/A	20 U	N/A	N/A	N/A	N/A
Iron	ug/L	**195**	**336**	**546**	**502**	**239**	**423**	**8700**
Lead	ug/L	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	**0.8**	**2.5**
Magnesium	ug/L	**5660**	**6150**	**7960**	**1480**	**1950**	**15400**	**3740**
Manganese	ug/L	**62.5**	**81**	**82.8**	**88.4**	**54.5**	**52**	**1820**
Mercury	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	ug/L	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Potassium	ug/L	**542**	**561**	**781**	**391**	**1740**	**357**	**1360**
Selenium	ug/L	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U
Silver	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Sodium	ug/L	**1030**	**1130**	**1280**	**632**	**2070**	**1020**	**2030**
Thallium	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Vanadium	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Zinc	ug/L	30 U	30 U	30 U	30 U	30 U	30 U	30 U
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	**14**	**12**	**65**	10 U	10 U	**145**	**47**
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	10 UJ	10 UJ	10 UJ	10 UJ	10 U	**11** J	14 UJ

Table 4-5. Background Surface Water Analytical Results
Fort McClellan, Alabama

Site ID		BGP-W13	BGP-W14	BGP-W15	BGP-W16	BGP-W17	BGP-W18	BGP-W19
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		CREK	CREK	CREK	POND	CREK	CREK	CREK
Collection Date		7/16/97	8/2/97	7/16/97	7/16/97	7/20/97	7/20/97	7/29/97
Depth (ft)		0	0	0	0	0	0	0
ANIONS	Units							
Bromide	ug/L	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Chloride	ug/L	**1660**	**1600**	**1320**	**1270**	**1160**	**1410**	**1410**
Fluoride	ug/L	200 U	100 U	200 U	200 U	200 U	200 U	200 U
Sulfate	ug/L	**7580**	**1630**	**2240**	**1060**	**1550**	**1790**	**1230**
CARBONATES								
Alkalinity-phenolphthalein	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Bicarbonate	ug/L	**22000**	**92000**	**7000**	5000 U	**124000**	**116000**	**24000**
Carbonate	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Total Alkalinity	ug/L	**22000**	**92000**	**7000**	5000 U	**124000**	**116000**	**24000**
METALS								
Aluminum	ug/L	**377**	**2510**	**632**	**1960**	**477**	**1870**	**40700**
Antimony	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	**1.8** X
Arsenic	ug/L	1.1 U	1.1 U	1.1 U	**3.4**	1.1 U	**2.9**	**10.5**
Barium	ug/L	**20**	**19.7**	**29.7**	**108**	**13.1**	**47.5**	**167**
Beryllium	ug/L	0.2 U	0.2 U	0.2 U	**0.2**	0.2 U	**0.2**	**1.1**
Cadmium	ug/L	0.2 U	**0.2**	0.2 U	0.2 U	**0.2**	**1.5**	**0.8**
Calcium	ug/L	**5330** J	**25500**	**916** J	**1740** J	**21400** J	**26000** J	**7500** J
Chromium	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	**73.7** X
Cobalt	ug/L	20 U	20 U	20 U	20 U	20 U	20 U	**57.6** X
Copper	ug/L	5 U	5 U	5 U	**7.1**	**16.4**	**60.1**	**59.7** X
Cyanide	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexavalent Chromium	ug/L	N/A	N/A	N/A	N/A	20 U	20 U	N/A
Iron	ug/L	**1030**	**4740**	**1130**	**3350**	**1480**	**4960**	**180000**
Lead	ug/L	0.6 U	**4**	**0.9**	**8.4**	**2**	**8.4**	**22.1**
Magnesium	ug/L	**3250**	**14300**	**507**	**415**	**12100**	**12300**	**3070**
Manganese	ug/L	**55.5**	**82.8**	**211**	**129**	**68.1**	**718**	**1410**
Mercury	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	ug/L	15 U	15 U	15 U	15 U	15 U	15 U	**66**
Potassium	ug/L	**788**	**613**	**409**	**389**	**350**	**841**	**6270**
Selenium	ug/L	5 U	5 UJ	5 U	5 U	5 U	5 U	**7.8** X
Silver	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.2** X
Sodium	ug/L	**2410**	**1490**	**833**	**836**	**1020**	**1080**	**1580** X
Thallium	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	**0.2** X
Vanadium	ug/L	10 U	**12.6**	10 U	10 U	10 U	10 U	**126** X
Zinc	ug/L	30 U	30 U	30 U	30 U	30 U	**45.6**	**139**
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	**77**	**310**	**27**	10 U	**83**	**55**	10 U
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	10 U	**43**	10 J	**53** J	**12** J	10 J	**312** J

Table 4-5. Background Surface Water Analytical Results
Fort McClellan, Alabama

Site ID		BGP-W20	BGP-W20	BGP-W21	BGP-W22	BGP-W23	BGP-W24	BGP-W25
Field Sample Number		SAIC01	SAIC01D	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		CREK	CREK	CREK	CREK	CREK	CREK	CREK
Collection Date		7/16/97	7/16/97	8/2/97	7/21/97	7/21/97	7/20/97	7/16/97
Depth (ft)		0	0	0	0	0	0	0
ANIONS	Units							
Bromide	ug/L	200 U	200 U	200 U	200 U	200 U	200 U	200 U
Chloride	ug/L	**2440**	**2450**	**2340**	**3080**	**2900**	**4430**	**1720**
Fluoride	ug/L	200 U	200 U	100 U	200 U	200 U	200 U	200 U
Sulfate	ug/L	**3010**	**2990**	**3720**	**3170**	**4040**	**4800**	**2950**
CARBONATES								
Alkalinity-phenolphthalein	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Bicarbonate	ug/L	**92000**	**132000**	**102000**	**120000**	**172000**	**112000**	**124000**
Carbonate	ug/L	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
Total Alkalinity	ug/L	**92000**	**132000**	**102000**	**120000**	**172000**	**112000**	**124000**
METALS								
Aluminum	ug/L	**115**	**103**	**339**	**3470** J	**229** J	**115**	**134**
Antimony	ug/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Arsenic	ug/L	1.1 U	1.1 U	1.1 U	1.1 U	**1.6**	1.1 U	1.1 U
Barium	ug/L	**22.6**	**23.2**	**21**	**42.8**	**41.8**	**29.7**	**34.7**
Beryllium	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	ug/L	**0.2**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Calcium	ug/L	**28100** J	**27800** J	**23500**	**26000**	**32000**	**26200**	**39100**
Chromium	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Cobalt	ug/L	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Copper	ug/L	5 U	5 U	5 U	**7.2**	5 U	5 U	5 U
Cyanide	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexavalent Chromium	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/L	**313**	**274**	**514**	**4680**	**623**	**361**	**401**
Lead	ug/L	0.6 U	**0.6**	**0.6**	**11.9**	**0.7**	0.6 U	0.6 U
Magnesium	ug/L	**13100**	**13000**	**12100**	**13500**	**17500**	**12000**	**2730**
Manganese	ug/L	**38**	**37.7**	**31.7**	**228**	**315**	**91.1**	**39.3**
Mercury	ug/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	ug/L	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Potassium	ug/L	**761**	**748**	**984**	**1640**	**1150**	**1210**	**362**
Selenium	ug/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Silver	ug/L	0.1 U	0.1 U	0.1 U	**0.4** X	0.1 U	0.1 U	0.1 U
Sodium	ug/L	**2090**	**2020**	**2280**	**2610**	**2730**	**3940**	**1790**
Thallium	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Vanadium	ug/L	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Zinc	ug/L	30 U	30 U	30 U	30 U	30 U	30 U	30 U
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	**264**	**267**	**392**	**300**	**172**	**446**	**43**
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	**34** J	**19** J	**39**	**28** J	10 U	10 UJ	10 UJ

Table 4-5. Background Surface Water Analytical Results
Fort McClellan, Alabama

Site ID		BK-W01	BK-W02	BK-W03	BK-W03	BK-W04	LF1-W01	LF1-W01
Field Sample Number		BK-W01	SAIC01	SAIC01	SAIC02D	SAIC01	SAIC01	SAIC02D
Site Type		CREK	CREK	LAKE	LAKE	CREK	CREK	CREK
Collection Date		4/13/92	6/23/94	6/20/94	6/20/94	6/20/94	6/8/94	6/8/94
Depth (ft)		0	0	0	0	0	0	0
ANIONS	Units							
Bromide	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chloride	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoride	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sulfate	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CARBONATES								
Alkalinity-phenolphthalein	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bicarbonate	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbonate	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Alkalinity	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
METALS								
Aluminum	ug/L	112 U	112 U	112 U	112 U	**134**	**5140**	**5080**
Antimony	ug/L	60 UX	10 U	10 U	10 U	10 U	10 U	10 U
Arsenic	ug/L	2.35 U	2.35 U	2.35 U	2.35 U	2.35 U	**5.41**	**4.78**
Barium	ug/L	**20.3**	**21**	**24.1**	**24.1**	**18.5**	**101**	**104**
Beryllium	ug/L	1.12 UX	1.12 UX	1.12 UX	1.12 UX	**1.13** X	1.12 UX	1.12 UX
Cadmium	ug/L	6.78 U	5 U	5 U	5 U	5 U	5 U	5 U
Calcium	ug/L	**292**	**389**	**27900**	**28100**	**485**	**9220**	**9190**
Chromium	ug/L	16.8 U	16.8 U	16.8 U	16.8 U	16.8 U	16.8 U	16.8 U
Cobalt	ug/L	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Copper	ug/L	N/A	18.8 UX	18.8 UX	18.8 UX	18.8 UX	18.8 UX	18.8 UX
Cyanide	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexavalent Chromium	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/L	77.5 U	**152**	**185**	**168**	**212**	**10300**	**10700**
Lead	ug/L	43.4 UX	4.47 U	4.47 U	4.47 U	4.47 U	**8.02**	**8.16**
Magnesium	ug/L	**338**	**377**	**15600**	**15500**	**444**	**3740**	**3720**
Manganese	ug/L	9.67 U	9.67 U	**130**	**98.1**	**11.9**	**162**	**147**
Mercury	ug/L	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nickel	ug/L	32.1 U	32.1 U	32.1 U	32.1 U	32.1 U	32.1 U	32.1 U
Potassium	ug/L	**1930**	**2190**	1240 U	1240 U	**1670**	1240 U	1240 U
Selenium	ug/L	2.53 U	2.53 U	2.53 U	2.53 U	2.53 U	2.53 U	2.53 U
Silver	ug/L	10 UX	10 UX	10 UX	10 UX	10 UX	10 UX	10 UX
Sodium	ug/L	**1060**	**1130**	**1170**	**1080**	**1090**	**1520**	**1490**
Thallium	ug/L	N/A	2 U	**4.18**	2 U	2 U	125 UX	125 UX
Vanadium	ug/L	27.6 U	27.6 U	27.6 U	27.6 U	27.6 U	27.6 U	27.6 U
Zinc	ug/L	18 U	18 U	18 U	18 U	18 U	**41**	**41.5**
NITRATE, NITRITE								
Nitrate,Nitrite	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL PHOSPHOROUS								
Total Phosphorous	ug/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 4-5. Background Surface Water Analytical Results
Fort McClellan, Alabama

Site ID		LF2-W01	T5-W02	SW-BK-001	SW-BK-002
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01
Site Type		CREK	CREK	CREK	CREK
Collection Date		6/19/94	6/8/94	2/1/95	2/1/95
Depth (ft)		0	0	0	0
ANIONS	Units				
Bromide	ug/L	N/A	N/A	N/A	N/A
Chloride	ug/L	N/A	N/A	N/A	N/A
Fluoride	ug/L	N/A	N/A	N/A	N/A
Sulfate	ug/L	N/A	N/A	N/A	N/A
CARBONATES					
Alkalinity-phenolphthalein	ug/L	N/A	N/A	N/A	N/A
Bicarbonate	ug/L	N/A	N/A	N/A	N/A
Carbonate	ug/L	N/A	N/A	N/A	N/A
Total Alkalinity	ug/L	N/A	N/A	N/A	N/A
METALS					
Aluminum	ug/L	**201**	**721**	141 U	**299**
Antimony	ug/L	10 U	10 U	3.03 U	3.03 U
Arsenic	ug/L	2.35 U	2.35 U	2.54 UX	2.54 UX
Barium	ug/L	**16.2**	**26.1**	**19.3**	**14.4**
Beryllium	ug/L	1.12 UX	1.12 UX	5 UX	5 UX
Cadmium	ug/L	5 U	5 U	4.01 U	4.01 U
Calcium	ug/L	**15300**	**5000**	**14000**	**11500**
Chromium	ug/L	16.8 U	16.8 U	6.02 U	6.02 U
Cobalt	ug/L	25 U	25 U	25 U	25 U
Copper	ug/L	18.8 UX	18.8 UX	8.09 U	8.09 U
Cyanide	ug/L	N/A	N/A	2.5 U	2.5 U
Hexavalent Chromium	ug/L	N/A	N/A	2.5 U	2.5 U
Iron	ug/L	**329**	**1130**	**124**	**343**
Lead	ug/L	4.47 U	4.47 U	1.26 U	1.26 U
Magnesium	ug/L	**8650**	**1330**	**5230**	**6370**
Manganese	ug/L	**23.4**	**161**	**60.9**	**21.9**
Mercury	ug/L	0.1 U	0.1 U	0.243 UX	0.243 U
Nickel	ug/L	32.1 U	32.1 U	34.3 U	34.3 U
Potassium	ug/L	1240 U	1240 U	**1240**	**645**
Selenium	ug/L	2.53 U	2.53 U	3.02 U	3.02 U
Silver	ug/L	10 UX	10 UX	4.6 U	4.6 U
Sodium	ug/L	**902**	**948**	**5210**	**2810**
Thallium	ug/L	2 U	125 UX	81.4 UX	81.4 UX
Vanadium	ug/L	27.6 U	27.6 U	11 U	11U
Zinc	ug/L	18 U	**27.3**	21.1 U	21.1 U
NITRATE, NITRITE					
Nitrate,Nitrite	ug/L	N/A	N/A	N/A	N/A
TOTAL PHOSPHOROUS					
Total Phosphorous	ug/L	N/A	N/A	N/A	N/A

Table 4-6. Background Sediment Analytical Results
Fort McClellan, Alabama

Site ID		BG-D01	BG-D02	BG-D02	BG-D03	BG-D03	BG-D04	BG-D05
Field Sample Number		SAIC01	SAIC01	SAIC01D	SAIC01	SAIC01D	SAIC01	SAIC01
Site Type		CREK	CREK	CREK	CREK	CREK	CREK	CREK
Collection Date		8/3/97	8/4/97	8/4/97	7/23/97	7/23/97	7/18/97	7/18/97
Depth (ft)		0	0	0	0	0	0	0
METALS	Units							
Aluminum	ug/g	1370	3470	2990	2650	2520	8910	3540
Antimony	ug/g	0.126 U	0.157 J	0.147 J	0.594	0.568	0.302 J	0.388 J
Arsenic	ug/g	1.36	2.32 J	2.13 J	2.95 J	2.64 J	6.66 J	2.92 J
Barium	ug/g	18.5	26.8	27.1	25.9	27	102	42.6
Beryllium	ug/g	0.167	0.295	0.285	0.275	0.361	2.69 X	0.492
Cadmium	ug/g	0.025 U	0.037	0.031	0.148 U	0.097 U	0.268	0.076
Calcium	ug/g	97.3	150	204	947	841	729	1020
Chromium	ug/g	3.37 J	5.25 J	4.54 J	7.39 J	8.11 J	37.7	11.3
Cobalt	ug/g	1.6	2.67	3.01	3.42	4.25	21.9	3.98
Copper	ug/g	1.43	4.97	3.82	9.38	8.8	8.33	7.13
Cyanide	ug/g	0.612 U	0.834 U	0.805 U	0.789 U	0.726 U	1.24 U	0.52 U
Hexavalent Chromium	ug/g	N/A	N/A	N/A	N/A	N/A	N/A	0.11 U
Iron	ug/g	5050	6560	5800	9930	9990	27200	13400
Lead	ug/g	2.66 J	6.54 J	5.96 J	47.6	38.8	25.1	38.9
Magnesium	ug/g	57.8	111	108	249	234	256	203
Manganese	ug/g	54.5 J	57 J	74 J	313	354	1270	432
Mercury	ug/g	0.041 U	0.059 U	0.059 U	0.061 U	0.053 U	0.137	0.063
Nickel	ug/g	2.52 U	3.14 U	2.94 U	3.26	2.89	15.4	8.72
Potassium	ug/g	249	260	201	273	192	273	229
Selenium	ug/g	0.63 U	0.786 U	0.736 U	0.688 U	0.612 U	1.16 U	0.431 U
Silver	ug/g	0.025 U	0.897	0.162	0.028 U	0.024 U	0.077	0.032
Sodium	ug/g	383	493	503	486	456	738	280
Thallium	ug/g	0.085	0.046	0.058	0.039	0.051	0.221	0.12
Vanadium	ug/g	5.96	12.9	14.8	13.9	13.8	42.5	16.8
Zinc	ug/g	6.3 U	9.91	8.13	21.7	21	36.6	13

NA - Not analyzed
U - Not detected
J - Estimated value
X - Value not included in calculation of mean

Table 4-6. Background Sediment Analytical Results
Fort McClellan, Alabama

Site ID		BG-D05	BG-D06	BG-D07	BG-D08	BG-D09	BG-D10	BG-D11
Field Sample Number		SAIC01D	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		CREK	CREK	CREK	CREK	CREK	CREK	LAKE
Collection Date		7/18/97	7/18/97	7/19/97	8/3/97	7/17/97	7/19/97	7/20/97
Depth (ft)		0	0	0	0	0	0	0
METALS	Units							
Aluminum	ug/g	**3570**	**1770**	**5100**	**4470**	**1330**	**3740**	**4820**
Antimony	ug/g	**0.381** J	**8.39** JX	**0.569** J	**0.51**	0.114 UJ	**0.149** J	**0.134** J
Arsenic	ug/g	**3.3** J	**1.53** J	**3.82**	**2.44**	**0.618** J	**2.82**	**3**
Barium	ug/g	**44.9**	**18.8**	**66.1**	**61.3**	**8.11**	**57.9**	**23.2**
Beryllium	ug/g	**0.513**	**0.238**	**0.911**	**1.08**	**0.128**	**0.687**	**0.225**
Cadmium	ug/g	**0.091**	**0.042**	**0.242**	**0.233**	0.023 U	**0.024**	**0.031**
Calcium	ug/g	**759**	**388**	**1190**	**133**	85.7 U	**168**	**262**
Chromium	ug/g	**9.32**	**3.49**	**9.98**	**8.69** J	**3.93**	**6.68**	**12.6**
Cobalt	ug/g	**4.17**	**1.87**	**8.27**	**9.13**	**0.513**	**5.81**	**0.4**
Copper	ug/g	**7.46**	**88.8** X	**19**	**17.5**	**1.98**	**7.39**	**5.57**
Cyanide	ug/g	0.524 U	0.614 U	0.726 U	0.783 U	0.623 U	0.578 U	0.832 U
Hexavalent Chromium	ug/g	0.11 U	0.12 U	N/A	N/A	N/A	N/A	0.14 U
Iron	ug/g	**13300**	**8290**	**19200**	**11100**	**2890**	**19200**	**17000**
Lead	ug/g	**36.6**	**1960** X	**21.4**	**66** J	**3.41**	**14.1** J	**5.32** J
Magnesium	ug/g	**195**	**226**	**1360**	**101**	**35.2**	**360**	**215**
Manganese	ug/g	**486**	**164**	**500**	**331** J	**8.66**	**209**	**17.4**
Mercury	ug/g	**0.064**	**0.047**	**0.103**	**0.277**	**0.064**	**0.056**	0.058 U
Nickel	ug/g	**9.44**	2.34 U	**14.6**	**8.67** J	2.29 U	5.25 U	2.48 U
Potassium	ug/g	**226**	**428**	**461**	**148**	**118**	**2300**	**1060**
Selenium	ug/g	0.421 U	0.585 U	0.55 U	0.605 U	0.571 U	0.515 U	0.619 U
Silver	ug/g	**0.031**	0.023 U	**0.03**	**0.293**	0.023 U	0.021 U	**0.027**
Sodium	ug/g	**279**	**353**	**414**	**425**	**322**	**319**	**415**
Thallium	ug/g	**0.086**	**0.026**	**0.094**	**0.203**	**0.026**	**0.028**	**0.035**
Vanadium	ug/g	**16.3**	**8.99**	**16.5**	**25.1**	**4.84**	**9.53**	**21.9**
Zinc	ug/g	**13.9**	**13.9**	**89.7**	**30.6**	5.71 U	**11.8**	**9.06**

NA - Not analyzed
U - Not detected
J - Estimated value
X - Value not included in calculation of mean

Table 4-6. Background Sediment Analytical Results
Fort McClellan, Alabama

Site ID		BG-D12	BG-D13	BG-D14	BG-D15	BG-D16	BG-D17	BG-D18
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		CREK	CREK	CREK	CREK	CREK	CREK	CREK
Collection Date		7/19/97	7/15/97	8/13/97	7/18/97	7/17/97	7/18/97	8/3/97
Depth (ft)		0	0	0	0	0	0	0
METALS	Units							
Aluminum	ug/g	1770	1570	3370	3960	3760	3000	3200
Antimony	ug/g	2.5 JX	0.118 UJ	0.121 U	0.335 J	0.168 J	638 JX	0.222
Arsenic	ug/g	1.7	1.34 J	1.98	2.07 J	1.69 J	194 JX	7.03
Barium	ug/g	21.9	5.37	27.7	51.1	45.3	36.5	28.6
Beryllium	ug/g	0.477	0.079	0.173	0.529	0.859	0.45	0.643
Cadmium	ug/g	0.07	0.033	0.03	0.02	0.053	0.064	0.024
Calcium	ug/g	605	157	399	138	901	490	91.9
Chromium	ug/g	3.63	2.82	6.09	6.19	16	7.21	14.8 J
Cobalt	ug/g	2.51	1.11	3.04	5.92	4.55	4.14	3.43
Copper	ug/g	8.33	1.23	3.34	9.98	75.7 X	10.6	4.61
Cyanide	ug/g	0.582 U	0.567 U	0.677 U	0.537 U	1 U	0.533 U	0.653 U
Hexavalent Chromium	ug/g	N/A	N/A	N/A	0.11 U	N/A	0.1 U	N/A
Iron	ug/g	5750	4680	6490	13000	10700	11400	27100
Lead	ug/g	110 J	13.7	7.2	71	13.3	39200 X	5.74 J
Magnesium	ug/g	96.8	80.7	143	239	257	647	100
Manganese	ug/g	225	41	221	380	394	293	177 J
Mercury	ug/g	0.07	0.042 U	0.033 U	0.066	0.122	0.067	0.044 U
Nickel	ug/g	3.55 U	2.36 U	2.42 U	5.07	4.73	3.85	2.12 U
Potassium	ug/g	159	118 U	154	619	172	223	1230
Selenium	ug/g	0.542 U	0.589 U	0.606 U	0.445 U	0.716 U	0.449 U	0.531 U
Silver	ug/g	0.022 U	0.024 U	0.024 U	0.018 U	0.072	1.05	0.021 U
Sodium	ug/g	350	339	373	271	443	314	281
Thallium	ug/g	0.036	0.012	0.024	0.058	0.131	0.061	0.05
Vanadium	ug/g	7.3	6.19	10.9	8.75	17	14.5	33
Zinc	ug/g	14.1	10	9.86	12.4	11.9	20	5.99

NA - Not analyzed
U - Not detected
J - Estimated value
X - Value not included in calculation of mean

Table 4-6. Background Sediment Analytical Results
Fort McClellan, Alabama

Site ID		BG-D19	BG-D20	BG-D21	BG-D22	BG-D22	BG-D23	BG-D24
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01D	SAIC01	SAIC01
Site Type		CREK	CREK	CREK	CREK	CREK	CREK	CREK
Collection Date		7/20/97	8/3/97	7/17/97	8/20/97	8/20/97	7/19/97	8/5/97
Depth (ft)		0	0	0	0	0	0	0
METALS	Units							
Aluminum	ug/g	**3060**	**4020**	**657**	**3380**	**2740**	**1620**	**2140**
Antimony	ug/g	**0.37** J	0.148 U	0.107 UJ	**0.509**	**0.306**	0.138 U	**0.198**
Arsenic	ug/g	**7.73**	**1.26**	**0.427** J	**6.46** J	**5.16** J	**2.02**	**4.15** J
Barium	ug/g	**32.4**	**79.2**	**7.56**	**54.8**	**142**	**52.2**	**27** J
Beryllium	ug/g	**0.929**	**0.558**	**0.069**	**0.83**	**0.663**	**0.357**	**0.655**
Cadmium	ug/g	**0.031**	**0.04**	0.021 U	**0.031** J	**0.072** J	0.028 U	0.058 U
Calcium	ug/g	**117**	**277**	80.3 U	98.8 U	60 U	**192**	**87.5**
Chromium	ug/g	**20.1**	**3.97** J	**3.12**	**24.5**	**21.1**	**6.49**	**9.41** J
Cobalt	ug/g	**4.27**	**3.51**	**0.63**	**10.5**	**12.2**	**2.13**	**0.744**
Copper	ug/g	**6.4**	**4.2**	**0.726**	**8.14**	**7.7**	**2.18**	**1.95**
Cyanide	ug/g	0.573 U	0.742 U	0.588 U	0.692 U	0.612 U	0.671 U	0.616 U
Hexavalent Chromium	ug/g	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/g	**46000**	**9390**	**3160**	**57500**	**46300**	**13500**	**10300**
Lead	ug/g	**8.83** J	**6.3** J	**1.71**	**9.61**	**18.6**	**3.2** J	**20.5**
Magnesium	ug/g	**115**	**221**	**29.9**	**87**	**63.5**	**93.1**	**90.5**
Manganese	ug/g	**181**	**132** J	**31.3**	**468**	**1580**	**127**	**93.9**
Mercury	ug/g	**0.059**	0.056 U	**0.051**	0.027 U	0.024 U	**0.07**	**0.067**
Nickel	ug/g	**3.05**	2.97 U	2.14 U	**8.09**	**6.21**	2.76 U	2.11 U
Potassium	ug/g	**1350**	**1530**	107 U	**486**	**252**	**371**	**306**
Selenium	ug/g	0.618 U	0.742 U	0.535 U	0.659 U	0.4 U	0.69 U	0.526 U
Silver	ug/g	**0.199**	**0.086**	0.021 U	**0.072**	**0.027**	0.028 U	**0.167**
Sodium	ug/g	**351**	**460**	**301**	**375**	**241**	**434**	**419**
Thallium	ug/g	**0.046**	**0.042**	**0.022**	**0.029**	**0.036**	**0.101**	**0.094**
Vanadium	ug/g	**27.8**	**7.53**	**5.81**	**40.1**	**24.1**	**10.2**	**16.7**
Zinc	ug/g	**10.6**	**8.94**	5.35 U	**23.8**	**64.6**	6.9 U	5.26 U

NA - Not analyzed
U - Not detected
J - Estimated value
X - Value not included in calculation of mean

Table 4-6. Background Sediment Analytical Results
Fort McClellan, Alabama

Site ID		BG-D25	BGP-D01	BGP-D02	BGP-D03	BGP-D04	BGP-D05	BGP-D06
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		LAKE	CREK	CREK	CREK	CREK	CREK	CREK
Collection Date		7/17/97	7/21/97	7/21/97	7/21/97	7/20/97	7/20/97	8/1/97
Depth (ft)		0	0	0	0	0	0	0
METALS	Units							
Aluminum	ug/g	**8020**	**3160**	**7890**	**2100**	**886**	**3110**	**6510**
Antimony	ug/g	**0.135** J	**0.245** J	**0.954** J	**0.347** J	0.126 J	**0.339** J	**0.12** J
Arsenic	ug/g	**0.994** J	**2.49**	**14.1**	**11.8**	**1.37**	**6.71**	**2.06** J
Barium	ug/g	**22.9**	**48.9**	**272**	**104**	**12.2**	**23.5**	**48.4**
Beryllium	ug/g	**0.28**	**0.446**	**0.955**	**0.209**	**0.104**	**0.237**	**0.254**
Cadmium	ug/g	0.02 U	**0.109**	**0.147**	**0.082**	**0.037**	**0.068**	**0.053**
Calcium	ug/g	**486**	**886**	**550**	**169**	**459**	**452**	**759**
Chromium	ug/g	**11.3**	**6.7**	**51**	**21.3**	**5.26**	**13.1**	**4.44**
Cobalt	ug/g	**2.43**	**3.9**	**59.3** X	**10.4**	**1.89**	**4.35**	**2.11**
Copper	ug/g	**6.32**	**7.35**	**7.38**	**6.11**	**1.62**	**7.32**	**2.17**
Cyanide	ug/g	0.644 U	0.765 U	0.637 U	0.517 U	0.624 U	0.736 U	0.652 U
Hexavalent Chromium	ug/g	N/A	0.15 U	N/A	N/A	0.13 U	N/A	N/A
Iron	ug/g	**16000**	**9000**	**32200**	**12600**	**3920**	**15500**	**6810**
Lead	ug/g	**7.13**	**16.2** J	**76.9** J	**10.8** J	**4.44** J	**8.44** J	**10.9**
Magnesium	ug/g	**1630**	**411**	**254**	**87.7**	**272**	**194**	**217**
Manganese	ug/g	**11.4**	**315**	**10000** X	**967**	**103**	**243**	**195**
Mercury	ug/g	**0.092**	**0.089**	**0.072**	**0.058**	**0.06**	**0.089**	0.055 U
Nickel	ug/g	**4.3**	**3.39**	**15.3**	**4.16**	2.52 U	**5.66**	**2.42**
Potassium	ug/g	**1370**	**187**	116 U	**136**	126 U	**145**	108 U
Selenium	ug/g	0.495 U	0.531 U	0.578 U	0.466 U	0.63 U	0.691 U	0.539 U
Silver	ug/g	**0.028**	**0.333**	**0.09**	**0.021**	**0.037**	0.028 U	0.022 U
Sodium	ug/g	**325**	**374**	**337**	**350**	**349**	**430**	**358**
Thallium	ug/g	**0.134**	**0.044**	**0.017**	**0.053**	**0.017**	**0.055**	**0.015**
Vanadium	ug/g	**20.3**	**10.9**	**66.7**	**21**	**4.3**	**23.7**	**11.4**
Zinc	ug/g	**10.9**	**18**	**18.3**	**17.5**	**9.27**	**38.8**	**11.2**

NA - Not analyzed
U - Not detected
J - Estimated value
X - Value not included in calculation of mean

Table 4-6. Background Sediment Analytical Results
Fort McClellan, Alabama

Site ID		BGP-D07	BGP-D07	BGP-D08	BGP-D09	BGP-D10	BGP-D11	BGP-D12
Field Sample Number		SAIC01	SAIC01D	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		CREK	CREK	CREK	CREK	CREK	CREK	CREK
Collection Date		7/20/97	7/20/97	7/20/97	7/20/97	8/2/97	7/21/97	7/21/97
Depth (ft)		0	0	0	0	0	0	0
METALS	Units							
Aluminum	ug/g	**3830**	**3370**	**2050**	**6100**	**9490**	**9380**	**2220**
Antimony	ug/g	**0.523** J	**0.494** J	**0.49** J	**0.29** J	**1.2**	**0.689** J	**0.552**
Arsenic	ug/g	**14.9**	**11.2**	**14.7**	**3.13**	**13.9**	**18.7**	**5.49** J
Barium	ug/g	**28.8**	**38.6**	**12.5**	**115**	**117**	**96.9**	**36.7**
Beryllium	ug/g	**0.792**	**0.457**	**0.198**	**0.672**	**0.968**	**0.54**	**0.345**
Cadmium	ug/g	**0.086**	**0.11**	**0.034**	**0.208**	**0.567**	**0.072**	**0.098**
Calcium	ug/g	**377**	**437**	**202**	**601**	**2360**	**1200**	**300**
Chromium	ug/g	**24.9**	**23.5**	**16.6**	**5.13**	**28.7** J	**21.4**	**8.35** J
Cobalt	ug/g	**5.3**	**3.55**	**9.42**	**6.11**	**11.9**	**15.6**	**10**
Copper	ug/g	**4.65**	**4.44**	**7.13**	**6.94**	**24.9**	**9.94**	**7.33**
Cyanide	ug/g	0.871 U	0.709 U	0.565 U	1.17 U	0.75 U	0.699 U	0.65 U
Hexavalent Chromium	ug/g	N/A	N/A	0.11 U	N/A	N/A	N/A	N/A
Iron	ug/g	**22300**	**12500**	**14200**	**4610**	**33500**	**24900**	**12200**
Lead	ug/g	**10.2** J	**12.2** J	**9.43** J	**26.7** J	**34.5**	**57.7** J	**6.36**
Magnesium	ug/g	**120**	**138**	**91.8**	**177**	**2110**	**548**	**229**
Manganese	ug/g	**304**	**268**	**507**	**341**	**610** J	**2050**	**885**
Mercury	ug/g	**0.077**	**0.106**	**0.061**	**0.137**	0.055 U	**0.099**	0.041 U
Nickel	ug/g	**4.66**	**3.22**	**4.84**	**6.73**	**30.4** J	**7.56**	**9.67**
Potassium	ug/g	151 U	147 U	113 U	148 U	**534**	**250**	**145**
Selenium	ug/g	0.754 U	0.736 U	0.565 U	0.739 U	**1.74**	0.669 U	0.462 U
Silver	ug/g	**0.03**	0.029 U	0.023 U	**0.052**	**0.154**	**0.11**	**0.064**
Sodium	ug/g	**506**	**493**	**350**	**469**	**308**	**370**	**173**
Thallium	ug/g	**0.067**	**0.074**	**0.036**	**0.076**	**0.063**	**0.173**	**0.027**
Vanadium	ug/g	**45.6**	**33**	**26.1**	**11.3**	**37.2**	**53.4**	**15.5**
Zinc	ug/g	**25.4**	**24.1**	**12.6**	**36.2**	**94.7**	**29.6**	**28.6**

NA - Not analyzed
U - Not detected
J - Estimated value
X - Value not included in calculation of mean

Table 4-6. Background Sediment Analytical Results
Fort McClellan, Alabama

Site ID		BGP-D13	BGP-D14	BGP-D15	BGP-D16	BGP-D16	BGP-D17	BGP-D18
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01D	SAIC01	SAIC01
Site Type		CREK	CREK	CREK	POND	POND	CREK	CREK
Collection Date		7/16/97	8/2/97	7/16/97	7/16/97	7/16/97	7/20/97	7/20/97
Depth (ft)		0	0	0	0	0	0	0
METALS	Units							
Aluminum	ug/g	**7880**	**2950**	**6580**	**2050**	**1710**	**1930**	**1450**
Antimony	ug/g	**0.423** J	**0.558**	**0.168** J	0.125 UJ	0.106 U	**0.596** J	**0.49** J
Arsenic	ug/g	**3.9** J	**15.9**	**6.89** J	**0.609**	**0.205**	**11.2**	**6.37**
Barium	ug/g	**71**	**16.2**	**50.3**	**21.2**	**19.2**	**14.8**	**16.1**
Beryllium	ug/g	**1.05**	**0.203**	**0.516**	**0.104**	**0.071**	**0.589**	**0.225**
Cadmium	ug/g	**0.118**	**0.068**	**0.05**	0.025 U	0.021 U	**0.787**	**1.81**
Calcium	ug/g	**878**	**817**	**321**	**117**	**98.2**	**298**	**159**
Chromium	ug/g	**16.7**	**12.8** J	**7.56**	**1.71**	**1.14**	**18.2**	**8.5**
Cobalt	ug/g	**12.7**	**3.02**	**3.42**	0.286 U	0.243 U	**7.65**	**15.6**
Copper	ug/g	**20.8**	**7.09**	**8.65**	**2.04**	**2.7**	**112** X	**55.6** X
Cyanide	ug/g	0.561 U	0.84 U	1.07 U	0.582 U	0.615 U	0.727 U	0.591 U
Hexavalent Chromium	ug/g	N/A	N/A	N/A	N/A	N/A	0.13 U	0.12 U
Iron	ug/g	**27300**	**13700**	**8380**	**683**	**759**	**17600**	**9890**
Lead	ug/g	**15.5**	**12.3** J	**19.5**	**4.58**	**4.16**	**15.6** J	**16.3** J
Magnesium	ug/g	**3270**	**283**	**268**	**69.8**	**51.4**	**162**	**122**
Manganese	ug/g	**431**	**113** J	**86**	4.98 U	4.23 U	**324**	**727**
Mercury	ug/g	0.042 U	**0.056**	**0.119**	**0.085**	**0.062**	**0.067**	**0.052**
Nickel	ug/g	**25.8**	**4.68** J	**5.01**	2.49 U	2.12 U	**12.6**	**8.16**
Potassium	ug/g	**330**	136 U	**219**	125 U	106 U	129 U	119 U
Selenium	ug/g	0.561 U	0.678 U	0.783 U	0.623 U	0.529 U	0.644 U	0.597 U
Silver	ug/g	0.022 U	**0.243**	0.031 U	**0.254**	**0.217**	**0.655**	**0.105**
Sodium	ug/g	**323**	**515**	**493**	**382**	**315**	**424**	59.7 U
Thallium	ug/g	**0.031**	**0.097**	**0.182**	**0.086**	**0.032**	**0.057**	**0.02**
Vanadium	ug/g	**25.2**	**24.2**	**19**	**2.59**	**2.81**	**24.8**	**10.7**
Zinc	ug/g	**71.6**	**29.2**	**15.4**	6.23 U	5.29 U	**77.1**	**64.1**

NA - Not analyzed
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X - Value not included in calculation of mean

Table 4-6. Background Sediment Analytical Results
Fort McClellan, Alabama

Site ID		BGP-D19	BGP-D20	BGP-D21	BGP-D22	BGP-D23	BGP-D24	BGP-D25
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		CREK	CREK	CREK	CREK	CREK	CREK	CREK
Collection Date		7/20/97	7/16/97	8/2/97	7/21/97	7/21/97	7/20/97	7/16/97
Depth (ft)		0	0	0	0	0	0	0
METALS	Units							
Aluminum	ug/g	**5130**	**4580**	**2480**	**3490**	**2150**	**868**	**13500**
Antimony	ug/g	**0.666** J	**0.878** J	**0.365**	**0.353**	**0.412**	0.108 U	**0.651** J
Arsenic	ug/g	**7.93**	**10.6** J	**20.1**	**3.66** J	**6.91** J	**1.86**	**8.79** J
Barium	ug/g	**24.8**	**74.5**	**15.1**	**44.6**	**27.3**	**11.9**	**99.8**
Beryllium	ug/g	**0.641**	**1.08**	**0.497**	**0.471**	**0.449**	**0.157**	**1.24**
Cadmium	ug/g	**0.099**	**0.417**	**0.059**	**0.192**	**0.103**	**0.06**	**0.121**
Calcium	ug/g	**290**	**653**	**299**	**2810**	**618**	**1270**	**1770**
Chromium	ug/g	**22.7**	**48.9**	**48.5** J	**11.9** J	**6.14** J	**5.82**	**26.8**
Cobalt	ug/g	**6.4**	**18.5**	**6.2**	**5.1**	**5.13**	**2.27**	**8.67**
Copper	ug/g	**13**	**13.2**	**3.12**	**12.6**	**12.2**	**1.62**	**32.9**
Cyanide	ug/g	0.736 U	0.63 U	0.585 U	0.827 U	0.749 U	0.63 U	0.839 U
Hexavalent Chromium	ug/g	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/g	**28200**	**36700**	**26100**	**11000**	**10800**	**4230**	**38600**
Lead	ug/g	**15.2** J	**17.3**	**9.68** J	**22.5**	**17.4**	**5.54** J	**18.8**
Magnesium	ug/g	**226**	**259**	**274**	**1110**	**217**	**739**	**3140**
Manganese	ug/g	**120**	**1230**	**377** J	**550**	**334**	**185**	**121**
Mercury	ug/g	**0.083**	**0.063**	0.046 U	0.057 U	0.052 U	**0.065**	**0.069**
Nickel	ug/g	**10.2**	**23.2**	**5.08** J	**3.65**	**7.71**	2.15 U	**32.7**
Potassium	ug/g	**299**	**259**	125 U	**254**	151 U	108 U	**739**
Selenium	ug/g	0.688 U	**1.03**	0.626 U	0.836 U	0.756 U	0.538 U	**1.88**
Silver	ug/g	**0.05**	**0.105**	**0.03**	**0.505**	**0.158**	**0.049**	**0.174**
Sodium	ug/g	**584**	**319**	**337**	**547**	**517**	**309**	**485**
Thallium	ug/g	**0.077**	**0.04**	**0.031**	**0.061**	**0.057**	**0.022**	**0.048**
Vanadium	ug/g	**24.6**	**33.2**	**38.1**	**13.7**	**14.9**	**4.58**	**33.9**
Zinc	ug/g	**30.8**	**44.4**	**29.3**	**35.7**	**37.2**	**9.23**	**80**

NA - Not analyzed
U - Not detected
J - Estimated value
X - Value not included in calculation of mean

Table 4-6. Background Sediment Analytical Results
Fort McClellan, Alabama

Site ID		BK-D01	BK-D02	BK-D03	BK-D04	LF1-D01	LF2-D01	T5-D02
Field Sample Number		BK-D01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		CREK	CREK	LAKE	CREK	CREK	CREK	CREK
Collection Date		4/13/92	6/19/94	6/19/94	6/19/94	6/9/94	6/9/94	6/6/94
Depth (ft)		0	0	0	0	0	0	0
METALS	Units							
Aluminum	ug/g	**11900**	**7750**	**6760**	**5490**	**17400**	**4790**	**6330**
Antimony	ug/g	N/A	1 U	1 U	1 U	1 U	1 U	1 U
Arsenic	ug/g	**6.81**	2.5 UX	9.45 X	2.5 UX	4.88 X	14.9 X	14.5 X
Barium	ug/g	**82.9**	**92.1**	**112**	**35**	**124**	**11.3**	**27.8**
Beryllium	ug/g	1.26 X	1.24 X	0.882 X	0.427 X	0.904 X	0.427 X	0.427 X
Cadmium	ug/g	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	**2.37**
Calcium	ug/g	**88.8**	**145**	**1460**	**116**	**1330**	**567**	**388**
Chromium	ug/g	**12.3**	**7.9**	**36.4**	**7.68**	**21.4**	**51**	**26.9**
Cobalt	ug/g	**4.79**	**4.13**	**7.64**	2.5 U	**6.32**	2.5 U	2.5 U
Copper	ug/g	**4.77**	**6.95**	**14**	2.84 U	**14.9**	**7.56**	**58.6**
Cyanide	ug/g	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexavalent Chromium	ug/g	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/g	**23700**	**42300**	**31600**	**10200**	**24300**	**45700**	**20400**
Lead	ug/g	7.44 U	**5.83**	**12.3**	**3.94**	**14.6**	**10.2**	**260** X
Magnesium	ug/g	**543**	**499**	**1540**	**291**	**2440**	**530**	**153**
Manganese	ug/g	**172**	**309**	**203**	**189**	**103**	**140**	**163**
Mercury	ug/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Nickel	ug/g	**5.35**	**8.52**	**9.71**	2.74 U	**17.5**	2.74 U	2.74 U
Potassium	ug/g	**4810**	**3910**	**1280**	**1460**	**1510**	**482**	131 U
Selenium	ug/g	0.449 U	0.449 U	0.449 U	0.449 U	0.449 U	**0.722**	0.449 U
Silver	ug/g	0.803 U	0.803 U	0.803 U	0.803 U	0.803 U	0.803 U	0.803 U
Sodium	ug/g	38.7 U	38.7 U	38.7 U	38.7 U	38.7 U	38.7 U	38.7 U
Thallium	ug/g	N/A	34.3 UX	34.3 UX	34.3 UX	34.3 UX	34.3 UX	34.3 UX
Vanadium	ug/g	**13.8**	**12.2**	**22.2**	**7.76**	**27.1**	**40.1**	**26**
Zinc	ug/g	**15.1**	**20**	**34.7**	**7.92**	**45.3**	**11**	**111**

NA - Not analyzed
U - Not detected
J - Estimated value
X - Value not included in calculation of mean

Table 4-6. Background Sediment Analytical Results
Fort McClellan, Alabama

Site ID		SD-BK-001	SD-BK-002
Field Sample Number		SAIC01	SAIC01
Site Type		CREK	CREK
Collection Date		2/1/95	2/1/95
Depth (ft)		1	1
METALS	Units		
Aluminum	ug/g	**3010**	**2470**
Antimony	ug/g	7.14 UX	7.14 UX
Arsenic	ug/g	**11.8**	**2.04**
Barium	ug/g	**39.9**	**43.6**
Beryllium	ug/g	0.5 UX	0.5 UX
Cadmium	ug/g	0.7 U	0.7 U
Calcium	ug/g	**1650**	**237**
Chromium	ug/g	**28.5**	**63.4**
Cobalt	ug/g	**7.57**	**6.61**
Copper	ug/g	**5.58**	**2.72**
Cyanide	ug/g	0.92 U	0.92 U
Hexavalent Chromium	ug/g	0.514 UX	0.514 UX
Iron	ug/g	**25900**	**33700**
Lead	ug/g	**23**	**10.4**
Magnesium	ug/g	**657**	**145**
Manganese	ug/g	**882**	**616**
Mercury	ug/g	0.05 U	0.05 U
Nickel	ug/g	**6.42**	**11.1**
Potassium	ug/g	**167**	100 U
Selenium	ug/g	0.25 U	0.25 U
Silver	ug/g	0.589 U	0.589 U
Sodium	ug/g	**419**	**355**
Thallium	ug/g	6.62 UX	6.62 UX
Vanadium	ug/g	**29.4**	**43.4**
Zinc	ug/g	**28.9**	**48.8**

NA - Not analyzed
U - Not detected
J - Estimated value
X - Value not included in calculation of mean

Table 4-7. Background Surface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BG-S01	BG-S02	BG-S03	BG-S04	BG-S05	BG-S06	BG-S07
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		8/4/97	7/23/97	7/29/97	7/29/97	7/29/97	7/29/97	7/29/97
Depth (ft)		0-1	0-1	0-1	0-1	0-1	0-1	0-1
METALS								
Parameter	Units							
Aluminum	ug/g	**6720**	**7750**	**2880**	**8060**	**3930**	**5080**	**8530**
Antimony	ug/g	**0.317**	**0.253**	**0.13**	**0.145**	**0.243**	**0.356**	**0.217**
Arsenic	ug/g	**5.15**	**4.89** J	**1.18** J	**2.14** J	**2.56** J	**5.07** J	**4.26** J
Barium	ug/g	**75.5**	**47.1**	**17.2**	**56.4**	**43.9**	**122**	**60.9**
Beryllium	ug/g	**0.378**	**0.467**	**0.074**	**0.868**	**0.605**	**0.754**	**0.603**
Cadmium	ug/g	**0.066**	0.13 U	**0.104**	**0.085**	**0.056**	**0.143**	**0.036**
Calcium	ug/g	**579**	**124**	**197**	**143**	**105**	**17900**	**2210**
Chromium	ug/g	**10.6** J	**8.04** J	**5.48** J	**4.31** J	**5.6** J	**7.57** J	**9.41** J
Cobalt	ug/g	**4.95**	**2.4**	**0.576**	**6.08**	**4.29**	**7.47**	**2.7**
Copper	ug/g	**4.61**	**2.93**	**1.88**	**2.72**	**8.26**	**8.98**	**6.1**
Cyanide	ug/g	0.536 U	0.647 U	0.528 U	0.502 U	0.521 U	0.532 U	0.598 U
Hexavalent Chromium	ug/g	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/g	**12800**	**8070**	**3370**	**5910**	**14000**	**11800**	**18000**
Lead	ug/g	**11.8** J	**27.8**	**9.08**	**15.9**	**13.3**	**23.2**	**8.07**
Magnesium	ug/g	**233**	**116**	**80.7**	**189**	**206**	**9600**	**620**
Manganese	ug/g	**446** J	**366**	**36.8**	**873**	**348**	**849**	**81.2**
Mercury	ug/g	**0.092**	**0.076**	0.038 U	0.041 U	**0.046**	0.042 U	0.046 U
Nickel	ug/g	**4.56** J	2.33 U	**2.47**	**3.59**	**3.89**	**7.17**	**3.06**
Potassium	ug/g	**165**	116 U	**104**	**163**	**614**	**301**	**370**
Selenium	ug/g	0.407 U	0.581 U	0.503 U	0.506 U	0.496 U	0.563 U	0.495 U
Silver	ug/g	**0.048**	**0.028**	0.02 U	**0.027**	**0.048**	**0.029**	**0.053**
Sodium	ug/g	**254**	**361**	**267**	**259**	**310**	**376**	**283**
Thallium	ug/g	**0.081**	**0.034**	**0.019**	**0.175**	**0.08**	**0.206**	**0.058**
Vanadium	ug/g	**21.1**	**19.8**	**6.93**	**8.49**	**10.6**	**15.2**	**19.6**
Zinc	ug/g	**18.5**	**26.7**	**8.31**	**15.4**	**13.6**	**26.7**	**9.36**

NA - Not analysed.
U - Not detected
J - Estimated value
X - Value not included in calculation of mean.

Table 4-7. Background Surface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BG-S08	BG-S09	BG-S10	BG-S11	BG-S12	BG-S13	BG-S14
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		7/29/97	7/22/97	8/4/97	8/3/97	7/22/97	7/22/97	7/22/97
Depth (ft)		0-1	0-1	0-1	0-1	0-1	0-1	0-1
METALS								
Parameter	Units							
Aluminum	ug/g	**2950**	**5230**	**4910**	**7880**	**3850**	**3010**	**4150**
Antimony	ug/g	0.098 U	0.1 U	0.107 U	**0.605**	**0.172**	**0.182**	**0.111**
Arsenic	ug/g	**1.49** J	**1.1** J	**1.18**	**6.34**	**2** J	**1.09** J	**1.18** J
Barium	ug/g	**14.4**	**18.7**	**58.6**	**16.7**	**23.5**	**67.5**	**34.1**
Beryllium	ug/g	**0.218**	**0.154**	**0.196**	**0.604**	**0.184**	**0.235**	**0.178**
Cadmium	ug/g	**0.024**	**0.03**	0.054 U	**0.047**	**0.046**	**0.057**	**0.033**
Calcium	ug/g	**86.2**	75.4 U	**432**	**147**	**154**	**193**	**116**
Chromium	ug/g	**5.51**	**4** J	**3.65** J	**65.9** J	**10.9** J	**1.99** J	**6.06** J
Cobalt	ug/g	**0.39**	**0.458**	**2.12**	**3.81**	**2.07**	**1.7**	**1.43**
Copper	ug/g	**2.14**	0.502 U	**2.13**	**7.75**	**1.98**	**8.41**	**2.61**
Cyanide	ug/g	0.473 U	0.517 U	0.562 U	0.532 U	0.51 U	0.539 U	0.54 U
Hexavalent Chromium	ug/g	N/A	N/A	N/A	N/A	0.11 U	N/A	N/A
Iron	ug/g	**11300**	**3840**	**4590**	**33800**	**6220**	**2510**	**3890**
Lead	ug/g	**2.89**	**2.89**	**11.7** J	**12.5** J	**13.5**	**50.8**	**5.69**
Magnesium	ug/g	**59.8**	**88.1**	**151**	**160**	**101**	**127**	**162**
Manganese	ug/g	**81.4**	**8.03**	**185** J	**172** J	**209**	**292**	**128**
Mercury	ug/g	0.038 U	0.039 U	**0.055**	**0.143**	0.039 U	0.037 U	0.035 U
Nickel	ug/g	1.96 U	2.01 U	2.14 U	**8.83** J	**3.57**	**2.38**	**2**
Potassium	ug/g	98.2 U	100 U	**124**	**172**	**139**	**108**	**105**
Selenium	ug/g	0.491 U	0.502 U	0.535 U	0.377 U	0.531 U	0.523 U	0.477 U
Silver	ug/g	0.02 U	0.02 U	**0.054**	**0.114**	0.021 U	**0.026**	0.019 U
Sodium	ug/g	**76.3**	**316**	**351**	**258**	**358**	**350**	**283**
Thallium	ug/g	**0.05**	**0.044**	**0.074**	**0.127**	**0.046**	**0.058**	**0.039**
Vanadium	ug/g	**9.6**	**9.1**	**7.33**	**49.8**	**12.3**	**4.66**	**8.32**
Zinc	ug/g	4.91 U	5.02 U	**11**	**27.7**	**11**	**13.4**	**6.01**

NA - Not analysed.
U - Not detected
J - Estimated value
X - Value not included in calculation of mean.

Table 4-7. Background Surface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BG-S15	BG-S15	BG-S16	BG-S17	BG-S18	BG-S19	BG-S20
Field Sample Number		SAIC01	SAIC01D	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		8/5/97	8/5/97	8/17/97	8/12/97	8/5/97	8/3/97	8/4/97
Depth (ft)		0-1	0-1	0-1	0-1	0-1	0-1	0-1
METALS								
Parameter	Units							
Aluminum	ug/g	4260	3760	4580	10300	6490	5530	4860
Antimony	ug/g	0.185	0.197	0.082 U	0.167	0.143	0.135	0.128
Arsenic	ug/g	3.66 J	0.815 J	1.31 J	4.05 J	1.6 J	1.41	2.12
Barium	ug/g	61.9	59.9	24.9	96.6	85.1	42	30.6
Beryllium	ug/g	0.584	0.612	0.213	0.806	0.453	0.35	0.231
Cadmium	ug/g	0.047 U	0.044 U	0.016 U	0.057 J	0.023 U	0.054	0.027 U
Calcium	ug/g	2110	2430	62.9	158	142	134	526
Chromium	ug/g	8.67 J	9.71 J	5.11	19.3	3.44 J	6.85 J	9.75 J
Cobalt	ug/g	7.33 J	7.05 J	1.22	3.65	31.9 J	1.46	1.42
Copper	ug/g	2.5	2.34	2.22	9.92	14.4	2.45	2.91
Cyanide	ug/g	0.542 U	0.481 U	0.502 U	0.525 U	0.579 U	0.555 U	0.498 U
Hexavalent Chromium	ug/g	0.11 U	N/A	0.11 U	N/A	0.13 U	N/A	0.11 U
Iron	ug/g	8290	8940	9020	27200	7730	8870	11900
Lead	ug/g	18.7	60.4	7.24	10.7	16.6	9.4 J	5.86 J
Magnesium	ug/g	373	491	105	254	157	114	261
Manganese	ug/g	842	813	43	351	1450	154 J	132 J
Mercury	ug/g	0.04 U	0.04	0.023 U	0.035	0.078	0.061	0.044
Nickel	ug/g	1.93	1.83	1.97	3.03	2.44	1.84 U	2.07 U
Potassium	ug/g	216	216	244	245	392	157	231
Selenium	ug/g	0.456 U	0.433 U	0.41 U	0.525 U	0.579 U	0.461 U	0.517 U
Silver	ug/g	0.028	0.065	0.034	0.033	0.19	0.159	0.041
Sodium	ug/g	421	390	258	371	563	303	326
Thallium	ug/g	0.093	0.114	0.02	0.073	0.139	0.057	0.04
Vanadium	ug/g	13.1	13.5	6.94	25.4	7.71	11.5	15.6
Zinc	ug/g	6.02	5.91	6.53	16.9	11.3	11.2	5.17

NA - Not analysed.
U - Not detected
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X - Value not included in calculation of mean.

Table 4-7. Background Surface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BG-S21	BG-S22	BG-S23	BG-S24	BG-S25	BGP-S01	BGP-S02
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		7/22/97	8/3/97	7/22/97	7/22/97	7/22/97	7/30/97	8/1/97
Depth (ft)		0-1	0-1	0-1	0-1	0-1	0-1	0-1
METALS								
Parameter	Units							
Aluminum	ug/g	**2400**	**5530**	**6550**	**10100**	**3640**	**8270**	**11300**
Antimony	ug/g	**0.162**	**0.147**	**0.556**	**0.945**	**0.391**	**2.64**	**0.558**
Arsenic	ug/g	**2.49** J	**2.36**	**3.91** J	**7.3** J	**1.98** J	**48.5** J	**10.4** J
Barium	ug/g	**31.3**	**24.3**	**46.9**	**30**	**32.8**	**28.2**	**125**
Beryllium	ug/g	**0.306**	**0.135**	**0.752**	**0.331**	**0.169**	**0.462**	**0.511**
Cadmium	ug/g	**0.11**	**0.03**	**0.083**	**0.053**	**0.077**	**0.063**	**0.059**
Calcium	ug/g	**4000**	**153**	**2460**	**612**	**508**	**418**	**601**
Chromium	ug/g	**9.35** J	**7.89** J	**9.76** J	**70** J	**16.9** J	**134**	**21.4**
Cobalt	ug/g	**2.44**	**0.936**	**6.43**	**4.51** J	**2.5**	**2.19**	**10.3**
Copper	ug/g	**4.32**	**3.06**	**14.5**	**8.99**	**4.66**	**1.31**	**5.36**
Cyanide	ug/g	0.571 U	0.536 U	0.534 U	0.526 U	0.522 U	0.588 U	0.553 U
Hexavalent Chromium	ug/g	N/A	N/A	N/A	N/A	N/A	0.11 U	N/A
Iron	ug/g	**7780**	**9720**	**16300**	**36400**	**8530**	**56300**	**21600**
Lead	ug/g	**11.2**	**4.68** J	**34.1**	**22.1**	**14.3**	**22.6**	**29**
Magnesium	ug/g	**2160**	**128**	**927**	**323**	**146**	**102**	**239**
Manganese	ug/g	**289**	**87** J	**358**	**244**	**265**	**881**	**2520**
Mercury	ug/g	0.035 U	0.041 U	**0.067**	0.041 U	0.043 U	0.038 U	0.038 U
Nickel	ug/g	**2.35**	**2.36** J	**5.98**	**5.56**	**3.58**	2.12 U	**7.24**
Potassium	ug/g	**133**	**205**	**315**	**235**	**139**	106 U	**236**
Selenium	ug/g	0.478 U	0.526 U	0.462 U	0.517 U	0.48 U	0.53 U	0.482 U
Silver	ug/g	**0.097**	0.021 U	**0.06**	**0.073**	0.019 U	**0.029**	**0.046**
Sodium	ug/g	**337**	**334**	**334**	**351**	**287**	**283**	**297**
Thallium	ug/g	**0.055**	**0.082**	**0.055**	**0.125**	**0.042**	**0.052**	**0.069**
Vanadium	ug/g	**11.1**	**12.8**	**16.6**	**73.4**	**9.6**	**158**	**46.4**
Zinc	ug/g	**13**	**5.86**	**38.5**	**17.7**	**13.3**	10.6 U	**12.9**

NA - Not analysed.
U - Not detected
J - Estimated value
X - Value not included in calculation of mean.

Table 4-7. Background Surface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BGP-S03	BGP-S04	BGP-S04	BGP-S05	BGP-S06	BGP-S07	BGP-S08
Field Sample Number		SAIC01	SAIC01	SAIC01D	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		8/2/97	8/1/97	8/1/97	8/1/97	8/1/97	8/1/97	8/17/97
Depth (ft)		0-1	0-1	0-1	0-1	0-1	0-1	0-1
METALS								
Parameter	Units							
Aluminum	ug/g	**13800**	**6400**	**7120**	**2460**	**13500**	**3670**	**4780**
Antimony	ug/g	**0.856**	**0.513**	**0.502**	**0.14**	**0.626**	**0.638**	**0.306**
Arsenic	ug/g	**19.5**	**28.3** J	**24.3** J	**4.14** J	**17.4** J	**19.8** J	**7.93**
Barium	ug/g	**288**	**84.8**	**138**	**19.6**	**128**	**11.2**	**52.5**
Beryllium	ug/g	**0.676**	**0.551**	**0.608**	**0.268**	**0.617**	**0.169**	**0.286** J
Cadmium	ug/g	**0.123**	**0.095**	**0.114**	**0.048**	**0.131**	**0.036**	**0.041**
Calcium	ug/g	**498**	**502**	**504**	**221**	**455**	**140**	**218**
Chromium	ug/g	**18.9** J	**17.6**	**18.2**	**11.2**	**16.2**	**29.5**	**10.1** J
Cobalt	ug/g	**42.2**	**37.6**	**41.5**	**2.68**	**70.9**	**3.61**	**9.01**
Copper	ug/g	**9.8**	**14.2**	**15.2**	**6.38**	**9.04**	**4.67**	**3.4**
Cyanide	ug/g	0.635 U	0.563 U	0.566 U	0.584 U	0.613 U	0.549 U	0.586 U
Hexavalent Chromium	ug/g	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/g	**32000**	**19000**	**19500**	**8490**	**23000**	**18500**	**8420**
Lead	ug/g	**63.7** J	**33.5**	**38.3**	**3.42**	**82.8**	**9.02**	**14.8**
Magnesium	ug/g	**286**	**229**	**246**	**79**	**331**	**83.8**	**138**
Manganese	ug/g	**5300** J	**3090**	**3840**	**73.6**	**6850**	**216**	**1130** J
Mercury	ug/g	**0.177**	0.045 U	0.042 U	0.039 U	**0.06**	0.039 U	**0.064**
Nickel	ug/g	**11.2** J	**14.5**	**15.7**	**5.11**	**9.82**	**2.92**	**4.89**
Potassium	ug/g	**308**	**225**	**217**	106 U	**302**	**104**	112 U
Selenium	ug/g	0.559 U	0.517 U	0.583 U	0.529 U	0.512 U	0.445 U	0.558 U
Silver	ug/g	**1.87**	**0.021**	**0.026**	0.021 U	**0.117**	**0.022**	**0.029** J
Sodium	ug/g	**340**	**349**	**355**	**346**	**322**	**278**	**321**
Thallium	ug/g	**0.26**	**0.087**	**0.057**	**0.015**	**0.047**	**0.024**	**0.032**
Vanadium	ug/g	**68.1**	**27.5**	**27.7**	**10.7**	**45.2**	**38.2**	**15.4**
Zinc	ug/g	**25.3**	**35.6**	**36.5**	**40.7**	**23.9**	**14.8**	**7.74**

NA - Not analysed.
U - Not detected
J - Estimated value
X - Value not included in calculation of mean.

Table 4-7. Background Surface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BGP-S09	BGP-S10	BGP-S11	BGP-S12	BGP-S13	BGP-S14	BGP-S15
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		8/1/97	8/17/97	7/31/97	8/4/97	7/30/97	7/31/97	7/31/97
Depth (ft)		0-1	0-1	0-1	0-1	0-1	0-1	0-1
METALS								
Parameter	Units							
Aluminum	ug/g	4580	5530	7260	7680	4560	6820	7310
Antimony	ug/g	0.396	0.093 U	0.202	0.37	0.59	0.446	0.247
Arsenic	ug/g	17.3 J	2.22	2.42 J	12.9 J	3.94 J	7.06 J	3.22 J
Barium	ug/g	17.5	28.1	69.1	40	30.2	38.5	15
Beryllium	ug/g	0.201	0.143 J	0.391	0.062	0.402	0.513	0.171
Cadmium	ug/g	0.026	0.059	0.031	0.053 U	0.209	0.036	0.027
Calcium	ug/g	142	101	158	402	423	80.2	213
Chromium	ug/g	13.2	5.59 J	7.59	52.9 J	10.7	17.4	11.3
Cobalt	ug/g	1.98	1.24	7.4	2.18 J	3.5	1.84	0.911
Copper	ug/g	3.67	3.15	2.21	3.88	10.7	8.71	2.28
Cyanide	ug/g	0.589 U	0.591 U	0.568 U	0.594 U	0.563 U	0.525 U	0.558 U
Hexavalent Chromium	ug/g	N/A	N/A	N/A	N/A	0.11 U	N/A	N/A
Iron	ug/g	16300	6510	6460	24900	15800	18900	11700
Lead	ug/g	9.29	21.9	14.1	19.8	10.6	8.02	7.94
Magnesium	ug/g	103	135	181	184	652	172	160
Manganese	ug/g	295	131 J	1120	129	120	27.4	29.7
Mercury	ug/g	0.036 U	0.031	0.036 U	0.125	0.042 U	0.039 U	0.04 U
Nickel	ug/g	2.09 U	1.85 U	3.64	2.11 U	6.26	3.44	1.92 U
Potassium	ug/g	109	92.6 U	131	146	199	367	111
Selenium	ug/g	0.523 U	0.463 U	0.469 U	0.526 U	0.51 U	1.28	0.479 U
Silver	ug/g	0.021 U	0.019 U	0.021	0.774	0.026	0.044	0.019 U
Sodium	ug/g	328	316	307	507	336	348	300
Thallium	ug/g	0.018	0.023	0.044	0.453	0.052	0.017	0.031
Vanadium	ug/g	34	13	12.6	58.3	18.7	17.9	22.5
Zinc	ug/g	5.23 U	7.61	8.34	7.2	24.2	20	6.28

NA - Not analysed.
U - Not detected
J - Estimated value
X - Value not included in calculation of mean.

Table 4-7. Background Surface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BGP-S16	BGP-S16	BGP-S17	BGP-S18	BGP-S19	BGP-S20	BGP-S21
Field Sample Number		SAIC01	SAIC01D	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		7/31/97	7/31/97	7/31/97	8/1/97	7/31/97	8/1/97	7/31/97
Depth (ft)		0-1	0-1	0-1	0-1	0-1	0-1	0-1
METALS								
Parameter	Units							
Aluminum	ug/g	**8500**	**9410**	**4690**	**5130**	**13600**	**4620**	**3320**
Antimony	ug/g	**0.427**	**0.444**	**0.281**	**0.186**	**0.949**	**0.126**	**1.04**
Arsenic	ug/g	**9.19**	**9.53** J	**4.7** J	**13** J	**6.83** J	**3.21**	**4.86**
Barium	ug/g	**161**	**107**	**58.3**	**35.1**	**38.8**	**20.6**	**64**
Beryllium	ug/g	**0.783**	**0.559**	**0.353**	**0.43**	**0.36**	**0.163**	**0.765**
Cadmium	ug/g	**0.054**	**0.061**	**0.063**	**0.028**	**0.046**	**0.026**	**0.132**
Calcium	ug/g	**589**	**566**	**1080**	**431**	**168**	**76.7**	**888**
Chromium	ug/g	**24.8** J	**19.2**	**11.3**	**11.8**	**31.6**	**5.36** J	**17** J
Cobalt	ug/g	**7.27**	**7.05**	**1.69**	**3.76**	**1.79**	**1.82**	**8.32**
Copper	ug/g	**4**	**5**	**3.28**	**5.1**	**16.6**	**1.4**	**5.41**
Cyanide	ug/g	0.56 U	0.59 U	0.576 U	0.557 U	0.564 U	0.555 U	0.59 U
Hexavalent Chromium	ug/g	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/g	**15700**	**16500**	**12500**	**12800**	**35600**	**6050**	**29700**
Lead	ug/g	**23.1**	**24.6**	**17.2**	**9.25**	**12**	**6.56** J	**24.2** J
Magnesium	ug/g	**189**	**238**	**260**	**249**	**271**	**89**	**103**
Manganese	ug/g	**2380** J	**2000**	**80.9**	**174**	**20.9**	**129** J	**1330** J
Mercury	ug/g	**0.041**	0.039 U	0.035 U	0.04 U	0.043 U	**0.041**	0.035 U
Nickel	ug/g	**4.12** J	**4.54**	**2.97**	**4.94**	**4.85**	1.64 U	**8.74** J
Potassium	ug/g	**191**	**251**	**143**	**107**	**437**	82.2 U	107 U
Selenium	ug/g	0.582 U	0.496 U	0.507 U	0.512 U	0.477 U	0.411 U	0.533 U
Silver	ug/g	**0.236**	**0.043**	**0.051**	**0.024**	**0.019**	0.016 U	**0.025**
Sodium	ug/g	**383**	**268**	**320**	**337**	**349**	**223**	**355**
Thallium	ug/g	**0.229**	**0.304**	**0.139**	**0.176**	**0.123**	**0.1**	**0.099**
Vanadium	ug/g	**35.6**	**37.1**	**21**	**23.9**	**45.7**	**11.3**	**45**
Zinc	ug/g	**10.1**	**12.8**	**11.1**	**16.5**	**17.4**	**4.62**	**30.1**

NA - Not analysed.
U - Not detected
J - Estimated value
X - Value not included in calculation of mean.

Table 4-7. Background Surface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BGP-S22	BGP-S23	BGP-S24	BGP-S25	BK-S01	BK-S02	BK-S03
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	BK-S0101	SAIC01	SAIC01
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		8/17/97	7/30/97	7/31/97	7/30/97	4/13/92	4/12/94	4/12/94
Depth (ft)		0-1	0-1	0-1	0-1	0-1	0-1	0-1
METALS								
Parameter	Units							
Aluminum	ug/g	4830	5140	4670	5570	26400	22900	24100
Antimony	ug/g	0.107 U	0.322	1.39	0.242	N/A	1 U	1 U
Arsenic	ug/g	2.03	13.3 J	8.53	4.72 J	3.2 X	2.5 UX	4.93 X
Barium	ug/g	60	19	18.7	33.6	283	165	115
Beryllium	ug/g	0.182 J	0.196	0.365	0.466	1.97 X	0.939 X	1.42 X
Cadmium	ug/g	0.025	0.036	0.133	0.027	1.2 U	1.2 U	1.2 U
Calcium	ug/g	239	311	278	153	689	633	5840
Chromium	ug/g	5.04 J	12.1	16.8	12.8	17.5	14.4	23.3
Cobalt	ug/g	2.35	2.12	6.17 J	13.2	10.7	7.96	14.6
Copper	ug/g	1.61	3.62	7.44	4.12	10.1	8.82	14.8
Cyanide	ug/g	0.525 U	0.541 U	0.548 U	0.537 U	N/A	N/A	N/A
Hexavalent Chromium	ug/g	N/A	0.13 U	N/A	0.12 U	N/A	N/A	N/A
Iron	ug/g	4460	14300	23300	14300	31900	20800	33300
Lead	ug/g	5.42	7.2	8.58 J	8.98	28.2	15.1	36
Magnesium	ug/g	133	160	142	312	1380	1070	3860
Manganese	ug/g	269 J	120	127 J	227	811	393	985
Mercury	ug/g	0.027 U	0.037 U	0.076	0.036 U	0.05 U	0.05 U	0.322
Nickel	ug/g	2.14 U	2.2 U	16.9 J	8.79	10.2	8.02	14.6
Potassium	ug/g	107 U	114	200	186	6010	2740	1830
Selenium	ug/g	0.536 U	0.551 U	0.532 U	0.547 U	0.449 U	0.449 U	0.449 U
Silver	ug/g	0.033	0.022 U	0.024	0.062	0.803 U	0.803 U	0.803 U
Sodium	ug/g	338	378	289	319	38.7 U	38.7 U	38.7 U
Thallium	ug/g	0.033	0.072	0.316	0.06	N/A	34.3 UX	34.3 UX
Vanadium	ug/g	9.58	25	33.1	13.6	24.1	22.8	45.5
Zinc	ug/g	5.36 U	8.06	41.5	19.3	39	34.1	209

NA - Not analysed.
U - Not detected
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X - Value not included in calculation of mean.

Table 4-7. Background Surface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BK-S04	SB-BK-101	SB-BK-102	SB-BK-201	SB-BK-202	SB-BK-301	SB-BK-302
Field Sample Number		SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01	SAIC01
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		4/12/94	5/10/95	5/10/95	5/11/95	5/11/95	5/17/95	5/17/95
Depth (ft)		0-1	0.5	0.5	0.5	0-1	0-1	0-1
METALS								
Parameter	Units							
Aluminum	ug/g	**39900**	**15700**	**13500**	**12000**	**9240**	**10100**	**10400**
Antimony	ug/g	1 U	7.14 U	7.14 U	7.14 U	7.14 U	7.14 U	7.14 U
Arsenic	ug/g	**7.97** X	**18**	**4.12**	**4.03**	**3.38**	**2.39**	**2.11**
Barium	ug/g	**126**	**31.6**	**36.6**	**39.8**	**33.5**	**109**	**127**
Beryllium	ug/g	**1.38** X	**0.5** UX	**0.5** UX	**0.5** UX	**0.5** UX	**0.632** X	**0.684** X
Cadmium	ug/g	1.2 U	0.7 U	0.7 U	4.01 U	0.7 U	0.7 U	0.7 U
Calcium	ug/g	**970**	**275**	**315**	100 U	**161**	**821**	**998**
Chromium	ug/g	**27.3**	**50.3**	**50.4**	6.02 U	**12.2**	**9.81**	**10.1**
Cobalt	ug/g	**11**	1.42 U	**2.59**	**10.8**	**7.84**	**8.03**	**7.6**
Copper	ug/g	**23.5**	**9.91**	**8.02**	**7.81**	**6.81**	**7.14**	**5.16**
Cyanide	ug/g	N/A	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U
Hexavalent Chromium	ug/g	N/A	N/A	N/A	0.514 U	0.514 U	0.514 U	0.514 U
Iron	ug/g	**41700**	**41700**	**45200**	**16600**	**13700**	**9440**	**9860**
Lead	ug/g	**35**	**22.5**	**26.2**	**24.1**	**20.4**	**22.7**	**17**
Magnesium	ug/g	**3100**	**317**	**279**	**310**	**265**	**391**	**440**
Manganese	ug/g	**797**	**290**	**486**	**664**	**459**	**1850**	**1610**
Mercury	ug/g	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Nickel	ug/g	**21.8**	**8.18**	**7.5**	**6.88**	**5.46**	**6.02**	**5.54**
Potassium	ug/g	**4780**	**282**	**239**	**211**	**193**	**286**	**229**
Selenium	ug/g	0.449 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Silver	ug/g	0.803 U	0.589 U	**0.891**	0.589 U	0.589 U	0.589 U	0.589 U
Sodium	ug/g	38.7 U	**306**	**363**	**384**	**361**	**347**	**402**
Thallium	ug/g	**34.3** UX	6.62 U	6.62 U	6.62 U	6.62 U	6.62 U	6.62 U
Vanadium	ug/g	**56.5**	**90.7**	**96.7**	**33.4**	**27.1**	**21.2**	**21.1**
Zinc	ug/g	**70.5**	**17.3**	**18.1**	**19.9**	**18.2**	**19.2**	**14**

NA - Not analysed.
U - Not detected
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X - Value not included in calculation of mean.

Table 4-7. Background Surface Soil Analytical Results
Fort McClellan, Alabama

Site ID		SS-BK-103	SS-BK-103	SS-BK-203	SS-BK-203	SS-BK-203	SS-BK-303	SS-BK-303
Field Sample Number		SAIC01	SAIC02	SAIC01	SAIC02	SAIC03	SAIC01	SAIC02
Site Type		SURF	SURF	SURF	SURF	SURF	SURF	SURF
Collection Date		5/10/95	1/30/96	5/11/95	1/27/96	1/27/96	5/17/95	1/28/96
Depth (ft)		0.5	0-1	0-1	0-1	0-1	0-1	0-1
METALS								
Parameter	Units							
Aluminum	ug/g	**13700**	**7900**	**7080**	**8030**	**6630**	**7960**	**7720**
Antimony	ug/g	7.14 U	7.14 U	7.14 U	7.14 U	7.14 U	7.14 U	7.14 U
Arsenic	ug/g	**15**	**6.56**	**3.32**	**3.6**	**2.46**	**2.42**	**3.76**
Barium	ug/g	**24.3**	**62.9**	**29.8**	**31.2**	**32.2**	**96.5**	**42**
Beryllium	ug/g	**0.5** UX	**0.5** UX	**0.5** UX	**0.5** UX	**0.5** UX	**0.5** UX	**0.5** UX
Cadmium	ug/g	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U
Calcium	ug/g	**215**	**704**	100 U	**1080**	**1060**	**809**	100 U
Chromium	ug/g	**48.6**	**18.7**	**14.1**	**30.4**	**32**	**7.75**	**22.2**
Cobalt	ug/g	1.42 U	**14.1**	**6.38**	**2.82**	**3.54**	**6.67**	**8.24**
Copper	ug/g	**9.47**	**4.36**	**4.92**	**7.21**	**7.6**	**5.6**	**9.21**
Cyanide	ug/g	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U
Hexavalent Chromium	ug/g	N/A	N/A	0.514 U	N/A	N/A	0.514 U	N/A
Iron	ug/g	**39600**	**12500**	**10300**	**20100**	**21600**	**7710**	**26000**
Lead	ug/g	**19.7**	**23.1**	**22**	**45.5**	**45.1**	**19.5**	**19.2**
Magnesium	ug/g	**246**	**295**	**189**	**362**	**330**	**296**	**225**
Manganese	ug/g	**273**	**1670**	**672**	**364**	**385**	**1140**	**699**
Mercury	ug/g	**0.0822**	0.05 U	0.05 U	**0.066**	**0.059**	0.05 U	0.05 U
Nickel	ug/g	**6.65**	**4.46**	**4.63**	**6.29**	**4.79**	**3.74**	**9.63**
Potassium	ug/g	**223**	**219**	**177**	**239**	**178**	**160**	**305**
Selenium	ug/g	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Silver	ug/g	0.589 U	0.589 U	0.589 U	0.589 U	**1.82**	0.589 U	0.589 U
Sodium	ug/g	**361**	**360**	**388**	**472**	**451**	**297**	**361**
Thallium	ug/g	6.62 U	6.62 U	6.62 U	6.62 U	6.62 U	6.62 U	6.62 U
Vanadium	ug/g	**87.2**	**27**	**20.8**	**46.8**	**47.8**	**16.8**	**38.9**
Zinc	ug/g	**17.9**	**11.2**	8.03 U	**48.6**	**46.3**	**15.1**	**22.8**

NA - Not analysed.
U - Not detected
J - Estimated value
X - Value not included in calculation of mean.

Table 4-8. Background Subsurface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BG-S01	BG-S02	BG-S02	BG-S03	BG-S04	BG-S05	BG-S06
Field Sample Number		SAIC02	SAIC02	SAIC02D	SAIC02	SAIC02	SAIC02	SAIC02
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		8/17/97	8/19/97	8/19/97	8/16/97	8/16/97	8/16/97	8/16/97
Depth (ft)		1-10	1-10	1-10	1-10	1-10	1-10	1-10
METALS								
Parameter	Units							
Aluminum	ug/g	**6410**	**2030**	**1690**	**2070**	**11500**	**5460**	**6500**
Antimony	ug/g	**0.616**	**0.435**	**0.457**	0.079 U	**0.082**	**0.151**	**0.301**
Arsenic	ug/g	**9.65** J	**27.3**	**38.3**	**1.07** J	**2.09** J	**2.71** J	**5.07** J
Barium	ug/g	**26.3**	**4.68**	**4.13**	**4.82**	**72.3**	**76**	**131**
Beryllium	ug/g	**0.285**	**0.356**	**0.446**	**0.041**	**0.726**	**0.748**	**1.39**
Cadmium	ug/g	**0.052** J	**0.049** J	**0.048** J	0.016 U	**0.054**	**0.02** J	**0.154**
Calcium	ug/g	**210**	59 U	56.6 U	59.2 U	**122**	**133**	**3650**
Chromium	ug/g	**29.5**	**11** J	**12.3** J	**6.8**	**11.7**	**10.3**	**24**
Cobalt	ug/g	**2.69**	**3.9**	**4.71**	**0.636**	**7.66**	**8.28**	**13.5**
Copper	ug/g	**6.19**	**8.9**	**10.7**	**1.67**	**3.51**	**9.54**	**12.5**
Cyanide	ug/g	0.591 U	0.513 U	0.518 U	0.505 U	0.54 U	0.523 U	0.529 U
Hexavalent Chromium	ug/g	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/g	**41800**	**22000**	**28600**	**4840**	**12600**	**19700**	**39600**
Lead	ug/g	**8.04**	**6.91** J	**7.98** J	**1.49**	**11.6**	**6.61**	**16.6**
Magnesium	ug/g	**137**	**90.6**	**115**	**35.3**	**294**	**393**	**2270**
Manganese	ug/g	**155**	**78.9** J	**80.2** J	**10.3**	**911**	**329**	**647**
Mercury	ug/g	**0.116**	0.025 U	0.023 U	0.023 U	**0.043**	0.025 U	0.022 U
Nickel	ug/g	**6.1**	**6.67**	**8.16**	1.58 U	**4.72**	**5.46**	**11.6**
Potassium	ug/g	81.6 U	78.7 U	75.4 U	78.9 U	**188**	**1450**	**831**
Selenium	ug/g	0.408 U	0.394 UJ	0.377 UJ	0.395 U	0.407 U	0.395 U	0.416 U
Silver	ug/g	**0.063**	0.016 U	**0.099**	0.016 U	**0.029**	0.016 U	**0.064**
Sodium	ug/g	**254**	**253**	**249**	**245**	**253**	**245**	**255**
Thallium	ug/g	**0.028**	0.01 U	0.01 U	0.009 U	**0.06**	**0.052**	**0.062**
Vanadium	ug/g	**63.5**	**37.1**	**46.2**	**10.5**	**14.5**	**10.3**	**20.6**
Zinc	ug/g	**16.1**	**15.5**	**20.9**	3.95 U	**15.4**	**17.5**	**38.2**

NA - Not analysed.
U - Not detected
J - Estimated value
X - Value not included in calculation of mean.

Table 4-8. Background Subsurface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BG-S07	BG-S07	BG-S08	BG-S09	BG-S10	BG-S11	BG-S12
Field Sample Number		SAIC02	SAIC02D	SAIC02	SAIC02	SAIC02	SAIC02	SAIC02
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		8/19/97	8/19/97	8/17/97	7/22/97	8/15/97	8/19/97	8/15/97
Depth (ft)		1-10	1-10	1-10	1-10	1-10	1-10	1-10
METALS								
Parameter	Units							
Aluminum	ug/g	7510	7110	3820	3550	13600	8400	11300
Antimony	ug/g	0.557	0.628	0.086 U	0.122	0.095 U	0.509	0.203 U
Arsenic	ug/g	15	16.7	2.06 J	1.79 J	2.95 J	7.92	5.16 J
Barium	ug/g	205	557	12.4	7.47	24.2	10.6	10.7
Beryllium	ug/g	1.46	2.03	0.23	0.051 U	0.259	0.449	0.123
Cadmium	ug/g	0.306 J	0.807	0.017 U	0.041	0.019 U	0.055	0.025 UJ
Calcium	ug/g	1160	1880	66.6	76 U	74	71 U	79.9 U
Chromium	ug/g	20.5 J	18.7 J	12.7 J	22.5 J	17.1	22 J	22.3
Cobalt	ug/g	11.7	15.4	0.325	0.233 U	2.19	2.16	0.844
Copper	ug/g	17.1	20.1	4.57	1.34	8.2	8.71	7.64
Cyanide	ug/g	0.583 U	0.587 U	0.487 U	0.595 U	0.55 U	0.514 U	0.555 U
Hexavalent Chromium	ug/g	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/g	47700	40900	23600	10300	20400	34500	25500
Lead	ug/g	16.2 J	18.4 J	2.25	0.962	6.33	12.1 J	8.54
Magnesium	ug/g	304	415	68.6	63.2	302	120	98.7
Manganese	ug/g	1130 J	3760 J	41.7	4.05 U	30.9	119 J	55
Mercury	ug/g	0.03 U	0.027 U	0.049	0.044 U	0.026	0.025 U	0.062
Nickel	ug/g	15.4	27.5	4.51	2.03 U	3.54	11.2	2.31
Potassium	ug/g	480	404	85.9 U	351	306	164	172
Selenium	ug/g	0.561 UJ	0.487 UJ	0.429 U	0.507 U	0.473 U	0.473 UJ	0.533 U
Silver	ug/g	0.102	0.057	0.017 U	0.02 U	0.021	0.019 U	0.338
Sodium	ug/g	349	369	274	340	277	296	311
Thallium	ug/g	0.013	0.012	0.01	0.021	0.065	0.022	0.038
Vanadium	ug/g	26.6	25.7	14.7	43.8	23.4	37.8	43.9
Zinc	ug/g	33.7	53	4.29 U	5.07 U	11.5	30.4	7.93

NA - Not analysed.
U - Not detected
J - Estimated value
X - Value not included in calculation of mean.

Table 4-8. Background Subsurface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BG-S13	BG-S14	BG-S15	BG-S16	BG-S18	BG-S18	BG-S19
Field Sample Number		SAIC02	SAIC02	SAIC02	SAIC02	SAIC02	SAIC02D	SAIC02
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		8/18/97	8/15/97	8/18/97	8/17/97	8/5/97	8/5/97	8/17/97
Depth (ft)		1-10	1-10	1-10	1-10	1-10	1-10	1-10
METALS								
Parameter	Units							
Aluminum	ug/g	**3460**	**3540**	**7480**	**6550**	**5960**	**5260**	**10400**
Antimony	ug/g	**0.121**	0.097 U	**0.742**	**0.274**	0.103 U	**0.338**	0.09 U
Arsenic	ug/g	**2.5**	**2.26** J	**8.55**	**4.3** J	**0.78** J	**13.5**	0.452 U
Barium	ug/g	**18.2**	**18.9**	**63.6**	**20.9**	**67.8** J	**49** J	**14.5**
Beryllium	ug/g	**0.118**	**0.086**	**0.384**	**0.489**	**0.407**	**0.089**	**0.191** J
Cadmium	ug/g	0.019 U	0.019 U	**0.054** J	0.015 U	0.021 U	0.032 U	0.018 U
Calcium	ug/g	**103**	**96**	**518**	56.5 U	**91.3**	**82.3**	67.8 U
Chromium	ug/g	**7.87** J	**14.2**	**20.7** J	**21**	**6.87** J	**5.55** J	**5.51** J
Cobalt	ug/g	**1.32**	**0.992**	**20.9**	**1.16**	**15** J	**14.6** J	**0.597**
Copper	ug/g	**1.58**	**2.19**	**12.9**	**3.45**	**5.16**	**4.81**	**2.14**
Cyanide	ug/g	0.525 U	0.578 U	0.556 U	0.531 U	0.538 U	0.551 U	0.57 U
Hexavalent Chromium	ug/g	N/A	N/A	0.11 U	0.11 U	0.12 U	0.12 U	N/A
Iron	ug/g	**4930**	**7590**	**29400**	**34100**	**14000**	**9370**	**8540**
Lead	ug/g	**3.22** J	**2.65**	**31.6**	**8.93**	**12.9** J	**7.44**	**7.2**
Magnesium	ug/g	**93.4**	**117**	**149**	**111**	**153**	**131**	**58.1**
Manganese	ug/g	**60.8** J	**43.9**	**832** J	**75.3**	**343**	**288**	**12.1** J
Mercury	ug/g	0.024 U	0.025 U	**0.022**	0.027 U	**0.059**	**0.067**	0.026 U
Nickel	ug/g	1.89 U	**2.49**	**4.37**	**4.72**	2.06 U	1.96 U	1.81 U
Potassium	ug/g	**177**	**134**	**328**	**555**	**519**	**468**	**555**
Selenium	ug/g	0.472 UJ	0.485 U	0.55 UJ	0.377 U	0.515 U	0.49 U	0.452 U
Silver	ug/g	0.019 U	**0.054**	0.022 U	**0.035**	**0.106**	**0.083**	**0.103** J
Sodium	ug/g	**257**	**286**	**390**	**247**	**537**	**583**	**267**
Thallium	ug/g	**0.009**	**0.03**	**0.034**	**0.028**	**0.182**	**0.177**	**0.018**
Vanadium	ug/g	**9.82**	**18.2**	**33.4**	**24.6**	**10.9**	**8.67**	**11.4**
Zinc	ug/g	4.72 U	4.85 U	**14.7**	**8.6**	**5.56**	4.9 U	4.52 U

NA - Not analysed.
U - Not detected
J - Estimated value
X - Value not included in calculation of mean.

Table 4-8. Background Subsurface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BG-S19	BG-S20	BG-S20	BG-S21	BG-S22	BG-S23	BG-S24
Field Sample Number		SAIC02D	SAIC02	SAIC02D	SAIC02	SAIC02	SAIC02	SAIC02
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		8/17/97	8/18/97	8/18/97	8/15/97	8/17/97	8/17/97	8/16/97
Depth (ft)		1-10	1-10	1-10	1-10	1-10	1-10	1-10
METALS								
Parameter	Units							
Aluminum	ug/g	8710	4350	5080	3330	5660	14700	6660
Antimony	ug/g	0.082 U	0.134	0.101 U	0.142 U	0.159	0.654	0.178
Arsenic	ug/g	0.41 U	3	2.53	3.24	2.31	3.8	2.65
Barium	ug/g	12.3	28.1	31.9	41.3	12.3	74.1	31.8
Beryllium	ug/g	0.24 J	0.321	0.336	0.536 J	0.21 J	1.16 J	0.211 J
Cadmium	ug/g	0.016 U	0.027	0.023	0.049 U	0.018 U	0.205 J	0.02
Calcium	ug/g	61.5 U	150	150	464	69 U	440	632
Chromium	ug/g	7.45 J	17.1 J	9.3 J	12.3 J	11.6 J	19.8 J	15 J
Cobalt	ug/g	0.833	2.32	3.29	5.02	0.927	34.8	3.36
Copper	ug/g	3.08	6.24	6.94	4.5	4.66	31.4	4.47
Cyanide	ug/g	0.561 U	0.503 U	0.582 U	0.521 U	0.532 U	0.515 U	0.552 U
Hexavalent Chromium	ug/g	N/A	0.12 U	N/A	N/A	N/A	N/A	N/A
Iron	ug/g	12700	15900	16700	14300	14100	34200	12600
Lead	ug/g	6.82	5.38 J	6.57 J	10.1	4.03	17	9.95
Magnesium	ug/g	57.5	94.2	135	243	98.5	5940	471
Manganese	ug/g	19.5 J	135 J	163 J	226 J	15.8 J	191 J	206 J
Mercury	ug/g	0.026 U	0.026 U	0.027 U	0.023 U	0.027	0.025 U	0.037
Nickel	ug/g	3.2	2.13 U	2.02 U	4.6	2.79	37.7	3.7
Potassium	ug/g	488	665	857	123	337	342	115
Selenium	ug/g	0.41 U	0.533 UJ	0.505 UJ	0.484 U	0.46 U	0.401 U	0.509 U
Silver	ug/g	0.037 J	0.021 U	0.02 U	0.107 J	0.032 J	0.016 U	0.034 J
Sodium	ug/g	231	308	329	302	341	441	271
Thallium	ug/g	0.014	0.034	0.039	0.093	0.056	0.054	0.043
Vanadium	ug/g	16.4	15	12.1	17.3	16	25.8	19.7
Zinc	ug/g	4.1 U	6.32	5.88	10.1	6.26	89.2	9.84

NA - Not analysed.
U - Not detected
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Table 4-8. Background Subsurface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BG-S24	BG-S25	BGP-S01	BGP-S02	BGP-S02	BGP-S03	BGP-S04
Field Sample Number		SAIC02D	SAIC02	SAIC02	SAIC02	SAIC02D	SAIC02	SAIC02
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		8/16/97	8/17/97	8/5/97	8/14/97	8/14/97	8/14/97	8/12/97
Depth (ft)		1-10	1-10	1-10	1-10	1-10	1-10	1-10
METALS								
Parameter	Units							
Aluminum	ug/g	7010	6260	4570	9540	10800	7840	5720
Antimony	ug/g	0.202	0.283	0.437	0.817	0.553	0.987	0.381
Arsenic	ug/g	2.83	7.22	8.92	19.7 J	19.1 J	31.5 J	22.1 J
Barium	ug/g	33.4	11.3	10.9 J	42.8	42.4	23.8	46.1
Beryllium	ug/g	0.246 J	0.107 J	0.213	0.254	0.249 J	0.246 J	0.389
Cadmium	ug/g	0.021 J	0.032 J	0.039	0.061 J	0.058	0.077	0.044
Calcium	ug/g	466	78.4	125	327	368	205	297
Chromium	ug/g	14.6 J	24.8 J	15.4 J	33.1	26.4	48.6	12.6
Cobalt	ug/g	3.33	1.82	0.801	8.94	8.68	5.17	34.2
Copper	ug/g	5.02	7.28	5.83	7.95	9.06	9.4	17
Cyanide	ug/g	0.531 U	0.539 U	0.587 U	0.624 U	0.591 U	0.605 U	0.576 U
Hexavalent Chromium	ug/g	N/A	N/A	0.12 U	N/A	N/A	N/A	N/A
Iron	ug/g	14600	27000	17200	34300	32500	48000	18500
Lead	ug/g	9.4	5.94	11.3	29.8	27.8	24.3	26.7
Magnesium	ug/g	341	67.7	132	151	180	140	198
Manganese	ug/g	193 J	61.6 J	54.4	1500	1450	806	2140
Mercury	ug/g	0.054	0.035	0.093	0.056	0.054	0.043	0.05
Nickel	ug/g	3.47	3.75	2.24	4.16	5.51	8.92	14.1
Potassium	ug/g	121	101 U	136	181	212	175	172
Selenium	ug/g	0.394 U	0.504 U	0.531 U	0.552 U	0.552 U	0.549 U	0.417 U
Silver	ug/g	0.016 U	0.062 J	0.242	0.134	0.023	0.661	0.017 U
Sodium	ug/g	235	265	643	203	343	336	270
Thallium	ug/g	0.04	0.03	0.235	0.086	0.096	0.053	0.103
Vanadium	ug/g	21.5	43.1	37.7	72.5	67.8	92.1	25.6
Zinc	ug/g	9.89	7.67	14.5	15	23.9	19.6	32.4

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Table 4-8. Background Subsurface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BGP-S04	BGP-S05	BGP-S06	BGP-S07	BGP-S08	BGP-S09	BGP-S10
Field Sample Number		SAIC02D	SAIC02	SAIC02	SAIC02	SAIC02	SAIC02	SAIC02
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		8/12/97	8/2/97	8/15/97	8/14/97	8/17/97	8/12/97	8/17/97
Depth (ft)		1-10	1-10	1-10	1-10	1-10	1-10	1-10
METALS								
Parameter	Units							
Aluminum	ug/g	**5320**	**1770**	**5910**	**7280**	**4280**	**3950**	**6050**
Antimony	ug/g	**0.392**	**0.232**	0.423 U	**0.368**	**0.467**	**0.347**	**0.248**
Arsenic	ug/g	**21.9** J	**1.87**	**14.4**	**16.2**	**16.8**	**15.4**	**14.1**
Barium	ug/g	**40.2**	**6.56** J	**20.4**	**24.2**	**33.7**	**10.7**	**10.1**
Beryllium	ug/g	**0.34** J	**0.072**	**0.098** J	**0.154** J	**0.233** J	0.053 UJ	**0.095** J
Cadmium	ug/g	**0.045**	0.021 U	0.041 U	**0.037** J	**0.022**	0.021 U	**0.032** J
Calcium	ug/g	**315**	**118**	**117**	**159**	**108**	**94.2**	76.5 U
Chromium	ug/g	**8.49**	**6.8** J	**23.1** J	**17.2** J	**16.9** J	**9.23** J	**54.7** J
Cobalt	ug/g	**36.8**	**1.05**	**7.77**	**2.43**	**74.4**	**0.256**	**1.34**
Copper	ug/g	**16.9**	**3.67**	**4.98**	**5.9**	**13.9**	**6.12**	**7.41**
Cyanide	ug/g	0.559 U	0.635 U	0.632 U	0.584 U	0.579 U	0.604 U	0.555 U
Hexavalent Chromium	ug/g	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/g	**18000**	**5640**	**18700**	**24500**	**14000**	**11100**	**20900**
Lead	ug/g	**29.7**	**3.16**	**23.4**	**12**	**19.7**	**3.04**	**4.63**
Magnesium	ug/g	**198**	**64.1**	**114**	**128**	**95.3**	**70.8**	**115**
Manganese	ug/g	**2060**	**49.6**	**719** J	**146** J	**1570** J	**10.8** J	**64** J
Mercury	ug/g	**0.055**	0.044 U	**0.056**	0.027 U	0.026 U	**0.026**	0.026 U
Nickel	ug/g	**12.2**	2.14 U	**3.27**	**2.43**	**9.34**	2.1 U	**5.31**
Potassium	ug/g	**188**	107 U	**124**	109 U	103 U	**107**	102 U
Selenium	ug/g	0.548 U	0.534 U	0.54 U	0.545 U	0.514 U	0.525 U	0.51 U
Silver	ug/g	**0.439**	**0.042**	**0.261** J	0.022 U	**0.37** J	**0.054** J	**0.09** J
Sodium	ug/g	**391**	**492**	**258**	**314**	**274**	**312**	**287**
Thallium	ug/g	**0.068**	**0.053**	**0.029**	**0.026**	**0.028**	**0.02**	**0.016**
Vanadium	ug/g	**24.6**	**13.3**	**38**	**44.4**	**27**	**22.8**	**25.9**
Zinc	ug/g	**31.2**	5.34 U	**11.4**	**9.92**	**11**	5.25 U	**8.92**

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Table 4-8. Background Subsurface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BGP-S11	BGP-S12	BGP-S13	BGP-S14	BGP-S15	BGP-S16	BGP-S16
Field Sample Number		SAIC02	SAIC02	SAIC02	SAIC02	SAIC02	SAIC02	SAIC02D
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		8/14/97	8/5/97	8/5/97	8/6/97	8/6/97	8/18/97	8/18/97
Depth (ft)		1-10	1-10	1-10	1-10	1-10	1-10	1-10
METALS								
Parameter	Units							
Aluminum	ug/g	**5140**	**5860**	**10600**	**8600**	**4340**	**8310**	**7380**
Antimony	ug/g	**0.32**	**0.427**	**0.331**	**0.358**	**0.759**	**0.367**	**0.735**
Arsenic	ug/g	**34.5**	**2.97**	**4.81**	**1.44**	**1.29**	**13.5**	**21.9**
Barium	ug/g	**14**	**15.5** J	**127** J	**43** J	**8.34** J	**16.7**	**14.5**
Beryllium	ug/g	**0.447** J	**0.727**	**0.744**	**0.172**	**1.08**	**0.162**	**0.146**
Cadmium	ug/g	**0.064** J	**0.29**	0.036 U	0.034 U	0.046 U	**0.04** J	**0.038** J
Calcium	ug/g	**81**	82 U	**796**	78.8 U	77.7 U	**122**	**93.9**
Chromium	ug/g	**41.1** J	**18.4** J	**15.1** J	**21.3** J	**17.1** J	**31.2** J	**54** J
Cobalt	ug/g	**4.26**	**1.47**	**4.8** J	**1.14**	**1.53**	**1.74**	**4.58**
Copper	ug/g	**5.95**	**5.2**	**21.8**	**23.7**	**4.04**	**5.7**	**4.89**
Cyanide	ug/g	0.569 U	0.557 U	0.625 U	0.586 U	0.607 U	0.554 U	0.538 U
Hexavalent Chromium	ug/g	N/A	0.16 U	0.12 U	N/A	N/A	0.13 U	0.12 U
Iron	ug/g	**31900**	**25600**	**23400**	**28000**	**16600**	**19100**	**30800**
Lead	ug/g	**8.06**	**17.7**	**12.4**	**5.76**	**18.8**	**12** J	**19.6** J
Magnesium	ug/g	**133**	**92.5**	**3420**	**762**	**82.4**	**145**	**102**
Manganese	ug/g	**178** J	**198**	**77**	**19.5**	**18.6**	**159** J	**309** J
Mercury	ug/g	0.024 U	**0.094**	**0.069**	**0.046**	**0.057**	**0.039**	**0.039**
Nickel	ug/g	**7.22**	2.19 U	**20.8**	**7.93**	**2.6**	**2.62**	1.84 U
Potassium	ug/g	**134**	**115**	**332**	**420**	**132**	**147**	**97.9**
Selenium	ug/g	0.421 U	0.547 U	**0.551**	0.526 U	0.518 U	0.492 UJ	0.461 UJ
Silver	ug/g	**0.233** J	**0.056**	**0.079**	**0.054**	**0.068**	0.02 U	0.018 U
Sodium	ug/g	**280**	**507**	**560**	**631**	**474**	**356**	**298**
Thallium	ug/g	**0.033**	**0.211**	**0.252**	**0.081**	**0.309**	**0.045**	**0.043**
Vanadium	ug/g	**40.5**	**59.7**	**29.5**	**18.1**	**23.8**	**41.6**	**67.2**
Zinc	ug/g	**32.4**	5.47 U	**50.1**	**39.5**	**7.95**	**12.5**	**10.2**

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Table 4-8. Background Subsurface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BGP-S17	BGP-S18	BGP-S19	BGP-S20	BGP-S21	BGP-S22	BGP-S24
Field Sample Number		SAIC02	SAIC02	SAIC02	SAIC02	SAIC02	SAIC02	SAIC02
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		8/12/97	8/3/97	8/6/97	8/14/97	8/4/97	8/17/97	8/6/97
Depth (ft)		1-10	1-10	1-10	1-10	1-10	1-10	1-10
METALS								
Parameter	Units							
Aluminum	ug/g	**6120**	**5010**	**8410**	**6560**	**3480**	**6730**	**3640**
Antimony	ug/g	**0.382**	**0.153**	**0.12**	**0.669**	**0.613**	**0.369**	**0.794**
Arsenic	ug/g	**4.88**	**5.27** J	**1.19**	**32.4**	**3.97**	**28.5**	**5.3**
Barium	ug/g	**97.8**	**34.9** J	**32.2** J	**7.43**	**56.1** J	**18.9**	**15.5** J
Beryllium	ug/g	**0.636**	**0.561**	**0.478**	**0.062** J	**0.184**	**0.112** J	**0.264**
Cadmium	ug/g	**0.142** J	**0.072**	0.057 U	**0.036** J	0.03 U	**0.042** J	0.047 U
Calcium	ug/g	**2270**	**571**	**70.5**	82.7 U	**1710**	**113**	**173**
Chromium	ug/g	**15.4**	**8.53** J	**14.1** J	**27.2** J	**7.26** J	**24.5** J	**9.35** J
Cobalt	ug/g	**3.32** J	**4.46** J	**0.635**	**0.619**	**4.58** J	**0.952**	**10.3** J
Copper	ug/g	**7.08**	**5.86**	**23.7**	**8.72**	**3.48**	**6.59**	**8.48**
Cyanide	ug/g	0.571 U	0.623 U	0.639 U	0.546 U	0.587 U	0.568 U	0.585 U
Hexavalent Chromium	ug/g	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron	ug/g	**18100**	**10900**	**23800**	**26200**	**9830**	**25800**	**13900**
Lead	ug/g	**16**	**9.83** J	**12.5**	**8.29**	**9.75**	**6.74**	**13.1**
Magnesium	ug/g	**450**	**391**	**426**	**86.8**	**120**	**114**	**144**
Manganese	ug/g	**64.6** J	**180**	**7.29**	**12.8** J	**239**	**51.6** J	**184**
Mercury	ug/g	**0.031**	0.041 U	**0.059**	0.026 U	0.044 U	**0.034**	**0.097**
Nickel	ug/g	**5.54**	**2.79**	**3.39**	**4.02**	**2.68**	**3.33**	**5.99**
Potassium	ug/g	**220**	**132**	**318**	110 U	**122**	101 U	**183**
Selenium	ug/g	0.571 U	0.574 U	0.436 U	0.552 U	0.402 U	0.506 U	0.535 U
Silver	ug/g	**0.125** J	**0.161**	**0.043**	**0.149** J	**0.039**	0.02 U	**0.047**
Sodium	ug/g	**374**	**588**	**481**	**336**	**395**	**302**	**524**
Thallium	ug/g	**0.068**	**0.175**	**0.052**	**0.025**	**0.156**	**0.025**	**0.361**
Vanadium	ug/g	**28.2**	**21.7**	**24.6**	**51**	**12.1**	**53**	**20.9**
Zinc	ug/g	**27.1**	**14.2**	**24.7**	**10.2**	**8.63**	**7.79**	**22.4**

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Table 4-8. Background Subsurface Soil Analytical Results
Fort McClellan, Alabama

Site ID		BGP-S25	BK-S01	SB-BK-101	SB-BK-102	SB-BK-201	SB-BK-202	SB-BK-301
Field Sample Number		SAIC02	BK-S0102	SAIC02	SAIC02	SAIC02	SAIC02	SAIC02
Site Type		BORE	BORE	BORE	BORE	BORE	BORE	BORE
Collection Date		8/5/97	4/13/92	5/10/95	5/10/95	5/11/95	5/11/95	5/17/95
Depth (ft)		1-10	5	7	7	7	7	7
METALS								
Parameter	Units							
Aluminum	ug/g	**9460**	**24600**	**11400**	**5430**	**5720**	**6870**	**7750**
Antimony	ug/g	**0.461**	N/A	7.14 U	7.14 U	7.14 U	7.14 U	7.14 U
Arsenic	ug/g	**6.59**	**3.26**	**7.76**	**3.07**	2.54 U	**0.774**	**0.881**
Barium	ug/g	**154** J	**259**	**4500**	**9.15**	**8.8**	**8.76**	**25.5**
Beryllium	ug/g	**0.882**	**1.88**	**0.694**	0.5 UX	0.5 UX	0.5 UX	N/A
Cadmium	ug/g	0.129 U	1.2 U	**1.28**	0.7 U	0.7 U	0.7 U	0.7 U
Calcium	ug/g	**219**	**375**	200 U	100 U	100 U	100 U	**168**
Chromium	ug/g	**21.4** J	**20.2**	**32.9**	**27.8**	6.02 U	**34.2**	**26.9**
Cobalt	ug/g	**30.8** J	**14**	**96.2**	1.42 U	1.42 U	1.42 U	**2.29**
Copper	ug/g	**18**	**9.95**	**60.9**	**10.7**	**16.6**	**22.8**	**6.88**
Cyanide	ug/g	0.634 U	N/A	0.92 U	0.92 U	0.92 U	0.92 U	0.92 U
Hexavalent Chromium	ug/g	0.12 U	N/A	N/A	N/A	0.514 U	0.514 U	0.514 U
Iron	ug/g	**30600**	**33700**	**36700**	**30200**	**24900**	**30000**	**22900**
Lead	ug/g	**16.9**	**14.8**	**500**	**8.6**	**9.8**	**8.2**	**10**
Magnesium	ug/g	**1510**	**1240**	200 U	100 U	100 U	100 U	**276**
Manganese	ug/g	**819**	**738**	**19000**	**104**	**52.1**	**58.4**	**47.1**
Mercury	ug/g	0.042 U	0.05 U	0.05 U	**0.0588**	0.05 U	0.05 U	0.05 U
Nickel	ug/g	**33.4**	**8.93**	**29.2**	**2.39**	**2.92**	**5.96**	**2.68**
Potassium	ug/g	**433**	**6150**	**331**	**272**	**294**	**353**	**293**
Selenium	ug/g	0.578 U	0.449 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Silver	ug/g	**0.161**	0.803 U	1.2 U	0.589 U	0.589 U	0.589 U	0.589 U
Sodium	ug/g	**583**	38.7 U	**348**	**446**	**380**	**419**	**370**
Thallium	ug/g	**0.17**	N/A	**23.5**	6.62 U	6.62 U	6.62 U	6.62 U
Vanadium	ug/g	**21.8**	**22.2**	**98.6**	**66.1**	**51**	**59.8**	**35.4**
Zinc	ug/g	**72.3**	**31.6**	**56.1**	8.03 U	**13.7**	**23.8**	8.03 U

NA - Not analysed.
U - Not detected
J - Estimated value
X - Value not included in calculation of mean.

Table 4-8. Background Subsurface Soil Analytical Results
Fort McClellan, Alabama

Site ID	SB-BK-302
Field Sample Number	SAIC02
Site Type	BORE
Collection Date	5/17/95
Depth (ft)	7

METALS

Parameter	Units	
Aluminum	ug/g	**5110**
Antimony	ug/g	7.14 U
Arsenic	ug/g	0.25 U
Barium	ug/g	**20.9**
Beryllium	ug/g	0.5 UX
Cadmium	ug/g	0.7 U
Calcium	ug/g	100 U
Chromium	ug/g	**9.71**
Cobalt	ug/g	**5.11**
Copper	ug/g	**6.14**
Cyanide	ug/g	0.92 U
Hexavalent Chromium	ug/g	0.514 U
Iron	ug/g	**15800**
Lead	ug/g	**5.6**
Magnesium	ug/g	**222**
Manganese	ug/g	**68.1**
Mercury	ug/g	0.05 U
Nickel	ug/g	1.71 U
Potassium	ug/g	**273**
Selenium	ug/g	0.25 U
Silver	ug/g	0.589 U
Sodium	ug/g	**413**
Thallium	ug/g	6.62 U
Vanadium	ug/g	**15.5**
Zinc	ug/g	8.03 U

NA - Not analysed.
U - Not detected
J - Estimated value
X - Value not included in calculation of mean.

Table 4-9. Summary Statistics for Background Groundwater
Fort McClellan, Alabama

Run Time: 4:50:27 PM
Run Date: 7/9/98
Exposure Unit: WD

Parameter	Units	Total Number of Samples	Total Number of Detects	Frequency of Detection	NonDetects Min CRL	NonDetects Max CRL	Detects Minimum	Detects Maximum	Arithmetic Mean[a]	Standard Deviation[a]	Distribution[b]	95% UCL of Arith. Mean[a]	Exposure Point Concentration[c]		2x Arithmetic Mean[a]
Alkalinity-phenolphthalein	µg/L	33	2	6%	5,000	5,000	104,000	132,000	9,500.00	28,204	Lognormal	9,763	9,763		19,000
Aluminum	µg/L	57	34	60%	50	141	59	9,600	1,167.66	2,030	Lognormal	19,988	9,600	#	2,335
Antimony	µg/L	57	2	4%	0.60	10.0	0.70	0.80	1.60	1.7	Lognormal	4.4	0.80	#	3.191
Arsenic	µg/L	57	10	18%	1.1	2.5	1.5	224	8.88	41	Lognormal	6.1	6.1		17.764
Barium	µg/L	57	53	93%	6.5	18	5.5	401	63.73	88	Lognormal	144	144		127.458
Beryllium	µg/L	57	15	26%	0.20	5.0	0.20	2.4	0.62	0.74	Lognormal	1.8	1.8		1.247
Bicarbonate	µg/L	33	22	67%	5,000	172,000	9,000	392,000	100,818.18	93,836	Lognormal	831,264	392,000	#	201,636
Bromide	µg/L	33	4	12%	200	200	278	715	138.03	121	Lognormal	171	171		276.06
Cadmium	µg/L	57	22	39%	0.100	5.0	0.100	5.3	1.26	1.2	Lognormal	10	5.3	#	2.51
Calcium	µg/L	57	48	84%	231	33,900	217	452,000	28,246.44	60,264	Lognormal	580,060	452,000	#	56,493
Chloride	µg/L	33	24	73%	923	2,640	1,080	11,000	2,446.06	2,363	Lognormal	4,347	4,347		4,892
Cobalt	µg/L	57	3	5%	20	25	20	25	11.68	2.8	Lognormal	13	13		23.36
Copper	µg/L	57	10	18%	5.0	19	5.3	235	12.74	32	Lognormal	21	21		25.48
Fluoride	µg/L	33	6	18%	200	200	202	646	146.24	124	Lognormal	185	185		292.48
Iron	µg/L	57	44	77%	45	78	2.5	25,800	3,520.25	5,364	Lognormal	590,286	25,800	#	7,040
Lead	µg/L	57	25	44%	0.60	4.5	0.60	27	4.00	6.1	Lognormal	13	13		7.998
Magnesium	µg/L	57	47	82%	100	18,400	176	149,000	10,640.88	19,972	Lognormal	146,372	146,372		21,282
Manganese	µg/L	57	42	74%	5.0	9.7	9.8	5,820	290.25	809	Lognormal	7,221	5,820	#	580.5
Nitrate,Nitrite	µg/L	33	4	12%	10.0	1,110	430	771	141.26	219	Lognormal	1,192	771	#	282.5
Potassium	µg/L	57	43	75%	270	1,240	1.0	68,500	3,597.54	9,508	Lognormal	18,602	18,602		7,195
Silver	µg/L	57	1	2%	0.100	10.0	0.40	0.40	2.00	2.4	Lognormal	141	0.40	#	4.00
Sodium	µg/L	57	52	91%	892	1,180	555	64,700	7,423.18	11,765	Lognormal	23,173	23,173		14,846
Sulfate	µg/L	33	25	76%	1000	3,680	1,650	1.4E+06	51,628.33	242,827	Lognormal	88,195	88,195		103,257
Thallium	µg/L	54	7	13%	0.100	10.0	0.100	5.3	0.73	1.2	Lognormal	5.3	5.3		1.455
Total Alkalinity	µg/L	33	22	67%	5,000	172,000	9,000	392,000	103,424.24	93,707	Lognormal	880,230	392,000	#	206,848
Total Phosphorous	µg/L	33	21	64%	10.0	10.0	10.0	282	44.30	70	Lognormal	140	140		88.594
Vanadium	µg/L	57	2	4%	10.0	28	11	11	8.49	4.3	Lognormal	11	11		16.975
Zinc	µg/L	57	25	44%	18	30	22	1,160	109.98	249	Lognormal	273	273		219.97

[a]Results of duplicate analyses were averaged and nondetects were treated as one-half the detection limit in the calculation of the arithmetic mean, standard deviation, and 95% UCL.

[b]For the calculation of exposure point concentrations (EPCs):

If fewer than four samples are available, or the standard deviation of the data set is zero, the distribution is undetermined.

If the probability plot correlation coefficient of the untransformed data is > or = to the critical value, the distribution is normal.

In all other cases, the distribution assumed for the EPC calculation was lognormal.

[c]The exposure point concentration (EPC) is the 95% upper confidence (UCL) of the arithmetic mean, unless the 95% UCL exceeds the maximum detected value. If the latter is true, the maximum detected value is substituted as the EPC(denoted by a "#" next to the EPC).

- - Parameter detected in all samples.

Table 4-10. Summary Statistics for Background Surface Water
Fort McClellan, Alabama

Run Time: 5:11:42 PM
Run Date: 7/9/98
Exposure Unit: WS

Parameter	Units	Total Number of Samples	Total Number of Detects	Frequency of Detection	NonDetects Min CRL	NonDetects Max CRL	Detects Minimum	Detects Maximum	Arithmetic Mean[a]	Standard Deviation[a]	Distribution[b]	95% UCL of Arith. Mean[a]	Exposure Point Concentration[c]		2x Arithmetic Mean[a]
Aluminum	µg/L	67	57	85%	50	141	65	47,800	2,629.59	7,921	Lognormal	17,831	17,831		5,259
Arsenic	µg/L	65	9	14%	1.1	2.4	1.4	11	1.08	1.5	Lognormal	1.5	1.5		2.17
Barium	µg/L	67	67	100%	- -	- -	11	200	37.68	35	Lognormal	55	55		75.36
Beryllium	µg/L	56	9	16%	0.20	0.20	0.20	3.2	0.19	0.43	Lognormal	0.22	0.22		0.39
Bicarbonate	µg/L	56	40	71%	5,000	5,000	6,000	172,000	53,178.57	57,480	Lognormal	449,171	172,000	#	106,357
Cadmium	µg/L	67	10	15%	0.20	6.8	0.20	1.5	0.57	0.91	Lognormal	1.4	1.4		1.13
Calcium	µg/L	67	67	100%	- -	- -	179	64,100	12,583.19	13,701	Lognormal	218,721	64,100	#	25,166
Chloride	µg/L	56	56	100%	- -	- -	467	10,100	1,943.05	1,815	Lognormal	2,656	2,656		3,886
Chromium	µg/L	64	1	2%	6.0	17	14	14	5.56	1.7	Undetermined	6.3	6.3		11.13
Copper	µg/L	56	8	14%	5.0	8.1	7.1	72	6.35	13	Lognormal	8.1	8.1		12.70
Fluoride	µg/L	56	6	11%	100	200	128	579	107.86	85	Lognormal	139	139		215.71
Iron	µg/L	67	64	96%	45	78	74	232,000	9,814.08	37,961	Lognormal	46,205	46,205		19,628
Lead	µg/L	66	34	52%	0.60	4.5	0.60	47	4.33	8.3	Lognormal	19	19		8.67
Magnesium	µg/L	67	67	100%	- -	- -	171	24,400	5,486.16	5,916	Lognormal	34,551	24,400	#	10,972
Manganese	µg/L	67	64	96%	5.0	9.7	5.5	6,060	282.42	840	Lognormal	1,153	1,153		564.85
Nickel	µg/L	67	3	4%	15	34	40	70	11.23	11	Lognormal	14	14		22.46
Nitrate,Nitrite	µg/L	56	44	79%	10.0	10.0	11	838	106.09	181	Lognormal	507	507		212.18
Potassium	µg/L	67	61	91%	1,240	1,240	330	7,120	1,281.85	1,157	Lognormal	1,940	1,940		2,564
Sodium	µg/L	66	66	100%	- -	- -	296	15,200	1,718.44	2,043	Lognormal	2,401	2,401		3,437
Sulfate	µg/L	56	56	100%	- -	- -	1,060	62,400	4,313.57	8,203	Lognormal	5,784	5,784		8,627
Thallium	µg/L	59	1	2%	0.100	125	4.2	4.2	1.24	8.1	Undetermined	0.56	0.56		2.49
Total Alkalinity	µg/L	56	40	71%	5,000	5,000	6,000	172,000	53,178.57	57,480	Lognormal	449,171	172,000	#	106,357
Total Phosphorous	µg/L	56	24	43%	10.0	14	11	655	38.82	99	Lognormal	87	87		77.64
Vanadium	µg/L	63	5	8%	10.0	28	13	36	7.60	5.7	Lognormal	9.8	9.8		15.21
Zinc	µg/L	66	6	9%	18	30	27	182	20.17	26	Lognormal	24	24		40.35

[a]Results of duplicate analyses were averaged and nondetects were treated as one-half the detection limit in the calculation of the arithmetic mean, standard deviation, and 95% UCL.

[b]For the calculation of exposure point concentrations (EPCs):

If fewer than four samples are available, or the standard deviation of the data set is zero, the distribution is undetermined.

If the probability plot correlation coefficient of the untransformed data is > or = to the critical value, the distribution is normal.

In all other cases, the distribution assumed for the EPC calculation was lognormal.

[c]The exposure point concentration (EPC) is the 95% upper confidence (UCL) of the arithmetic mean, unless the 95% UCL exceeds the maximum detected value. If the latter is true, the maximum detected value is substituted as the EPC(denoted by a "#" next to the EPC).

- - Parameter detected in all samples.

Table 4-11. Summary Statistics for Background Sediment
Fort McClellan, Alabama

Run Time: 5:01:01 PM
Run Date: 7/9/98
Exposure Unit: DS

Parameter	Units	Total Number of Samples	Total Number of Detects	Frequency of Detection	NonDetects Min CRL	NonDetects Max CRL	Detects Minimum	Detects Maximum	Arithmetic Mean[a]	Standard Deviation[a]	Distribution[b]	95% UCL of Arith. Mean[a]	Exposure Point Concentration[c]		2x Arithmetic Mean[a]
Aluminum	ug/g	65	65	100%	- -	- -	657	17,400	4,296.32	3,138	Lognormal	6,591	6,590.77		8,593
Antimony	ug/g	59	40	68%	0.11	1.00	0.12	1.2	0.36	0.25	Lognormal	0.77	0.77		0.73
Arsenic	ug/g	58	58	100%	- -	- -	0.21	20	5.67	5.0	Lognormal	13	13.34		11.33
Barium	ug/g	65	65	100%	- -	- -	5.4	272	49.46	44	Lognormal	86	85.64		98.91
Beryllium	ug/g	55	55	100%	- -	- -	0.069	1.2	0.49	0.30	Lognormal	0.83	0.83		0.97
Cadmium	ug/g	65	47	72%	0.020	1.2	0.020	2.4	0.22	0.39	Lognormal	0.67	0.67		0.43
Calcium	ug/g	65	61	94%	60	99	88	2,810	555.76	557	Lognormal	1,370	1,369.94		1,111.51
Chromium	ug/g	65	65	100%	- -	- -	1.1	63	15.57	14	Lognormal	30	29.80		31.15
Cobalt	ug/g	64	59	92%	0.24	2.5	0.40	22	5.51	4.5	Lognormal	15	14.80		11.01
Copper	ug/g	61	60	98%	2.8	2.8	0.73	59	8.56	8.8	Lognormal	16	15.75		17.12
Iron	ug/g	65	65	100%	- -	- -	683	57,500	17,633.26	12,838	Lognormal	36,392	36,391.61		35,267
Lead	ug/g	62	61	98%	7.4	7.4	1.7	110	18.91	20	Lognormal	35	35.40		37.82
Magnesium	ug/g	65	65	100%	- -	- -	30	3,270	452.97	686	Lognormal	952	952.13		905.94
Manganese	ug/g	64	62	97%	4.2	5.0	8.7	2,050	356.15	385	Lognormal	1,735	1,735.37		712.31
Mercury	ug/g	65	37	57%	0.024	0.061	0.047	0.28	0.06	0.042	Lognormal	0.087	0.09		0.11
Nickel	ug/g	65	43	66%	2.1	5.3	2.4	33	6.51	6.9	Lognormal	14	14.02		13.02
Potassium	ug/g	65	46	71%	100	151	118	4,810	506.74	842	Lognormal	1,273	1,272.69		1,013.48
Selenium	ug/g	65	4	6%	0.25	1.2	0.72	1.9	0.36	0.29	Lognormal	0.44	0.44		0.72
Silver	ug/g	65	37	57%	0.018	0.80	0.021	1.1	0.16	0.21	Lognormal	0.73	0.73		0.32
Sodium	ug/g	65	57	88%	39	60	173	738	346.14	152	Lognormal	942	738.00	#	692.29
Thallium	ug/g	56	56	100%	- -	- -	0.012	0.22	0.06	0.047	Lognormal	0.098	0.10		0.13
Vanadium	ug/g	65	65	100%	- -	- -	2.6	67	20.44	13	Lognormal	34	33.66		40.87
Zinc	ug/g	65	58	89%	5.3	6.9	6.0	111	26.37	24	Lognormal	56	55.67		52.74

[a]Results of duplicate analyses were averaged and nondetects were treated as one-half the detection limit in the calculation of the arithmetic mean, standard deviation, and 95% UCL.

[b]For the calculation of exposure point concentrations (EPCs):

If fewer than four samples are available, or the standard deviation of the data set is zero, the distribution is undetermined.

If the probability plot correlation coefficient of the untransformed data is > or = to the critical value, the distribution is normal.

In all other cases, the distribution assumed for the EPC calculation was lognormal.

[c]The exposure point concentration (EPC) is the 95% upper confidence (UCL) of the arithmetic mean, unless the 95% UCL exceeds the maximum detected value.

If the latter is true, the maximum detected value is substituted as the EPC(denoted by a "#" next to the EPC).

- - Parameter detected in all samples.

Table 4-12. Summary Statistics for Surface Soil (0 -1 BLS)
Fort McClellan, Alabama

Run Time: 8:18:07 AM
Run Date: 7/10/98
Exposure Unit: SS

Parameter	Units	Total Number of Samples	Total Number of Detects	Frequency of Detection	NonDetects Min CRL	NonDetects Max CRL	Detects Minimum	Detects Maximum	Arithmetic Mean[a]	Standard Deviation[a]	Distribution[b]	95% UCL of Arith. Mean[a]	Exposure Point Concentration[c]		2x Arithmetic Mean[a]
Aluminum	ug/g	70	70	100%	- -	- -	2.400	39,900	8,153.00	6,095	Lognormal	11,187	11,187		16,306
Antimony	ug/g	69	47	68%	0.082	7.1	0.11	2.6	0.99	1.3	Lognormal	3.4	2.6	#	1.99
Arsenic	ug/g	66	66	100%	- -	- -	0.82	49	6.86	8.0	Lognormal	13	13		13.73
Barium	ug/g	70	70	100%	- -	- -	11	288	61.97	54	Lognormal	99	99		123.94
Beryllium	ug/g	54	54	100%	- -	- -	0.062	0.87	0.40	0.22	Lognormal	0.61	0.61		0.80
Cadmium	ug/g	70	45	64%	0.016	1.2	0.024	0.21	0.14	0.16	Lognormal	0.36	0.21	#	0.29
Calcium	ug/g	70	66	94%	75	100	63	17,900	861.37	2,265	Lognormal	1,942	1,942		1,723
Chromium	ug/g	70	70	100%	- -	- -	2.0	134	18.52	20	Lognormal	31	31		37.04
Cobalt	ug/g	70	68	97%	1.4	1.4	0.39	71	7.57	12	Lognormal	18	18		15.15
Copper	ug/g	70	69	99%	0.50	0.50	1.3	24	6.36	4.4	Lognormal	11	11		12.71
Iron	ug/g	70	70	100%	- -	- -	2,510	56,300	17,076.86	11,577	Lognormal	27,000	27,000		34,154
Lead	ug/g	70	70	100%	- -	- -	2.9	83	20.02	15	Lognormal	33	33		40.05
Magnesium	ug/g	70	70	100%	- -	- -	60	9,600	516.49	1,266	Lognormal	768	768		1,033
Manganese	ug/g	70	70	100%	- -	- -	8.0	6,850	789.46	1,192	Lognormal	3,183	3,183		1,579
Mercury	ug/g	70	23	33%	0.023	0.050	0.031	0.32	0.04	0.046	Lognormal	0.058	0.058		0.08
Nickel	ug/g	70	56	80%	1.6	2.3	1.8	22	5.17	4.2	Lognormal	9.7	9.7		10.33
Potassium	ug/g	70	60	86%	82	116	104	6,010	399.88	946	Lognormal	607	607		799.76
Selenium	ug/g	70	1	1%	0.25	0.58	1.3	1.3	0.24	0.14	Lognormal	0.29	0.29		0.48
Silver	ug/g	70	42	60%	0.016	0.80	0.019	1.9	0.18	0.34	Lognormal	0.70	0.70		0.36
Sodium	ug/g	70	66	94%	39	39	76	563	317.14	98	Lognormal	562	562		634.28
Thallium	ug/g	68	55	81%	6.6	6.6	0.015	34	1.71	5.9	Lognormal	12	12		3.43
Vanadium	ug/g	70	70	100%	- -	- -	4.7	158	29.42	26	Lognormal	48	48		58.84
Zinc	ug/g	70	64	91%	4.9	11	4.6	209	20.32	26	Lognormal	35	35		40.64

[a]Results of duplicate analyses were averaged and nondetects were treated as one-half the detection limit in the calculation of the arithmetic mean, standard deviation, and 95% UCL.

[b]For the calculation of exposure point concentrations (EPCs):

If fewer than four samples are available, or the standard deviation of the data set is zero, the distribution is undetermined.

If the probability plot correlation coefficient of the untransformed data is > or = to the critical value, the distribution is normal.

In all other cases, the distribution assumed for the EPC calculation was lognormal.

[c]The exposure point concentration (EPC) is the 95% upper confidence (UCL) of the arithmetic mean, unless the 95% UCL exceeds the maximum detected value. If the latter is true, the maximum detected value is substituted as the EPC(denoted by a "#" next to the EPC).

- - Parameter detected in all samples.

Table 4-13. Summary Statistics for Subsurface Soil (>1-10 feet BLS)
Fort McClellan, Alabama

Run Time: 8:18:07 AM
Run Date: 7/10/98
Exposure Unit: SD

Parameter	Units	Total Number of Samples	Total Number of Detects	Frequency of Detection	NonDetects Min CRL	NonDetects Max CRL	Detects Minimum	Detects Maximum	Arithmetic Mean[a]	Standard Deviation[a]	Distribution[b]	95% UCL of Arith. Mean[a]	Exposure Point Concentration[c]		2x Arithmetic Mean[a]
Aluminum	ug/g	64	64	100%	- -	- -	1,690	24,600	6,795.47	3,552	Lognormal	9,068	9,068		13,591
Antimony	ug/g	63	46	73%	0.079	7.1	0.082	0.99	0.65	0.98	Lognormal	1.8	0.99	#	1.31
Arsenic	ug/g	64	61	95%	0.25	0.45	0.77	38	9.15	9.7	Lognormal	36	36		18.30
Barium	ug/g	64	64	100%	- -	- -	4.1	4,500	116.81	562	Lognormal	161	161		233.62
Beryllium	ug/g	59	57	97%	0.051	0.053	0.041	2.0	0.43	0.43	Lognormal	0.94	0.94		0.86
Cadmium	ug/g	64	35	55%	0.015	1.2	0.020	1.3	0.11	0.21	Lognormal	0.30	0.30		0.22
Calcium	ug/g	64	44	69%	57	200	67	3,650	318.58	606	Lognormal	772	772		637.17
Chromium	ug/g	64	64	100%	- -	- -	5.5	55	19.13	11	Lognormal	27	27		38.25
Cobalt	ug/g	64	60	94%	0.23	1.4	0.26	96	8.77	16	Lognormal	34	34		17.54
Copper	ug/g	64	64	100%	- -	- -	1.3	61	9.72	9.1	Lognormal	16	16		19.43
Iron	ug/g	64	64	100%	- -	- -	4,840	48,000	22,408.44	10,436	Normal	24,586	24,586		44,817
Lead	ug/g	64	64	100%	- -	- -	0.96	500	19.27	61	Lognormal	27	27		38.53
Magnesium	ug/g	64	60	94%	100	200	35	5,940	383.12	885	Lognormal	638	638		766.24
Manganese	ug/g	64	63	98%	4.1	4.1	7.3	19,000	677.67	2,417	Lognormal	3,864	3,864		1,355
Mercury	ug/g	64	31	48%	0.022	0.050	0.022	0.12	0.03	0.025	Lognormal	0.053	0.053		0.07
Nickel	ug/g	64	51	80%	1.6	2.2	2.2	38	6.45	7.8	Lognormal	13	13		12.89
Potassium	ug/g	64	52	81%	75	110	98	6,150	355.37	774	Lognormal	660	660		710.74
Selenium	ug/g	64	1	2%	0.25	0.58	0.55	0.55	0.24	0.060	Lognormal	0.27	0.27		0.47
Silver	ug/g	64	40	63%	0.016	1.2	0.021	0.66	0.12	0.15	Lognormal	0.47	0.47		0.24
Sodium	ug/g	64	63	98%	39	39	203	643	351.05	118	Lognormal	471	471		702.10
Thallium	ug/g	63	55	87%	0.0090	6.6	0.0090	24	0.70	3.0	Lognormal	2.0	2.0		1.40
Vanadium	ug/g	64	64	100%	- -	- -	8.7	99	32.45	20	Lognormal	47	47		64.89
Zinc	ug/g	64	50	78%	4.0	8.0	5.6	89	17.43	17	Lognormal	39	39		34.86

[a]Results of duplicate analyses were averaged and nondetects were treated as one-half the detection limit in the calculation of the arithmetic mean, standard deviation, and 95% UCL.

[b]For the calculation of exposure point concentrations (EPCs):

If fewer than four samples are available, or the standard deviation of the data set is zero, the distribution is undetermined.

If the probability plot correlation coefficient of the untransformed data is > or = to the critical value, the distribution is normal.

In all other cases, the distribution assumed for the EPC calculation was lognormal.

[c]The exposure point concentration (EPC) is the 95% upper confidence (UCL) of the arithmetic mean, unless the 95% UCL exceeds the maximum detected value.

If the latter is true, the maximum detected value is substituted as the EPC(denoted by a "#" next to the EPC).

- - Parameter detected in all samples.

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5. CONCLUSIONS

Background sampling has been conducted for groundwater, surface water, sediment and soil on the Main Post and Pelham Range at Fort McClellan, Alabama. Summary statistics for each sampled medium were calculated using the historical and supplemental, composited data for groundwater, surface soil, subsurface soil, sediment, and surface water for the Main Post and Pelham Range. The summary statistics tabulate the total number of samples, detections, frequency of detection (%), the range of detected values, the arithmetic mean and standard deviation, and characterization of the constituent statistical distribution (normal, lognormal). The summary statistics tabulation presents calculations of the background threshold as twice the arithmetic mean, the 95% Upper Confidence Limit (UCL) on the mean, and exposure point concentration.

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