ATTACHMENT 1

LIST OF ABBREVIATIONS AND ACRONYMS

List of Abbreviations and Acronyms

2-ADNT	2-amino-4,6-dinitrotoluene
4-ADNT	4-amino-2,6-dinitrotoluene
2,4-D	2,4-dichlorophenoxyacetic acid
2,4,5-T	2,4,5-trichlorophenoxyacetic acid
2,4,5-TP	2,4,5-trichlorophenoxypropionic acid
3D	3D International Environmental Group
AB	ambient blank
AbB3	Anniston gravelly clay loam, 2 to 6 percent slopes, severely eroded
AbC3	Anniston gravelly clay loam, 6 to 10 percent slopes, severely eroded
AbD3	Anniston and Allen gravelly clay loams, 10 to 15 percent slopes, eroded
ABLM	adult blood lead model
Abs	skin absorption
ABS	dermal absorption factor
AC	hydrogen cyanide
ACAD	AutoCadd
AcB2	Anniston and Allen gravelly loams, 2 to 6 percent slopes, eroded
AcC2	Anniston and Allen gravelly loams, 6 to 10 percent slopes, eroded
AcD2	Anniston and Allen gravelly loams, 10 to 15 percent slopes, eroded
AcE2	Anniston and Allen gravelly loams, 15 to 25 percent slopes, eroded
ACGIH	American Conference of Governmental Industrial Hygienists
AdE	Anniston and Allen stony loam, 10 to 25 percent slope
ADEM	Alabama Department of Environmental Management
ADPH	Alabama Department of Public Health
AEC	U.S. Army Environmental Center
AEDA	ammunition, explosives, and other dangerous articles
AEL	airborne exposure limit
AET	adverse effect threshold
AF	soil-to-skin adherence factor
AHA	ammunition holding area
AL	Alabama
ALARNG	Alabama Army National Guard
ALAD	δ-aminolevulinic acid dehydratase
ALDOT	Alabama Department of Transportation
amb.	amber
amsl	above mean sea level
ANAD	Anniston Army Depot
ANOVA	Analysis of Variance
AOC	area of concern
AP	armor piercing
APEC	areas of potential ecological concern
APT	armor-piercing tracer
AR	analysis request
ARAR	applicable or relevant and appropriate requirement
AREE	area requiring environmental evaluation
AS/SVE	air sparging/soil vapor extraction
ASP	Ammunition Supply Point
ASR	Archives Search Report
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
AT	averaging time
atm-m^3/mol	atmospheres per cubic meter per mole
ATSDR	Agency for Toxic Substances and Disease Registry
ATV	all-terrain vehicle
AUF	area use factor
AWARE	Associated Water and Air Resources Engineers, Inc.
AWQC	ambient water quality criteria
AWWSB	Anniston Water Works and Sewer Board
'B'	Analyte detected in laboratory or field blank at concentration greater than the reporting limit (and greater than zero)
BAF	bioaccumulation factor
BBGR	Baby Bains Gap Road
BCF	blank correction factor; bioconcentration factor
BCT	BRAC Cleanup Team
BERA	baseline ecological risk assessment
BEHP	bis(2-ethylhexyl)phthalate
BFB	bromofluorobenzene
BFE	base flood elevation
BFM	bonded fiber matrix
BG	Bacillus globigii
BGR	Bains Gap Road
bgs	below ground surface
BHC	hexachlorocyclohexane
BHHRA	baseline human health risk assessment
BIRTC	Branch Immaterial Replacement Training Center
bkg	background
bls	below land surface
BOD	biological oxygen demand
Bp	soil-to-plant biotransfer factors
BRAC	Base Realignment and Closure
Braun	Braun Intertec Corporation
BSAF	biota-to-sediment accumulation factors
BSC	background screening criterion
BTAG	Biological Technical Assistance Group
BTEX	benzene, toluene, ethyl benzene, and xylenes
BTOC	below top of casing
BTV	background threshold value
BW	biological warfare; body weight
BZ	breathing zone; 3-quinuclidinyl benzilate
C	ceiling limit value
Ca	carcinogen
$CaCO_3$	calcium carbonate
CAA	Clean Air Act
CAB	chemical warfare agent breakdown products
CACM	Chemical Agent Contaminated Media
CAIS	chemical agent identification set
CAMU	corrective action management unit
CBR	chemical, biological, and radiological
CCAL	continuing calibration
CCB	continuing calibration blank
CCV	continuing calibration verification
CD	compact disc
CDTF	Chemical Defense Training Facility
CEHNC	U.S. Army Engineering and Support Center, Huntsville
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Environmental Response Facilitation Act
CESAS	Corps of Engineers South Atlantic Savannah
CF	chloroform
CF	conversion factor
CFC	chlorofluorocarbon
CFDP	Center for Domestic Preparedness
CFR	Code of Federal Regulations
CG	phosgene (carbonyl chloride)
CGI	combustible gas indicator
ch	inorganic clays of high plasticity
CHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
CIH	Certified Industrial Hygienist
CK	cyanogen chloride
cl	inorganic clays of low to medium plasticity
Cl	chlorinated
CLP	Contract Laboratory Program
cm	centimeter
CN	chloroacetophenone
CNB	chloroacetophenone, benzene, and carbon tetrachloride
CNS	chloroacetophenone, chloropicrin, and chloroform
CO	carbon monoxide
CO_2	carbon dioxide
Co-60	cobalt-60
CoA	Code of Alabama
COC	chain of custody; chemical of concern
COE	Corps of Engineers
Con	skin or eye contact
COPC	chemical of potential concern
COPEC	constituent of potential ecological concern
CPOM	coarse particulate organic matter
CPSS	chemicals present in site samples
CQCSM	Contract Quality Control System Manager
CRDL	contract-required detection limit
CRL	certified reporting limit
CRQL	contract-required quantitation limit
CRZ	contamination reduction zone
Cs-137	cesium-137
CS	ortho-chlorobenzylidene-malononitrile
CSEM	conceptual site exposure model
CSM	conceptual site model

CT	central tendency
CT	carbon tetrachloride
ctr.	container
CWA	chemical warfare agent; Clean Water Act
CWM	chemical warfare material; clear, wide mouth
CX	dichloroformoxime
'D'	duplicate; dilution
D&I	detection and identification
DAAMS	depot area agent monitoring station
DAF	dilution-attenuation factor
DANC	decontamination agent, non-corrosive
ºC	degrees Celsius
ºF	degrees Fahrenheit
DCA	dichloroethane
DCE	dichloroethene
DD	Defense Department
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethene
DDT	dichlorodiphenyltrichloroethane
DEH	Directorate of Engineering and Housing
DEHP	di(2-ethylhexyl)phthalate
DEP	depositional soil
DFTPP	decafluorotriphenylphosphine
DI	deionized
DID	data item description
DIMP	di-isopropylmethylphosphonate
DM	dry matter; adamsite
DMBA	dimethylbenz(a)anthracene
DMMP	dimethylmethylphosphonate
DNAPL	dense nonaqueous-phase liquid
DNT	dinitrotoluene
DO	dissolved oxygen
DOD	U.S. Department of Defense
DOJ	U.S. Department of Justice
DOT	U.S. Department of Transportation
DP	direct-push
DPDO	Defense Property Disposal Office
DPT	direct-push technology
DQO	data quality objective
DRMO	Defense Reutilization and Marketing Office
DRO	diesel range organics
DS	deep (subsurface) soil
DS2	Decontamination Solution Number 2
DSERTS	Defense Site Environmental Restoration Tracking System
DWEL	drinking water equivalent level
E&E	Ecology and Environment, Inc.
EB	equipment blank
EBC	Eastern Bypass Corridor
EBS	environmental baseline survey
EBV	EBV Explosives Environmental Co.
EC_{20}	effects concentration for 20 percent of a test population
EC_{50}	effects concentration for 50 percent of a test population
ECBC	Edgewood Chemical Biological Center
ED	exposure duration
EDD	electronic data deliverable
EF	exposure frequency
EDQL	ecological data quality level
EE/CA	engineering evaluation and cost analysis
Eh	oxidation-reduction potential
Elev.	elevation
EM	electromagnetic
EMI	Environmental Management Inc.
EM31	Geonics Limited EM31 Terrain Conductivity Meter
EM61	Geonics Limited EM61 High-Resolution Metal Detector
EOD	explosive ordnance disposal
EODT	explosive ordnance disposal team
EPA	U.S. Environmental Protection Agency
EPC	exposure point concentration
EPIC	Environmental Photographic Interpretation Center
EPRI	Electrical Power Research Institute
EPT	Ephemeroptera, Plecoptera, Trichoptera
ER	equipment rinsate
ERA	ecological risk assessment
ER-L	effects range-low
ER-M	effects range-medium
ESE	Environmental Science and Engineering, Inc.
ESL	ecological screening level
ESMP	Endangered Species Management Plan
ESN	Environmental Services Network, Inc.
ESV	ecological screening value
ET	exposure time
EU	exposure unit
Exp.	Explosives
EXTOXNET	Extension Toxicology Network
E-W	east to west
EZ	exclusion zone
FAR	Federal Acquisition Regulations
FB	field blank
FBI	Family Biotic Index
FD	field duplicate
FDC	Former Decontamination Complex
FDA	U.S. Food and Drug Administration
Fe^{+3}	ferric iron
Fe^{+2}	ferrous iron
FedEx	Federal Express, Inc.
FEMA	Federal Emergency Management Agency
FFCA	Federal Facilities Compliance Act
FFE	field flame expedient
FFS	focused feasibility study
FI	fraction of exposure
Fil	filtered
Flt	filtered
FMDC	Fort McClellan Development Commission
FML	flexible membrane liner
f_{oc}	fraction organic carbon
FOMRA	Former Ordnance Motor Repair Area
FOST	Finding of Suitability to Transfer
Foster Wheeler	Foster Wheeler Environmental Corporation
FR	Federal Register
Frtn	fraction
FS	field split; feasibility study; fuming sulfuric acid
FSP	field sampling plan
ft	feet
ft/day	feet per day
ft/ft	feet per foot
ft/yr	feet per year
FTA	Fire Training Area
FTMC	Fort McClellan
FTRRA	FTMC Reuse & Redevelopment Authority
g	gram
g/m^3	gram per cubic meter
G-856	Geometrics, Inc. G-856 magnetometer
G-858G	Geometrics, Inc. G-858G magnetic gradiometer
GAF	gastrointestinal absorption factor
gal	gallon
gal/min	gallons per minute
GB	sarin (isopropyl methylphosphonofluoridate)
gc	clay gravels; gravel-sand-clay mixtures
GC	gas chromatograph
GCL	geosynthetic clay liner
GC/MS	gas chromatograph/mass spectrometer
GCR	geosynthetic clay liner
GFAA	graphite furnace atomic absorption
GIS	Geographic Information System
gm	silty gravels; gravel-sand-silt mixtures
gp	poorly graded gravels; gravel-sand mixtures
gpm	gallons per minute
GPR	ground-penetrating radar
GPS	global positioning system
GRA	general response action
GS	ground scar
GSA	General Services Administration; Geologic Survey of Alabama
GSBP	Ground Scar Boiler Plant
GSSI	Geophysical Survey Systems, Inc.

GST	ground stain
GW	groundwater
gw	well-graded gravels; gravel-sand mixtures
H&S	health and safety
HA	hand auger
HC	mixture of hexachloroethane, aluminum powder, and zinc oxide (smoke producer)
HCl	hydrochloric acid
HD	distilled mustard (bis-[dichloroethyl]sulfide)
HDPE	high-density polyethylene
HE	high explosive
HEAST	Health Effects Assessment Summary Tables
Herb.	herbicides
HHRA	human health risk assessment
HI	hazard index
HN	hydrogen mustard
H_2O_2	hydrogen peroxide
HPLC	high-performance liquid chromatography
HNO_3	nitric acid
HQ	hazard quotient
HQ_{screen}	screening-level hazard quotient
hr	hour
HRC	hydrogen releasing compound
HSA	hollow-stem auger
HSDB	Hazardous Substance Data Bank
HTRW	hazardous, toxic, and radioactive waste
'I'	out of control, data rejected due to low recovery
IASPOW	Impact Area South of POW Training Facility
IATA	International Air Transport Authority
ICAL	initial calibration
ICB	initial calibration blank
ICP	inductively-coupled plasma
ICRP	International Commission on Radiological Protection
ICS	interference check sample
ID	inside diameter
IDL	instrument detection limit
IDLH	immediately dangerous to life or health
IDM	investigative-derived media
IDW	investigation-derived waste
IEUBK	Integrated Exposure Uptake Biokinetic
IF	ingestion factor; inhalation factor
ILCR	incremental lifetime cancer risk
IMPA	isopropylmethyl phosphonic acid
IMR	Iron Mountain Road
in.	inch
Ing	ingestion
Inh	inhalation
IP	ionization potential
IPS	International Pipe Standard
IR	ingestion rate
IRDMIS	Installation Restoration Data Management Information System
IRIS	Integrated Risk Information Service
IRP	Installation Restoration Program
IS	internal standard
ISCP	Installation Spill Contingency Plan
IT	IT Corporation
ITEMS	IT Environmental Management System™
'J'	estimated concentration
JeB2	Jefferson gravelly fine sandy loam, 2 to 6 percent slopes, eroded
JeC2	Jefferson gravelly fine sandy loam, 6 to 10 percent slopes, eroded
JfB	Jefferson stony fine sandy loam, 0 to 10 percent slopes have strong slopes
JPA	Joint Powers Authority
K	conductivity
K_d	soil-water distribution coefficient
kg	kilogram
KeV	kilo electron volt
K_{oc}	organic carbon partioning coefficient
K_{ow}	octonal-water partition coefficient
$KMnO_4$	potassium permanganate
L	liter; Lewisite (dichloro-[2-chloroethyl]sulfide)
L/kg/day	liters per kilogram per day
l	liter
LAW	light anti-tank weapon
lb	pound
LBP	lead-based paint
LC	liquid chromatography
LCS	laboratory control sample
LC_{50}	lethal concentration for 50 percent population tested
LD_{50}	lethal dose for 50 percent population tested
LEL	lower explosive limit
LOAEL	lowest-observed-advserse-effects-level
LOEC	lowest-observable-effect-concentration
LRA	land redevelopment authority
LT	less than the certified reporting limit
LUC	land-use control
LUCAP	land-use control assurance plan
LUCIP	land-use control implementation plan
max	maximum
MB	method blank
MCL	maximum contaminant level
MCLG	maximum contaminant level goal
MCPA	4-chloro-2-methylphenoxyacetic acid
MCPP	2-(2-methyl-4-chlorophenoxy)propionic acid
MCS	media cleanup standard
MD	matrix duplicate
MDC	maximum detected concentration
MDCC	maximum detected constituent concentration
MDL	method detection limit
mg	milligrams
mg/kg	milligrams per kilogram
mg/kg/day	milligram per kilogram per day
mg/kgbw/day	milligrams per kilogram of body weight per day
mg/L	milligrams per liter
mg/m^3	milligrams per cubic meter
mh	inorganic silts, micaceous or diatomaceous fine, sandy or silt soils
MHz	megahertz
µg/g	micrograms per gram
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
µmhos/cm	micromhos per centimeter
MEC	munitions and explosives of concern
MeV	mega electron volt
min	minimum
MINICAMS	miniature continuous air monitoring system
ml	inorganic silts and very fine sands
mL	milliliter
mm	millimeter
MM	mounded material
MMBtu/hr	million Btu per hour
MNA	monitored natural attenuation
MnO_4-	permanganate ion
MOA	Memorandum of Agreement
MOGAS	motor vehicle gasoline
MOUT	Military Operations in Urban Terrain
MP	Military Police
MPA	methyl phosphonic acid
MPC	maximum permissible concentration
MPM	most probable munition
MQL	method quantitation limit
MR	molasses residue
MRL	method reporting limit
MS	matrix spike
mS/cm	millisiemens per centimeter
mS/m	millisiemens per meter
MSD	matrix spike duplicate; minimum separation distance
MTBE	methyl tertiary butyl ether
msl	mean sea level
MtD3	Montevallo shaly, silty clay loam, 10 to 40 percent slopes , severely eroded
mV	millivolts
MW	monitoring well
MWI&MP	Monitoring Well Installation and Management Plan
Na	sodium
NA	not applicable; not available
NAD	North American Datum
NAD83	North American Datum of 1983

$NaMnO_4$	sodium permanganate
NAVD88	North American Vertical Datum of 1988
NAS	National Academy of Sciences
NCEA	National Center for Environmental Assessment
NCP	National Contingency Plan
NCRP	National Council on Radiation Protection and Measurements
ND	not detected
NE	no evidence; northeast
ne	not evaluated
NEW	net explosive weight
NFA	No Further Action
NG	National Guard
NGP	National Guardsperson
ng/L	nanograms per liter
NGVD	National Geodetic Vertical Datum
Ni	nickel
NIC	notice of intended change
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology
NLM	National Library of Medicine
NO_3^-	nitrate
NOEC	no-observable-effect-concentration
NPDES	National Pollutant Discharge Elimination System
NPW	net present worth
No.	number
NOAA	National Oceanic and Atmospheric Administration
NOAEL	no-observed-adverse-effects-level
NR	not requested; not recorded; no risk
NRC	National Research Council
NRCC	National Research Council of Canada
NRHP	National Register of Historic Places
NRT	near real time
ns	nanosecond
N-S	north to south
NS	not surveyed
NSA	New South Associates, Inc.
nT	nanotesla
nT/m	nanoteslas per meter
NTU	nephelometric turbidity unit
nv	not validated
O_2	oxygen
O_3	ozone
O&G	oil and grease
O&M	operation and maintenance
OB/OD	open burning/open detonation
OD	outside diameter
OE	ordnance and explosives
oh	organic clays of medium to high plasticity
OH•	hydroxyl radical
ol	organic silts and organic silty clays of low plasticity
OP	organophosphorus
ORC	Oxygen Releasing Compound
ORP	oxidation-reduction potential
OSHA	Occupational Safety and Health Administration
OSWER	Office of Solid Waste and Emergency Response
OVM-PID/FID	organic vapor meter-photoionization detector/flame ionization detector
OWS	oil/water separator
oz	ounce
PA	preliminary assessment
PAH	polynuclear aromatic hydrocarbon
PARCCS	precision, accuracy, representativeness, comparability, completeness, and sensitivity
Parsons	Parsons Engineering Science, Inc.
Pb	lead
PBMS	performance-based measurement system
PC	permeability coefficient
PCB	polychlorinated biphenyl
PCDD	polychlorinated dibenzo-p-dioxins
PCDF	polychlorinated dibenzofurans
PCE	perchloroethene
PCP	pentachlorophenol
PDS	Personnel Decontamination Station
PEF	particulate emission factor
PEL	permissible exposure limit
PERA	preliminary ecological risk assessment
PERC	perchloroethene
PES	potential explosive site
Pest.	pesticides
PETN	pentaerythritoltetranitrate
PFT	portable flamethrower
PG	professional geologist
PID	photoionization detector
PkA	Philo and Stendal soils local alluvium, 0 to 2 percent slopes
PM	project manager
POC	point of contact
POL	petroleum, oils, and lubricants
POTW	publicly owned treatment works
POW	prisoner of war
PP	peristaltic pump; Proposed Plan
ppb	parts per billion
ppbv	parts per billion by volume
PPE	personal protective equipment
ppm	parts per million
PPMP	Print Plant Motor Pool
ppt	parts per thousand
PR	potential risk
PRA	preliminary risk assessment
PRG	preliminary remediation goal
PS	chloropicrin
PSSC	potential site-specific chemical
pt	peat or other highly organic silts
PVC	polyvinyl chloride
QA	quality assurance
QA/QC	quality assurance/quality control
QAM	quality assurance manual
QAO	quality assurance officer
QAP	installation-wide quality assurance plan
QC	quality control
QST	QST Environmental, Inc.
qty	quantity
Qual	qualifier
QuickSilver	QuickSilver Analytics, Inc.
R	rejected data; resample; retardation factor
R&A	relevant and appropriate
RA	remedial action
RAO	remedial action objective
RBC	risk-based concentration; red blood cell
RBP	Rapid Bioassessment Protocol
RBRG	risk-based remedial goal
RCRA	Resource Conservation and Recovery Act
RCWM	Recovered Chemical Warfare Material
RD	remedial design
RDX	cyclotrimethylenetrinitramine
ReB3	Rarden silty clay loams
REG	regular field sample
REL	recommended exposure limit
RFA	request for analysis
RfC	reference concentration
RfD	reference dose
RGO	remedial goal option
RI	remedial investigation
RL	reporting limit
RME	reasonable maximum exposure
ROD	Record of Decision
RPD	relative percent difference
RR	range residue
RRF	relative response factor
RRSE	Relative Risk Site Evaluation
RSD	relative standard deviation
RTC	Recruiting Training Center
RTECS	Registry of Toxic Effects of Chemical Substances
RTK	real-time kinematic
RWIMR	Ranges West of Iron Mountain Road
SA	exposed skin surface area

SAD	South Atlantic Division
SAE	Society of Automotive Engineers
SAIC	Science Applications International Corporation
SAP	installation-wide sampling and analysis plan
SARA	Superfund Amendments and Reauthorization Act
sc	clayey sands; sand-clay mixtures
Sch.	schedule
SCM	site conceptual model
SD	sediment
SDG	sample delivery group
SDWA	Safe Drinking Water Act
SDZ	safe distance zone; surface danger zone
SEMS	Southern Environmental Management & Specialties, Inc.
SF	cancer slope factor
SFSP	site-specific field sampling plan
SGF	standard grade fuels
Shaw	Shaw Environmental, Inc.
SHP	installation-wide safety and health plan
SI	site investigation
SINA	Special Interest Natural Area
SL	standing liquid
SLERA	screening-level ecological risk assessment
sm	silty sands; sand-silt mixtures
SM	Serratia marcescens
SMDP	Scientific Management Decision Point
s/n	signal-to-noise ratio
SO_4^{-2}	sulfate
SOD	soil oxidant demand
SOP	standard operating procedure
SOPQAM	U.S. EPA's *Standard Operating Procedure/Quality Assurance Manual*
sp	poorly graded sands; gravelly sands
SP	submersible pump
SPCC	system performance calibration compound
SPCS	State Plane Coordinate System
SPM	sample planning module
SQRT	screening quick reference tables
Sr-90	strontium-90
SRA	streamlined human health risk assessment
SRI	supplemental remedial investigation
SRM	standard reference material
Ss	stony rough land, sandstone series
SS	surface soil
SSC	site-specific chemical
SSHO	site safety and health officer
SSHP	site-specific safety and health plan
SSL	soil screening level
SSSL	site-specific screening level
SSSSL	site-specific soil screening level
STB	supertropical bleach
STC	source-term concentration
STD	standard deviation
STEL	short-term exposure limit
STL	Severn-Trent Laboratories
STOLS	Surface Towed Ordnance Locator System®
Std. units	standard units
SU	standard unit
SUXOS	senior UXO supervisor
SVOC	semivolatile organic compound
SW	surface water
SW-846	U.S. EPA's *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*
SWMU	solid waste management unit
SWPP	storm water pollution prevention plan
SZ	support zone
TAL	target analyte list
TAT	turn around time
TB	trip blank
TBC	to be considered
TCA	trichloroethane
TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin
TCDF	tetrachlorodibenzofurans
TCE	trichloroethene
TCL	target compound list
TCLP	toxicity characteristic leaching procedure
TDEC	Tennessee Department of Environment and Conservation
TDGCL	thiodiglycol
TDGCLA	thiodiglycol chloroacetic acid
TEA	triethylaluminum
TeCA	1,1,2,2-tetrachloroethane
Tetryl	trinitrophenylmethylnitramine
TERC	Total Environmental Restoration Contract
TEU	Technical Escort Unit
THI	target hazard index
TIC	tentatively identified compound
TLV	threshold limit value
TN	Tennessee
TNB	trinitrobenzene
TNT	trinitrotoluene
TOC	top of casing; total organic carbon
TPH	total petroleum hydrocarbons
TR	target cancer risk
TRADOC	U.S. Army Training and Doctrine Command
TRPH	total recoverable petroleum hydrocarbons
TRV	toxicity reference value
TSCA	Toxic Substances Control Act
TSDF	treatment, storage, and disposal facility
TSS	total suspended solids
TWA	time-weighted average
UCL	upper confidence limit
UCR	upper certified range
'U'	not detected above reporting limit
UIC	underground injection control
UF	uncertainty factor
URF	unit risk factor
USACE	U.S. Army Corps of Engineers
USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
USAEC	U.S. Army Environmental Center
USAEHA	U.S. Army Environmental Hygiene Agency
USACMLS	U.S. Army Chemical School
USAMPS	U.S. Army Military Police School
USATCES	U.S. Army Technical Center for Explosive Safety
USATEU	U.S. Army Technical Escort Unit
USATHAMA	U.S. Army Toxic and Hazardous Material Agency
USC	United States Code
USCS	Unified Soil Classification System
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
UTL	upper tolerance level; upper tolerance limit
UXO	unexploded ordnance
UXOQCS	UXO Quality Control Supervisor
UXOSO	UXO safety officer
V	vanadium
VC	vinyl chloride
VOA	volatile organic analyte
VOC	volatile organic compound
VOH	volatile organic hydrocarbon
VQlfr	validation qualifier
VQual	validation qualifier
VX	nerve agent (O-ethyl-S-[diisopropylaminoethyl]-methylphosphonothiolate)
WAC	Women's Army Corps
Weston	Roy F. Weston, Inc.
WP	installation-wide work plan
WRS	Wilcoxon rank sum
WS	watershed
WSA	Watershed Screening Assessment
WWI	World War I
WWII	World War II
XRF	x-ray fluorescence
yd^3	cubic yards
ZVI	zero-valent iron

TABLES

Table 2-1

Sampling Locations and Rationale
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Media	Sample Location Rationale
HR-137Q-MW01	Surface soil, subsurface soil and groundwater	Surface soil, subsurface soil, and groundwater samples were collected in the southern-central portion of the site, downslope of possible supertropical bleach (STB) drums, to determine if potential site-specific chemicals have impacted site media. Two rounds of groundwater samples were collected from the monitoring well installed at this location.
HR-137Q-MW02	Surface soil, subsurface soil and groundwater	Surface soil, subsurface soil, and groundwater samples were collected north (downslope) of a large trench and STB drums in the southern-central portion of the site to determine if potential site-specific chemicals have impacted site media. Two rounds of groundwater samples were collected from the monitoring well installed at this location.
HR-137Q-MW03	Surface soil, subsurface soil, and groundwater	Surface soil, subsurface soil, and groundwater samples were collected in the central portion of the site, approximately 100 feet north (downslope) of the large trench in the southern portion of the site to determine if potential site-specific chemicals have impacted site media.
HR-137Q-MW04	Surface soil, subsurface soil and groundwater	Surface soil, subsurface soil, and groundwater samples collected approximately 100 feet south (upslope) of the trench to determine if potential site-specific chemicals have impacted site media. Two rounds of groundwater samples were collected from the monitoring well installed at this location.
HR-137Q-GP01	Surface soil and subsurface soil	Surface and subsurface soil samples were collected west of the road on the western side of the site, adjacent to a disturbed area, to determine if potential site-specific chemicals have impacted site media.
HR-137Q-GP02	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the western-central portion of the area of investigation, in a disturbed area with possible STB drums, to determine if potential site-specific chemicals have impacted site media.
HR-137Q-GP03	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the western-central portion of the area of investigation, near a disturbed area and possible STB drum, to determine if potential site-specific chemicals have impacted site media.
HR-137Q-GP04	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the large trench, approximately 20 feet southeast of two surface depressions, to determine if potential site-specific chemicals have impacted site media.

Table 2-1

Sampling Locations and Rationale
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Media	Sample Location Rationale
HR-137Q-GP05	Surface soil and subsurface soil	Surface and subsurface soil samples were collected within a disturbed area in the eastern-central portion of the site to determine if potential site-specific chemicals have impacted site media.
HR-137Q-GP06	Surface soil and subsurface soil	Surface and subsurface soil samples were collected from a surface depression in the southeastern portion of the site to determine if potential site-specific chemicals have impacted site media.
HR-137Q-GP07	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the large trench, approximately 30 feet east of STB drums, to determine if potential site-specific chemicals have impacted site media.
HR-137Q-GP08	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the large trench, between the western stream channel and a pit, to determine if potential site-specific chemicals have impacted site media.
HR-137Q-GP09	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the southern portion of the area of investigation, upslope of the trench and scattered debris, to determine if potential site-specific chemicals have impacted site media.
HR-137Q-GP10	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the trench, downslope of a rusted truck body with bullet holes, to determine if potential site-specific chemicals have impacted site media.
HR-137Q-GP11	Surface soil and subsurface soil	Surface and subsurface soil samples were collected from a pit within the trench to determine if potential site-specific chemicals have impacted site media.
HR-137Q-GP12	Surface soil and subsurface soil	Surface and subsurface soil samples were collected downslope and immediately adjacent to HR-137Q-MW03(SB) to determine the extent of site-specific chemicals. The subsurface soil samples were collected based on XRF screening showing the highest lead concentrations.
HR-137Q-GP13	Surface soil and subsurface soil	Surface and subsurface soil samples were collected immediately adjacent to HR-137Q-MW04 to determine the extent of site-specific chemicals. The subsurface soil sample was collected based on XRF screening showing the highest lead concentrations.
HR-137Q-GP14	Surface soil and subsurface soil	Surface and subsurface soil samples were collected immediately adjacent to HR-137Q-GP04 to confirm previous lead results. The first subsurface soil sample was collected to match the subsurface depth at HR-137Q-GP04. The second subsurface soil sample was collected based on XRF screening showing the highest lead concentrations.

Table 2-1

Sampling Locations and Rationale
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Media	Sample Location Rationale
HR-137Q-GP15	Surface soil and subsurface soil	Surface and subsurface soil samples were collected approximately 100 feet east of XRF grid node W200, N200 to determine the extent of lead contamination in soil. The subsurface soil samples were collected based on XRF screening showing the highest lead concentrations.
HR-137Q-GP16	Surface soil and subsurface soil	Surface and subsurface soil samples were collected outside the western boundary of the area of investigation at XRF grid node W600, N300 to determine the extent of lead contamination in soil. The subsurface soil sample was collected based on XRF screening showing the highest lead concentrations.
HR-137Q-GP17	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the eastern-central portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP18	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the southern-central portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP19	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the southern-central portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP20	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the southern-central portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP21	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the southeastern portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP22	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the southeastern portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP23	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the southeastern portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.

Table 2-1

Sampling Locations and Rationale
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Media	Sample Location Rationale
HR-137Q-GP24	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the southwestern portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP25	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the southeastern portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP26	Surface soil and subsurface soil	Surface and subsurface soil samples were collected in the southwestern portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP27	Surface soil	A surface soil sample was collected in the central portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP28	Surface soil	A surface soil sample was collected in the central portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP29	Surface soil	A surface soil sample was collected in the central portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP30	Surface soil	A surface soil sample was collected in the central portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP31	Surface soil	A surface soil sample was collected in the eastern-central portion of the area of investigation based on XRF screening to determine the extent of lead contamination in soil.
HR-137Q-GP32	Surface soil	A surface soil sample was collected just outside the eastern boundary of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.

Table 2-1

Sampling Locations and Rationale
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Media	Sample Location Rationale
HR-137Q-GP33	Surface soil	A surface soil sample was collected in the southern-central portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP34	Surface soil	A surface soil sample was collected in the southern-central portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP35	Surface soil	A surface soil sample was collected in the southwestern portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP36	Surface soil	A surface soil sample was collected outside of the southeastern boundary of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP37	Surface soil	A surface soil sample was collected in the southern portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP38	Surface soil	A surface soil sample was collected outside of the southern boundary of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP39	Surface soil	A surface soil sample was collected in the southern portion of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil in soil.
HR-137Q-GP40	Surface soil	A surface soil sample was collected along the southern boundary of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-GP41	Surface soil	A surface soil sample was collected near the southern boundary of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.

Table 2-1

Sampling Locations and Rationale
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Media	Sample Location Rationale
HR-137Q-GP42	Surface soil	A surface soil sample was collected just outside the southern boundary of the area of investigation based on XRF screening results to determine the extent of lead contamination in soil.
HR-137Q-DEP01	Depositional soil	A depositional soil sample was collected from a dry streambed just west of the area of investigation, downslope of a disturbed area and possible STB drums, to determine if potential site-specific chemicals have impacted site media.
HR-137Q-DEP02	Depositional Soil	A depositional soil sample was collected from the eastern streambed, upslope (south) of the area of investigation, to determine if potential site-specific chemicals have impacted site media.
HR-137Q-DEP03	Depositional Soil	A depositional soil sample was collected from the eastern streambed, downslope of the trench, to determine if potential site-specific chemicals have impacted site media.
HR-137Q-DEP04	Depositional Soil	A depositional soil sample was collected from the western streambed, upslope of the trench, to determine if potential site-specific chemicals have impacted site media.
HR-137Q-DEP05	Depositional Soil	A depositional soil sample was collected from the western streambed, downslope of the trench, to determine if potential site-specific chemicals have impacted site media.
HR-137Q-DEP06	Depositional Soil	A depositional soil sample was collected in the northern portion of the site, downslope of the convergence of the eastern and western intermittent streams, to determine if potential site-specific chemicals have impacted site media.
HR-137Q-DEP07	Depositional Soil	A depositional soil sample was collected from the western streambed, in the northern-central portion of the area of investigation, to determine if potential site-specific chemicals have impacted site media.
HR-137Q-DEP08	Depositional Soil	A depositional soil sample was collected from the western streambed, in the central portion of the area of investigation, to determine if potential site-specific chemicals have impacted site media.

Table 2-1

Sampling Locations and Rationale
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Media	Sample Location Rationale
HR-137Q-DEP09	Depositional Soil	A depositional soil sample was collected from a dry streambed west of the area of investigation, downslope of the western-central portion of the site, to determine if potential site-specific chemicals have impacted site media.
HR-137Q-SW/SD01	Surface Water and Sediment	Surface water and sediment samples were collected in the eastern intermittent stream, at the southern boundary of the area of investigation, to determine the presence of potential site-specific chemicals.
HR-137Q-SW/SD02	Surface Water and Sediment	Surface water and sediment samples were collected in the eastern intermittent stream, in the south-central portion of the area of investigation, to determine the presence of potential site-specific chemicals.
HR-137Q-SW/SD03	Surface Water and Sediment	Surface water and sediment samples were collected in the eastern intermittent stream, in the northern-central portion of the area of investigation, to determine the presence of potential site-specific chemicals.
HR-137Q-SW/SD04	Surface Water and Sediment	Surface water and sediment samples were collected immediately downstream of the confluence of the eastern and western streams, in the north-central portion of the area of investigation, to determine the presence of potential site-specific chemicals.

Table 2-2

Soil Sample Designations and Analytical Parameters
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Designation	Sample Depth (ft)	QA/QC Samples		Analytical Parameters
			Field Duplicates	MS/MSD	
HR-137Q-GP01	HR-137Q-GP01-SS-RH0001-REG	0-1			Metals and Explosives
	HR-137Q-GP01-DS-RH0002-REG	4-6			
HR-137Q-GP02	HR-137Q-GP02-SS-RH0003-REG	0-1			Metals and Explosives
	HR-137Q-GP02-DS-RH0004-REG	4-6			
HR-137Q-GP03	HR-137Q-GP03-SS-RH0005-REG	0-1			Metals and Explosives
	HR-137Q-GP03-DS-RH0006-REG	4-6			
HR-137Q-GP04	HR-137Q-GP04-SS-RH0007-REG	0-1		HR-137Q-GP04-SS-RH0007-MS/MSD	Metals, VOCs, SVOCs, Pesticides, Herbicides, and Explosives
	HR-137Q-GP04-DS-RH0008-REG	1-2			
HR-137Q-GP05	HR-137Q-GP05-SS-RH0009-REG	0-1			Metals and Explosives
	HR-137Q-GP05-DS-RH0010-REG	1-2			
HR-137Q-GP06	HR-137Q-GP06-SS-RH0011-REG	0-1			Metals and Explosives
	HR-137Q-GP06-DS-RH0012-REG	1-2			
HR-137Q-GP07	HR-137Q-GP07-SS-RH0013-REG	0-1			Metals, VOCs, SVOCs, Pesticides, Herbicides, and Explosives
	HR-137Q-GP07-DS-RH0014-REG	4-6			
HR-137Q-GP08	HR-137Q-GP08-SS-RH0015-REG	0-1			Metals, VOCs, SVOCs, Pesticides, Herbicides, and Explosives
	HR-137Q-GP08-DS-RH0016-REG	10-12			
HR-137Q-GP09	HR-137Q-GP09-SS-RH0017-REG	0-1			Metals and Explosives
	HR-137Q-GP09-DS-RH0018-REG	2-4			
HR-137Q-GP10	HR-137Q-GP10-SS-RH0019-REG	0-1			Metals, VOCs, SVOCs, Pesticides, Herbicides, and Explosives
	HR-137Q-GP10-DS-RH0020-REG	2-4			
HR-137Q-GP11	HR-137Q-GP11-SS-RH0021-REG	0-1			Metals, VOCs, SVOCs, Pesticides, Herbicides, and Explosives
	HR-137Q-GP11-DS-RH0022-REG	4-6			
HR-137Q-GP12	HR-137Q-GP12-SS-RH0041-REG	0-1		HR-137Q-GP12-SS-RH0041-MS/MSD	Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs
	HR-137Q-GP12-DS-RH0042-REG	1-2			
	HR-137Q-GP12-DS-RH0043-REG	2-3			
HR-137Q-GP13	HR-137Q-GP13-SS-RH0044-REG	0-1			Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs
	HR-137Q-GP13-DS-RH0045-REG	1-2	HR-137Q-GP13-DS-RH0046-FD		
HR-137Q-GP14	HR-137Q-GP14-SS-RH0048-REG	0-1			Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs
	HR-137Q-GP14-DS-RH0049-REG	1-2			
	HR-137Q-GP14-DS-RH0050-REG	8-9			
HR-137Q-GP15	HR-137Q-GP15-SS-RH0051-REG	0-1			Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs
	HR-137Q-GP15-DS-RH0052-REG	1-2			
	HR-137Q-GP15-DS-RH0053-REG	2-3			
HR-137Q-GP16	HR-137Q-GP16-SS-RH0054-REG	0-1			Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs
	HR-137Q-GP16-DS-RH0055-REG	1-2			
HR-137Q-GP17	HR-137Q-GP17-SS-RH0057-REG	0-1			Metals and Explosives
	HR-137Q-GP17-DS-RH0058-REG	1-2			
	HR-137Q-GP17-DS-RH0059-REG	2-3			

Table 2-2

Soil Sample Designations and Analytical Parameters
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Designation	Sample Depth (ft)	QA/QC Samples		Analytical Parameters
			Field Duplicates	MS/MSD	
HR-137Q-GP18	HR-137Q-GP18-SS-RH0060-REG	0-1			Metals and Explosives
	HR-137Q-GP18-DS-RH0061-REG	1-2			
HR-137Q-GP19	HR-137Q-GP19-SS-RH0063-REG	0-1			Metals and Explosives
	HR-137Q-GP19-DS-RH0064-REG	1-2			
	HR-137Q-GP19-DS-RH0065-REG	2-2.5	HR-137Q-GP19-DS-RH0066-FD		
HR-137Q-GP20	HR-137Q-GP20-SS-RH0067-REG	0-1			Metals and Explosives
	HR-137Q-GP20-DS-RH0068-REG	1-1.5			
HR-137Q-GP21	HR-137Q-GP21-SS-RH0070-REG	0-1	HR-137Q-GP21-SS-RH0071-FD		Metals and Explosives
	HR-137Q-GP21-DS-RH0072-REG	1-2			
	HR-137Q-GP21-DS-RH0073-REG	2-3			
HR-137Q-GP22	HR-137Q-GP22-SS-RH0074-REG	0-1			Metals and Explosives
	HR-137Q-GP22-DS-RH0075-REG	1-2			
	HR-137Q-GP22-DS-RH0076-REG	2-3			
HR-137Q-GP23	HR-137Q-GP23-SS-RH0077-REG	0-1			Metals and Explosives
	HR-137Q-GP23-DS-RH0078-REG	1-2		HR-137Q-GP23-DS-RH0078-MS/MSD	
HR-137Q-GP24	HR-137Q-GP24-SS-RH0080-REG	0-1			Metals and Explosives
	HR-137Q-GP24-DS-RH0081-REG	1-2			
	HR-137Q-GP24-DS-RH0082-REG	2-3			
HR-137Q-GP25	HR-137Q-GP25-SS-RH0083-REG	0-1			Metals and Explosives
	HR-137Q-GP25-DS-RH0084-REG	1-2			
	HR-137Q-GP25-DS-RH0085-REG	3-4			
HR-137Q-GP26	HR-137Q-GP26-SS-RH0086-REG	0-1	HR-137Q-GP26-SS-RH0087-FD		Metals and Explosives
	HR-137Q-GP26-DS-RH0088-REG	1-2			
	HR-137Q-GP26-DS-RH0089-REG	2-3			
HR-137Q-GP27	HR-137Q-GP27-SS-RH0090-REG	0-1			Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs
HR-137Q-GP28	HR-137Q-GP28-SS-RH0091-REG	0-1			Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs
HR-137Q-GP29	HR-137Q-GP29-SS-RH0092-REG	0-1			Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs
HR-137Q-GP30	HR-137Q-GP30-SS-RH0093-REG	0-1			Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs
HR-137Q-GP31	HR-137Q-GP31-SS-RH0094-REG	0-1	HR-137Q-GP31-SS-RH0095-FD		Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs
HR-137Q-GP32	HR-137Q-GP32-SS-RH0108-REG	0-1			Lead
HR-137Q-GP33	HR-137Q-GP33-SS-RH0109-REG	0-1		HR-137Q-GP33-SS-RH0109-MS/MSD	Lead
HR-137Q-GP34	HR-137Q-GP34-SS-RH0110-REG	0-1			Lead
HR-137Q-GP35	HR-137Q-GP35-SS-RH0111-REG	0-1			Lead
HR-137Q-GP36	HR-137Q-GP36-SS-RH0112-REG	0-1			Lead

Table 2-2

Soil Sample Designations and Analytical Parameters
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Designation	Sample Depth (ft)	QA/QC Samples		Analytical Parameters
			Field Duplicates	MS/MSD	
HR-137Q-GP37	HR-137Q-GP37-SS-RH0113-REG	0-1	HR-137Q-GP37-SS-RH0114-FD		Lead
HR-137Q-GP38	HR-137Q-GP38-SS-RH0103-REG	0-1			Lead
HR-137Q-GP39	HR-137Q-GP39-SS-RH0104-REG	0-1			Lead
HR-137Q-GP40	HR-137Q-GP40-SS-RH0105-REG	0-1			Lead
HR-137Q-GP41	HR-137Q-GP41-SS-RH0106-REG	0-1			Lead
HR-137Q-GP42	HR-137Q-GP42-SS-RH0107-REG	0-1			Lead
HR-137Q-MW01	HR-137Q-MW01-SS-RH0023-REG	0-1	HR-137Q-MW01-SS-RH0024-FD		Metals, VOCs, SVOCs, Pesticides, Herbicides, and Explosives
	HR-137Q-MW01-DS-RH0025-REG	4-6			
HR-137Q-MW02	HR-137Q-MW02-SS-RH0026-REG	0-1			Metals, VOCs, SVOCs, Pesticides, Herbicides, and Explosives
	HR-137Q-MW02-DS-RH0027-REG	6-8	HR-137Q-MW02-DS-RH0028-FD		
HR-137Q-MW03	HR-137Q-MW03-SS-RH0029-REG	0-1			Metals, VOCs, SVOCs, Pesticides, Herbicides, and Explosives
	HR-137Q-MW03-DS-RH0030-REG	6-8			
HR-137Q-MW04	HR-137Q-MW04-SS-RH0031-REG	0-1			Metals, VOCs, SVOCs, Pesticides, Herbicides, and Explosives
	HR-137Q-MW04-DS-RH0032-REG	6-8			
HR-137Q-DEP01	HR-137Q-DEP01-DEP-RH0033-REG	0-0.5	HR-137Q-DEP01-DEP-RH0034-FD		Metals, VOCs, SVOCs, Pesticides, Herbicides, and Explosives
HR-137Q-DEP02	HR-137Q-DEP02-DEP-RH0035-REG	0-0.5	HR-137Q-DEP02-DEP-RH0036-FD		Metals and Explosives
HR-137Q-DEP03	HR-137Q-DEP03-DEP-RH0037-REG	0-0.5			Metals and Explosives
HR-137Q-DEP04	HR-137Q-DEP04-DEP-RH0038-REG	0-0.5		HR-137Q-DEP04-DEP-RH0038-MS/MSD	Metals, VOCs, SVOCs, Pesticides, Herbicides, and Explosives
HR-137Q-DEP05	HR-137Q-DEP05-DEP-RH0039-REG	0-0.5			Metals and Explosives
HR-137Q-DEP06	HR-137Q-DEP06-DEP-RH0040-REG	0-0.5			Metals and Explosives
HR-137Q-DEP07	HR-137Q-DEP07-DEP-RH0115-REG	0-0.5			Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs
HR-137Q-DEP08	HR-137Q-DEP08-DEP-RH0116-REG	0-0.5			Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs
HR-137Q-DEP09	HR-137Q-DEP09-DEP-RH0117-REG	0-0.5			Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs

FD - Field duplicate.
ft - Feet.
MD/MSD - Matrix spike/matrix spike duplicate.
PCB - Polychlorinated biphenyl.
QA/QC - Quality assurance/quality control.
REG - Field sample.
SVOC - Semivolatile organic compound.
VOC - Volatile organic compound.

Table 2-3

Monitoring Well Construction Summary
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Well Location	Northing	Easting	Ground Elevation (ft amsl)	TOC Elevation (ft amsl)	Well Depth (ft bgs)	Screen Length (ft)	Screen Interval (ft bgs)	Well Material
HR-137Q-MW01	1180506.49	685655.31	1194.30	1196.27	32.5	15	17.5 - 32.5	2" ID Sch. 40 PVC
HR-137Q-MW02	1180585.09	685618.00	1190.09	1192.28	33	15	18 - 33	2" ID Sch. 40 PVC
HR-137Q-MW03	1180685.30	685394.60	1186.80	1188.94	25	10	15 - 25	2" ID Sch. 40 PVC
HR-137Q-MW04	1180469.62	685432.03	1223.25	1225.43	50	15	35 - 50	2" ID Sch. 40 PVC

Permanent wells installed using hollow-stem auger.

Horizontal coordinates referenced to the U.S. State Plane Coordinate System, Alabama East Zone, North American Datum of 1983.
Elevations referenced to the North American Vertical Datum of 1988.

2" ID Sch. 40 PVC - 2-inch inside diameter, Schedule 40, polyvinyl chloride.
amsl - Above mean sea level.
bgs - Below ground surface.
ft - Feet

Table 2-4

Groundwater and Surface Water Field Parameters
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Date	Sample Medium	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)	pH (SU)
HR-137Q-MW01	3-Jul-03	GW	0.031	0.99	129	16.9	10	5.46
	10-Jul-02	GW	0.058	4.12	-37	18.8	>1000	6.44
HR-137Q-MW02	2-Jul-03	GW	0.015	7.03	155	15.9	7.9	4.97
	8-Jul-02	GW	0.027	4.22	238	17.4	31	5.15
HR-137Q-MW03	10-Jul-03	GW	0.041	7.34	150	20.0	34	5.19
HR-137Q-MW04	8-Jul-03	GW	0.012	8.44	265	19.4	6.3	4.63
	12-Jul-02	GW	0.020	8.97	224	18.9	223	5.65
HR-137Q-SW/SD01	9-Mar-04	SW	0.015	10.41	-40	10.7	0.8	3.32
HR-137Q-SW/SD02	11-Mar-04	SW	0.014	12.13	-70	10.2	0.5	3.80
HR-137Q-SW/SD03	8-Mar-04	SW	0.015	10.95	-67	11.4	0.9	3.84
HR-137Q-SW/SD04	10-Mar-04	SW	0.015	10.59	-47	10.7	0.7	3.61

°C - Degrees Celsius.
GW - Groundwater.
mg/L - Milligrams per liter.
mS/cm - Millisiemen per centimeter.
mV - Millivolt.
NTU - Nephelometric turbidity unit.
ORP - Oxidation-reduction potential.
SU - Standard unit.
SW - Surface water.

Table 2-5

Groundwater Sample Designations and Analytical Parameters
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Designation	QA/QC Samples		Analytical Parameters
		Field Duplicates	MS/MSD	
HR-137Q-MW01	HR-137Q-MW01-GW-RH3001-REG		HR-137Q-MW01-GW-RH3001-MS/MSD	Metals, VOCs, SVOCs, Pesticides, Herbicides, and Explosives
	HR-137Q-MW01-GW-RH3006-REG	HR-137Q-MW01-GW-RH3007-FD		Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs
HR-137Q-MW02	HR-137Q-MW02-GW-RH3002-REG	HR-137Q-MW02-GW-RH3003-FD		Metals, VOCs, SVOCs, Pesticides, Herbicides, and Explosives
	HR-137Q-MW02-GW-RH3008-REG		HR-137Q-MW02-GW-RH3008-MS/MSD	Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs
HR-137Q-MW03	HR-137Q-MW03-GW-RH3009-REG			Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs
HR-137Q-MW04	HR-137Q-MW04-GW-RH3005-REG			Metals, VOCs, SVOCs, Pesticides, Herbicides, and Explosives
	HR-137Q-MW04-GW-RH3010-REG			Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, and PCBs

FD - Field duplicate.
MS/MSD - Matrix spike/matrix spike duplicate.
PCB - Polychlorinated biphenyl.
QA/QC - Quality assurance/quality control.
REG - Field sample.
SVOC - Semivolatile organic compound.
VOC - Volatile organic compound.

Table 2-6

Groundwater Elevations
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Well Location	Date	Depth to Water (ft BTOC)	Top of Casing Elevation (ft amsl)	Ground Elevation (ft amsl)	Groundwater Elevation (ft amsl)
HR-137Q-MW01	23-Jun-03	7.42	1196.27	1194.30	1188.85
HR-137Q-MW02	23-Jun-03	9.33	1192.28	1190.09	1182.95
HR-137Q-MW03	23-Jun-03	11.57	1188.94	1186.80	1177.37
HR-137Q-MW04	23-Jun-03	37.09	1225.43	1223.25	1188.34

Elevations referenced to the North American Vertical Datum of 1988.

amsl - Above mean sea level.
BTOC - Below top of casing.
ft - Feet.

Table 2-7

Surface Water and Sediment Sample Designations and Analytical Parameters
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location	Sample Designation	QA/QC Samples		Analytical Parameters
		Field Duplicates	MS/MSD	
HR-137Q-SW/SD01	HR-137Q-SW/SD01-SW-RH2001-REG		HR-137Q-SW/SD01-SW-RH2001-MS/MSD	Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, PCBs, TOC[a], and Grain Size[a]
	HR-137Q-SW/SD01-SD-RH1001-REG		HR-137Q-SW/SD01-SD-RH1001-MS/MSD	
HR-137Q-SW/SD02	HR-137Q-SW/SD02-SW-RH2002-REG	HR-137Q-SW/SD02-SW-RH2003-FD		Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, PCBs, TOC[a], and Grain Size[a]
	HR-137Q-SW/SD02-SD-RH1002-REG	HR-137Q-SW/SD02-SD-RH1003-FD		
HR-137Q-SW/SD03	HR-137Q-SW/SD03-SW-RH2004-REG			Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, PCBs, TOC[a], and Grain Size[a]
	HR-137Q-SW/SD03-SD-RH1004-REG			
HR-137Q-SW/SD04	HR-137Q-SW/SD04-SW-RH2005-REG			Metals, VOCs, SVOCs, Pesticides, Herbicides, Explosives, PCBs, TOC[a], and Grain Size[a]
	HR-137Q-SW/SD04-SD-RH1005-REG			

[a] Sediment sample only, excluding QA/QC samples.

FD - Field duplicate.
MS/MSD - Matrix spike/matrix spike duplicate.
PCB - Polychlorinated biphenyl.
QA/QC - Quality assurance/quality control.
REG - Field sample.
SD - Sediment.
SVOC - Semivolatile organic compound.
SW - Surface water.
TOC - Total organic carbon.
VOC - Volatile organic compound.

Table 2-8

Variances to the Site-Specific Work Plan
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Variance	Justification for Variance	Impact to Investigation
Permanent residuum monitoring well HR-137Q-MW03 was moved approximately 80 feet northwest of direct-push location HR-137Q-MW03. A groundwater sample was not collected from monitoring well HR-137Q-MW03 during the site investigation.	Monitoring well HR-137Q-MW03 was not installed at its proposed location because a stratum interpreted as competent bedrock was encountered at 22 feet below ground surface (bgs) prior to reaching groundwater. The monitoring well was relocated; however, a similar stratum was encountered at 25 feet bgs and groundwater was not present.	Minimal. This well was subsequently sampled during remedial investigation field activities.
Proposed site investigation surface water/sediment sample locations HR-137Q-SW/SD01 through HR-137Q-SW/SD05 were collected as depositional soil samples HR-137Q-DEP02 through HR-137Q-DEP06.	Surface water was not present in the intermittent streams at the time of sample collection.	None. Depositional soils are representative of surface runoff conditions and the data were used to characterize the site.
Proposed remedial investigation (RI) surface water/sediment sample location HR-137Q-SW/SD05 was changed to depositional soil sample location HR-137Q-DEP07.	Due to the intermittent nature of the drainage feature, surface water is only present immediately following heavy rain events. Therefore, a depositional soil sample was collected at this location.	None. Depositional soils are representative of surface runoff conditions and the data were used to characterize the site.
Proposed RI surface water/sediment sample location HR-137Q-SW/SD06 was changed to depositional soil sample location HR-137Q-DEP08.	Due to the intermittent nature of the drainage feature, surface water is only present immediately following heavy rain events. Therefore, a depositional soil sample was collected at this location.	None. Depositional soils are representative of surface runoff conditions and the data were used to characterize the site.
Proposed RI surface water/sediment sample location HR-137Q-SW/SD07 was changed to depositional soil sample location HR-137Q-DEP09.	Due to the intermittent nature of the drainage feature, surface water is only present immediately following heavy rain events. Therefore, a depositional soil sample was collected at this location.	None. Depositional soils are representative of surface runoff conditions and the data were used to characterize the site.

Table 3-1

Horizontal Hydraulic Gradient
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Upgradient Well	Groundwater Elevation (ft amsl) 23-Jun-04	Downgradient Well	Groundwater Elevation (ft amsl) 23-Jun-04	Horizontal Distance Between Wells (ft)	Horizontal Hydraulic Gradient (ft/ft)
HR-137Q-MW01	1188.85	HR-137Q-MW02	1182.95	75	0.079
HR-137Q-MW04	1188.34	HR-137Q-MW03	1177.37	225	0.049
				Arithmetic Mean	**0.064**

amsl - above mean sea level
ft - feet

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-DEP01					HR-137Q-DEP02					HR-137Q-DEP03					HR-137Q-DEP04				
Sample Number					RH0033					RH0035					RH0037					RH0038				
Sample Date					22-Jul-02					22-Jul-02					22-Jul-02					22-Jul-02				
Sample Depth (Feet)					0- 0.5					0- 0.5					0- 0.5					0- 0.5				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
METALS																								
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	1.16E+04			YES	YES	2.97E+03				YES	4.04E+03				YES	1.13E+04			YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					ND					ND					ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	3.67E+00			YES		1.17E+00	B		YES		2.60E+00			YES		3.08E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	6.33E+01					3.53E+01					4.45E+01					3.41E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	1.14E+00	J	YES		YES	ND					ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	2.64E+02					9.97E+01	J				8.17E+01	J				1.35E+02				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	8.07E+00				YES	3.30E+00				YES	8.01E+00				YES	1.00E+01				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	2.17E+01		YES		YES	2.54E+00					2.60E+00					1.60E+00	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	6.51E+00					7.22E+00					4.68E+00					7.10E+00				
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	7.30E+03	J		YES	YES	4.89E+03	J		YES	YES	9.92E+03	J		YES	YES	9.80E+03	J		YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	1.44E+02		YES		YES	2.61E+01					2.00E+01					3.42E+01				
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	3.57E+02					1.36E+02					1.46E+02					3.18E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	3.69E+02			YES	YES	1.09E+02				YES	1.34E+02				YES	4.87E+01				
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	9.62E-02	J	YES			3.41E-02	J				ND					5.60E-02	J			
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	4.30E+00					1.29E+00	J				2.00E+00	J				2.72E+00				
Potassium	mg/kg	8.00E+02	NA	NA	3.25E+02	B				4.82E+02	B				5.00E+02	B				2.74E+02	B			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	1.21E+00	J	YES		YES	ND					6.20E-01	J	YES			5.50E-01	J	YES		
Sodium	mg/kg	6.34E+02	NA	NA	2.74E+01	J				2.47E+01	J				ND					2.16E+01	J			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	1.29E+01				YES	5.14E+00				YES	1.10E+01				YES	1.78E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	1.61E+01	J				4.54E+00	J				4.85E+00	J				1.21E+01	J			
VOLATILE ORGANIC COMPOUNDS																								
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	6.60E-02	J				NR					NR					2.60E-02	J			
Acetone	mg/kg	NA	7.76E+02	2.50E+00	1.20E+00	J				NR					NR					1.10E+00	J			
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	ND					NR					NR					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					NR					NR					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	5.10E-03	J				NR					NR					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					NR					NR					ND				
SEMIVOLATILE ORGANIC COMPOUNDS																								
Bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	ND					NR					NR					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-DEP01					HR-137Q-DEP02					HR-137Q-DEP03					HR-137Q-DEP04				
Sample Number					RH0033					RH0035					RH0037					RH0038				
Sample Date					22-Jul-02					22-Jul-02					22-Jul-02					22-Jul-02				
Sample Depth (Feet)					0- 0.5					0- 0.5					0- 0.5					0- 0.5				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
PESTICIDES																								
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					NR					NR					2.70E-03	J			YES
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	4.30E-03	J			YES	NR					NR					2.20E-03	J			
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	4.00E-03	J			YES	NR					NR					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	1.40E-03	J				NR					NR					1.50E-03	J			
Dieldrin	mg/kg	NA	3.88E-02	5.00E-04	1.80E-03	J			YES	NR					NR					ND				
Endosulfan I	mg/kg	NA	4.66E+01	1.19E-01	ND					NR					NR					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					NR					NR					ND				
Endosulfan sulfate	mg/kg	NA	4.66E+01	3.58E-02	ND					NR					NR					ND				
Endrin	mg/kg	NA	2.32E+00	1.00E-03	ND					NR					NR					3.20E-03	J			YES
Endrin aldehyde	mg/kg	NA	2.32E-01	1.05E-02	7.00E-03					NR					NR					ND				
Endrin ketone	mg/kg	NA	2.32E-01	1.05E-02	ND					NR					NR					ND				
Heptachlor	mg/kg	NA	1.40E-01	1.00E-01	1.90E-03	J				NR					NR					ND				
Heptachlor epoxide	mg/kg	NA	6.91E-02	1.52E-01	1.00E-03	J				NR					NR					ND				
Methoxychlor	mg/kg	NA	3.89E+01	1.99E-02	ND					NR					NR					ND				
alpha-BHC	mg/kg	NA	1.00E-01	2.50E-03	ND					NR					NR					1.20E-03	J			
alpha-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	ND					NR					NR					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	1.20E-02	J			YES	NR					NR					ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					NR					NR					ND				
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	5.00E-05	ND					NR					NR					7.30E-04	J			YES
gamma-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	ND					NR					NR					ND				
HERBICIDES																								
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	1.00E-01	ND					NR					NR					ND				
2,4-D	mg/kg	NA	7.77E+01	1.00E-01	ND					NR					NR					1.20E-02				
Dichloroprop	mg/kg	NA	6.21E+00	1.00E-01	ND					NR					NR					ND				
MCPA	mg/kg	NA	3.88E+00	1.00E-01	ND					NR					NR					ND				
MCPP	mg/kg	NA	7.77E+00	1.00E-01	ND					NR					NR					ND				
EXPLOSIVES																								
1,3,5-Trinitrobenzene	mg/kg	NA	2.32E+02	3.76E-01	ND					ND					ND					ND				
4-Amino-2,6-dinitrotoluene	mg/kg	NA	4.64E-01	NA	ND					ND					ND					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-DEP05					HR-137Q-DEP06					HR-137Q-DEP07					HR-137Q-DEP08				
Sample Number					RH0039					RH0040					RH0115					RH0116				
Sample Date					22-Jul-02					22-Jul-02					10-Mar-04					11-Mar-04				
Sample Depth (Feet)					0- 0.5					0- 0.5					0- 0.5					0- 0.5				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
METALS																								
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	1.31E+04			YES	YES	1.99E+03				YES	8.06E+03			YES	YES	6.50E+03				YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					ND					ND					ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	3.07E+00			YES		1.80E+00			YES		2.62E+00			YES		1.89E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	6.73E+01					4.23E+01					3.37E+01					1.51E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	8.41E-01	J	YES			ND					4.82E-01	J				ND				
Calcium	mg/kg	1.72E+03	NA	NA	2.71E+02					5.06E+01	J				1.42E+02					6.96E+01	J			
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	7.74E+00				YES	3.98E+00				YES	9.72E+00				YES	5.46E+00				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	9.51E+00					4.58E+00					9.68E+00					1.64E+00	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	4.84E+01		YES		YES	3.20E+00					5.52E+01		YES		YES	1.23E+01				
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	7.00E+03	J		YES	YES	6.81E+03	J		YES	YES	1.61E+04			YES	YES	5.57E+03			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	4.42E+02		YES	YES	YES	7.51E+00					2.91E+02		YES		YES	1.04E+02		YES		YES
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	4.08E+02					7.25E+01	J				2.52E+02					1.87E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	3.11E+02				YES	7.46E+02			YES	YES	4.31E+02			YES	YES	6.13E+01				
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	1.02E-01	J	YES		YES	ND					ND					ND				
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	4.29E+00					2.12E+00					3.43E+00					2.05E+00	J			
Potassium	mg/kg	8.00E+02	NA	NA	4.00E+02	B				1.73E+02	B				2.32E+02	B				1.65E+02	B			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	7.72E-01	J	YES			5.25E-01	J	YES			ND					ND				
Sodium	mg/kg	6.34E+02	NA	NA	3.23E+01	J				1.87E+01	J				8.70E+01	J				7.21E+01	J			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					6.60E-01	J		YES		ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	1.34E+01				YES	5.59E+00				YES	1.63E+01				YES	1.01E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	1.86E+01	J				4.19E+00	J				1.62E+01	J				9.27E+00	J			
VOLATILE ORGANIC COMPOUNDS																								
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	NR					NR					2.60E-02					5.30E-02	J			
Acetone	mg/kg	NA	7.76E+02	2.50E+00	NR					NR					6.20E-01					5.60E-01	J			
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	NR					NR					5.10E-03	B				4.90E-03	B			
Toluene	mg/kg	NA	1.55E+03	5.00E-02	NR					NR					ND					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	NR					NR					ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	NR					NR					ND					ND				
SEMIVOLATILE ORGANIC COMPOUNDS																								
Bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	NR					NR					ND					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-DEP05					HR-137Q-DEP06					HR-137Q-DEP07					HR-137Q-DEP08				
Sample Number					RH0039					RH0040					RH0115					RH0116				
Sample Date					22-Jul-02					22-Jul-02					10-Mar-04					11-Mar-04				
Sample Depth (Feet)					0- 0.5					0- 0.5					0- 0.5					0- 0.5				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
PESTICIDES																								
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	NR					NR					ND					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	NR					NR					ND					1.30E-03	J			
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	NR					NR					2.10E-03	J				ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	NR					NR					ND					ND				
Dieldrin	mg/kg	NA	3.88E-02	5.00E-04	NR					NR					ND					ND				
Endosulfan I	mg/kg	NA	4.66E+01	1.19E-01	NR					NR					ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	NR					NR					ND					ND				
Endosulfan sulfate	mg/kg	NA	4.66E+01	3.58E-02	NR					NR					ND					ND				
Endrin	mg/kg	NA	2.32E+00	1.00E-03	NR					NR					ND					ND				
Endrin aldehyde	mg/kg	NA	2.32E-01	1.05E-02	NR					NR					6.30E-04	J				ND				
Endrin ketone	mg/kg	NA	2.32E-01	1.05E-02	NR					NR					ND					ND				
Heptachlor	mg/kg	NA	1.40E-01	1.00E-01	NR					NR					ND					ND				
Heptachlor epoxide	mg/kg	NA	6.91E-02	1.52E-01	NR					NR					ND					ND				
Methoxychlor	mg/kg	NA	3.89E+01	1.99E-02	NR					NR					ND					ND				
alpha-BHC	mg/kg	NA	1.00E-01	2.50E-03	NR					NR					ND					ND				
alpha-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	NR					NR					ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	NR					NR					2.20E-03	J			YES	ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	NR					NR					ND					ND				
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	5.00E-05	NR					NR					ND					ND				
gamma-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	NR					NR					ND					ND				
HERBICIDES																								
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	1.00E-01	NR					NR					ND					ND				
2,4-D	mg/kg	NA	7.77E+01	1.00E-01	NR					NR					ND					ND				
Dichloroprop	mg/kg	NA	6.21E+00	1.00E-01	NR					NR					ND					ND				
MCPA	mg/kg	NA	3.88E+00	1.00E-01	NR					NR					ND					ND				
MCPP	mg/kg	NA	7.77E+00	1.00E-01	NR					NR					ND					ND				
EXPLOSIVES																								
1,3,5-Trinitrobenzene	mg/kg	NA	2.32E+02	3.76E-01	ND					ND					ND					ND				
4-Amino-2,6-dinitrotoluene	mg/kg	NA	4.64E-01	NA	ND					ND					ND					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-DEP09					HR-137Q-GP01					HR-137Q-GP02					HR-137Q-GP03				
Sample Number					RH0117					RH0001					RH0003					RH0005				
Sample Date					10-Mar-04					12-Jun-02					12-Jun-02					12-Jun-02				
Sample Depth (Feet)					0- 0.5					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
METALS																								
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	1.03E+04			YES	YES	4.83E+03				YES	7.13E+03				YES	5.25E+03				YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					ND					ND					ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	1.63E+00			YES		1.41E+00			YES		2.09E+00			YES		1.40E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	6.59E+01					1.66E+01					3.43E+01					1.77E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	1.06E+00	J	YES			ND					ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	2.01E+02					8.89E+01	J				1.01E+02	J				6.93E+01	J			
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	5.83E+00				YES	3.72E+00	J			YES	6.68E+00	J			YES	3.84E+00	J			YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	1.06E+01					1.71E+00	J				2.00E+00	J				ND				
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	3.43E+00					3.69E+00					5.42E+00					1.90E+01		YES		
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	5.64E+03			YES	YES	4.24E+03			YES	YES	6.98E+03			YES	YES	4.59E+03			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	2.22E+01					4.11E+01	J	YES			5.89E+01	J	YES		YES	1.94E+02	J	YES		YES
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	2.71E+02					1.34E+02					2.24E+02					1.35E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	9.79E+02			YES	YES	5.93E+01					1.07E+02				YES	6.43E+01				
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	5.44E-02	J				ND					3.75E-02	J				ND				
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	3.84E+00					1.61E+00	J				1.78E+00	J				7.44E-01	J			
Potassium	mg/kg	8.00E+02	NA	NA	2.15E+02	B				1.25E+02	J				1.33E+02	J				1.02E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	8.34E-01	B	YES		YES	ND					ND					ND				
Sodium	mg/kg	6.34E+02	NA	NA	9.93E+01	J				4.48E+01	J				5.66E+01	J				4.54E+01	J			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	1.15E+01				YES	6.78E+00	J			YES	1.05E+01	J			YES	7.47E+00	J			YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	1.66E+01	J				1.25E+01	J				1.37E+01	J				9.93E+00	J			
VOLATILE ORGANIC COMPOUNDS																								
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	2.40E-01	J				NR					NR					NR				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	7.80E-01	J				NR					NR					NR				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	8.90E-03	B				NR					NR					NR				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	1.40E-03	J				NR					NR					NR				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					NR					NR					NR				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					NR					NR					NR				
SEMIVOLATILE ORGANIC COMPOUNDS																								
Bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	ND					NR					NR					NR				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-DEP09					HR-137Q-GP01					HR-137Q-GP02					HR-137Q-GP03				
Sample Number					RH0117					RH0001					RH0003					RH0005				
Sample Date					10-Mar-04					12-Jun-02					12-Jun-02					12-Jun-02				
Sample Depth (Feet)					0- 0.5					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
PESTICIDES																								
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					NR					NR					NR				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					NR					NR					NR				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					NR					NR					NR				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					NR					NR					NR				
Dieldrin	mg/kg	NA	3.88E-02	5.00E-04	ND					NR					NR					NR				
Endosulfan I	mg/kg	NA	4.66E+01	1.19E-01	ND					NR					NR					NR				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					NR					NR					NR				
Endosulfan sulfate	mg/kg	NA	4.66E+01	3.58E-02	ND					NR					NR					NR				
Endrin	mg/kg	NA	2.32E+00	1.00E-03	ND					NR					NR					NR				
Endrin aldehyde	mg/kg	NA	2.32E-01	1.05E-02	ND					NR					NR					NR				
Endrin ketone	mg/kg	NA	2.32E-01	1.05E-02	ND					NR					NR					NR				
Heptachlor	mg/kg	NA	1.40E-01	1.00E-01	ND					NR					NR					NR				
Heptachlor epoxide	mg/kg	NA	6.91E-02	1.52E-01	ND					NR					NR					NR				
Methoxychlor	mg/kg	NA	3.89E+01	1.99E-02	6.00E-03	J				NR					NR					NR				
alpha-BHC	mg/kg	NA	1.00E-01	2.50E-03	ND					NR					NR					NR				
alpha-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	ND					NR					NR					NR				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					NR					NR					NR				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					NR					NR					NR				
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	5.00E-05	ND					NR					NR					NR				
gamma-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	ND					NR					NR					NR				
HERBICIDES																								
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	1.00E-01	ND					NR					NR					NR				
2,4-D	mg/kg	NA	7.77E+01	1.00E-01	ND					NR					NR					NR				
Dichloroprop	mg/kg	NA	6.21E+00	1.00E-01	ND					NR					NR					NR				
MCPA	mg/kg	NA	3.88E+00	1.00E-01	ND					NR					NR					NR				
MCPP	mg/kg	NA	7.77E+00	1.00E-01	ND					NR					NR					NR				
EXPLOSIVES																								
1,3,5-Trinitrobenzene	mg/kg	NA	2.32E+02	3.76E-01	ND					ND					ND					ND				
4-Amino-2,6-dinitrotoluene	mg/kg	NA	4.64E-01	NA	ND					ND					ND					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP04					HR-137Q-GP05					HR-137Q-GP06					HR-137Q-GP07				
Sample Number					RH0007					RH0009					RH0011					RH0013				
Sample Date					18-Jun-02					18-Jun-02					18-Jun-02					13-Jun-02				
Sample Depth (Feet)					0- 1					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
METALS																								
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	6.67E+03				YES	8.00E+03			YES	YES	8.43E+03			YES	YES	3.92E+03				YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	5.69E+00	J	YES	YES	YES	ND					ND					ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	2.52E+00			YES		1.65E+00			YES		1.68E+00			YES		1.45E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	6.31E+01					3.32E+01					2.92E+01					5.28E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	ND					ND					ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	2.02E+02					6.92E+01	J				1.09E+02					1.42E+02				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	5.21E+00				YES	4.33E+00				YES	4.26E+00				YES	2.51E+00	J			YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	1.88E+00	J				3.06E+00					1.65E+00	J				1.45E+00	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	1.78E+02		YES		YES	2.63E+00					5.40E+01		YES		YES	1.39E+01		YES		
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	6.14E+03	J		YES	YES	4.11E+03	J		YES	YES	6.31E+03	J		YES	YES	3.16E+03			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	3.46E+03	J	YES	YES	YES	1.12E+01	J				6.32E+02	J	YES	YES	YES	3.34E+02	J	YES		YES
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	2.43E+02					3.25E+02					2.87E+02					1.07E+02	J			
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	1.52E+02				YES	6.46E+01					3.20E+01					9.93E+01				
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	3.24E-02	J				3.94E-02	J				4.25E-02	J				6.15E-02	J			
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	2.69E+00					3.08E+00					2.56E+00					1.42E+00	J			
Potassium	mg/kg	8.00E+02	NA	NA	3.06E+02	J				1.96E+02	J				1.89E+02	J				1.62E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND					ND					5.26E-01	J	YES		
Sodium	mg/kg	6.34E+02	NA	NA	ND					5.36E+01	J				5.11E+01	J				5.19E+01	J			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	8.17E+00				YES	8.50E+00				YES	1.00E+01				YES	4.69E+00	J			YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	4.20E+01		YES			1.43E+01					3.31E+01					1.40E+01	J			
VOLATILE ORGANIC COMPOUNDS																								
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					NR					NR					1.90E-02	J			
Acetone	mg/kg	NA	7.76E+02	2.50E+00	1.50E-01	J				NR					NR					4.30E-01	J			
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	ND					NR					NR					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					NR					NR					3.40E-03	J			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					NR					NR					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					NR					NR					5.40E-03	J			
SEMIVOLATILE ORGANIC COMPOUNDS																								
Bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	ND					NR					NR					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP04					HR-137Q-GP05					HR-137Q-GP06					HR-137Q-GP07				
Sample Number					RH0007					RH0009					RH0011					RH0013				
Sample Date					18-Jun-02					18-Jun-02					18-Jun-02					13-Jun-02				
Sample Depth (Feet)					0- 1					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
PESTICIDES																								
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	3.60E-03	J			YES	NR					NR					2.70E-03	J			YES
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	3.20E-03	J			YES	NR					NR					5.20E-03	J			YES
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	1.90E-03	J				NR					NR					5.90E-03	J			YES
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					NR					NR					ND				
Dieldrin	mg/kg	NA	3.88E-02	5.00E-04	ND					NR					NR					ND				
Endosulfan I	mg/kg	NA	4.66E+01	1.19E-01	ND					NR					NR					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					NR					NR					ND				
Endosulfan sulfate	mg/kg	NA	4.66E+01	3.58E-02	ND					NR					NR					ND				
Endrin	mg/kg	NA	2.32E+00	1.00E-03	ND					NR					NR					1.80E-03	J			YES
Endrin aldehyde	mg/kg	NA	2.32E-01	1.05E-02	ND					NR					NR					2.20E-03	J			
Endrin ketone	mg/kg	NA	2.32E-01	1.05E-02	ND					NR					NR					ND				
Heptachlor	mg/kg	NA	1.40E-01	1.00E-01	ND					NR					NR					ND				
Heptachlor epoxide	mg/kg	NA	6.91E-02	1.52E-01	ND					NR					NR					ND				
Methoxychlor	mg/kg	NA	3.89E+01	1.99E-02	ND					NR					NR					ND				
alpha-BHC	mg/kg	NA	1.00E-01	2.50E-03	ND					NR					NR					ND				
alpha-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	ND					NR					NR					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	7.60E-04	J				NR					NR					3.60E-03				YES
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					NR					NR					ND				
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	5.00E-05	ND					NR					NR					6.00E-04	J			YES
gamma-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	ND					NR					NR					ND				
HERBICIDES																								
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	1.00E-01	ND					NR					NR					ND				
2,4-D	mg/kg	NA	7.77E+01	1.00E-01	ND					NR					NR					ND				
Dichloroprop	mg/kg	NA	6.21E+00	1.00E-01	ND					NR					NR					ND				
MCPA	mg/kg	NA	3.88E+00	1.00E-01	ND					NR					NR					ND				
MCPP	mg/kg	NA	7.77E+00	1.00E-01	ND					NR					NR					ND				
EXPLOSIVES																								
1,3,5-Trinitrobenzene	mg/kg	NA	2.32E+02	3.76E-01	ND					ND					ND					ND				
4-Amino-2,6-dinitrotoluene	mg/kg	NA	4.64E-01	NA	ND					ND					ND					7.30E-02	J			

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP08					HR-137Q-GP09					HR-137Q-GP10					HR-137Q-GP11				
Sample Number					RH0015					RH0017					RH0019					RH0021				
Sample Date					12-Jun-02					13-Jun-02					13-Jun-02					12-Jun-02				
Sample Depth (Feet)					0- 1					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
METALS																								
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	5.55E+03				YES	9.78E+03			YES	YES	5.84E+03				YES	6.97E+03				YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					ND					ND					ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	1.14E+00			YES		3.07E+00			YES		1.29E+00			YES		1.87E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	2.76E+01					6.37E+01					1.95E+01					6.22E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	ND					ND					ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	9.32E+01	J				2.32E+02					1.03E+02	J				1.09E+03				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	3.04E+00	J			YES	6.27E+00	J			YES	2.48E+00	J			YES	5.87E+00	J			YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	ND					ND					ND					ND				
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	4.02E+01		YES		YES	2.33E+01		YES			4.61E+00					3.48E+01		YES		
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	3.86E+03			YES	YES	6.72E+03			YES	YES	2.58E+03			YES	YES	6.22E+03			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	5.03E+02	J	YES	YES	YES	3.80E+02	J	YES		YES	6.14E+01	J	YES		YES	3.82E+02	J	YES		YES
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	1.74E+02					2.34E+02					1.57E+02					2.70E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	3.98E+01					3.04E+01					1.01E+01					1.03E+02				YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	2.88E-02	J				5.87E-02	J				3.45E-02	J				8.91E-02	J	YES		
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	1.57E+00	J				1.53E+00	J				1.65E+00	J				1.84E+00	J			
Potassium	mg/kg	8.00E+02	NA	NA	1.84E+02	J				2.12E+02	J				1.35E+02	J				3.44E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND					ND					6.16E-01	J	YES		
Sodium	mg/kg	6.34E+02	NA	NA	5.13E+01	J				5.68E+01	J				5.60E+01	J				5.42E+01	J			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	6.29E+00	J			YES	1.31E+01	J			YES	5.22E+00	J			YES	9.57E+00	J			YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	1.30E+01	J				2.23E+01	J				8.73E+00	J				1.90E+01	J			
VOLATILE ORGANIC COMPOUNDS																								
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					NR					ND					3.20E-02	J			
Acetone	mg/kg	NA	7.76E+02	2.50E+00	2.70E-01	J				NR					3.30E-01	J				6.50E-01	J			
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	ND					NR					ND					3.40E-03	B			
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					NR					2.10E-03	J				3.00E-03	J			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					NR					ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					NR					5.30E-02	J				1.20E-02	J			
SEMIVOLATILE ORGANIC COMPOUNDS																								
Bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	ND					NR					ND					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP08					HR-137Q-GP09					HR-137Q-GP10					HR-137Q-GP11				
Sample Number					RH0015					RH0017					RH0019					RH0021				
Sample Date					12-Jun-02					13-Jun-02					13-Jun-02					12-Jun-02				
Sample Depth (Feet)					0- 1					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
PESTICIDES																								
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					NR					ND					6.90E-03	J			YES
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					NR					3.20E-03	J			YES	1.10E-02				YES
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	1.70E-03	J				NR					6.00E-03	J			YES	4.90E-03	J			YES
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					NR					1.30E-03	J				1.30E-03	J			
Dieldrin	mg/kg	NA	3.88E-02	5.00E-04	ND					NR					8.40E-04	J			YES	1.70E-03	J			YES
Endosulfan I	mg/kg	NA	4.66E+01	1.19E-01	ND					NR					ND					2.00E-03	J			
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					NR					ND					ND				
Endosulfan sulfate	mg/kg	NA	4.66E+01	3.58E-02	ND					NR					ND					ND				
Endrin	mg/kg	NA	2.32E+00	1.00E-03	ND					NR					2.10E-03	J			YES	3.10E-03	J			YES
Endrin aldehyde	mg/kg	NA	2.32E-01	1.05E-02	8.90E-04	J				NR					ND					6.90E-03				
Endrin ketone	mg/kg	NA	2.32E-01	1.05E-02	ND					NR					ND					ND				
Heptachlor	mg/kg	NA	1.40E-01	1.00E-01	ND					NR					5.70E-04	J				1.50E-03	J			
Heptachlor epoxide	mg/kg	NA	6.91E-02	1.52E-01	3.60E-04	J				NR					ND					1.30E-03	J			
Methoxychlor	mg/kg	NA	3.89E+01	1.99E-02	ND					NR					ND					ND				
alpha-BHC	mg/kg	NA	1.00E-01	2.50E-03	1.10E-03	J				NR					1.20E-03	J				ND				
alpha-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	ND					NR					1.40E-03	J				1.10E-03	J			
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					NR					2.50E-03				YES	ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					NR					1.00E-03	J				8.00E-03	J			
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	5.00E-05	8.80E-04	J			YES	NR					7.80E-04	J			YES	ND				
gamma-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	ND					NR					ND					1.10E-03	J			
HERBICIDES																								
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	1.00E-01	9.50E-03	J				NR					ND					ND				
2,4-D	mg/kg	NA	7.77E+01	1.00E-01	ND					NR					ND					1.30E-02	J			
Dichloroprop	mg/kg	NA	6.21E+00	1.00E-01	ND					NR					ND					ND				
MCPA	mg/kg	NA	3.88E+00	1.00E-01	ND					NR					ND					ND				
MCPP	mg/kg	NA	7.77E+00	1.00E-01	ND					NR					1.50E+00	J			YES	1.60E+00	J			YES
EXPLOSIVES																								
1,3,5-Trinitrobenzene	mg/kg	NA	2.32E+02	3.76E-01	ND					ND					ND					1.00E+00				YES
4-Amino-2,6-dinitrotoluene	mg/kg	NA	4.64E-01	NA	ND					ND					ND					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP12					HR-137Q-GP13					HR-137Q-GP14					HR-137Q-GP15				
Sample Number					RH0041					RH0044					RH0048					RH0051				
Sample Date					30-Sep-03					14-Oct-03					1-Oct-03					14-Oct-03				
Sample Depth (Feet)					0- 1					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
METALS																								
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	1.91E+04		YES	YES	YES	9.20E+03			YES	YES	1.08E+04			YES	YES	8.66E+03			YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					9.81E+00	B	YES	YES	YES	ND					1.20E+01		YES	YES	YES
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	2.81E+00			YES		2.17E+00	J		YES		2.22E+00			YES		5.13E+00	J		YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	4.16E+01					4.17E+01					3.18E+01					5.25E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	ND					ND					4.16E-01	J				ND				
Calcium	mg/kg	1.72E+03	NA	NA	1.42E+02					1.32E+02					1.22E+02					2.05E+02				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.38E+01				YES	6.93E+00				YES	7.98E+00				YES	9.15E+00				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	2.24E+00	J				ND					2.86E+00					1.86E+00	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	1.66E+01		YES			2.04E+02	J	YES		YES	1.33E+01		YES			5.71E+01	J	YES		YES
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	8.69E+03			YES	YES	6.34E+03			YES	YES	7.07E+03			YES	YES	1.20E+04			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	1.33E+02		YES		YES	2.32E+03		YES	YES	YES	2.50E+02		YES		YES	1.25E+03		YES	YES	YES
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	7.33E+02					3.06E+02					4.09E+02					2.90E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	5.29E+01					5.77E+01	J				5.32E+01					1.70E+02	J			YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	ND					ND					ND					2.99E-02	J			
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	5.83E+00					2.50E+00	B				4.03E+00					2.39E+00	B			
Potassium	mg/kg	8.00E+02	NA	NA	6.89E+02					3.09E+02	B				5.59E+02	J				3.72E+02	B			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	5.44E-01	J	YES			6.65E-01	J	YES			ND					1.16E+00		YES		YES
Sodium	mg/kg	6.34E+02	NA	NA	6.43E+01	J				ND					5.52E+01	J				ND				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	2.16E+01				YES	1.24E+01				YES	1.18E+01				YES	1.55E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	2.30E+01					3.38E+01	J				1.76E+01					2.25E+01	J			
VOLATILE ORGANIC COMPOUNDS																								
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					8.90E-03	B				ND					9.90E-03	B			
Acetone	mg/kg	NA	7.76E+02	2.50E+00	4.50E-01					3.50E-01					ND					5.00E-01	J			
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	ND					ND					ND					2.20E-03	B			
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					ND					ND					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					ND					ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					ND					ND					ND				
SEMIVOLATILE ORGANIC COMPOUNDS																								
Bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	ND					ND					2.40E-01	J				ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP12					HR-137Q-GP13					HR-137Q-GP14					HR-137Q-GP15				
Sample Number					RH0041					RH0044					RH0048					RH0051				
Sample Date					30-Sep-03					14-Oct-03					1-Oct-03					14-Oct-03				
Sample Depth (Feet)					0- 1					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
PESTICIDES																								
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					ND					ND					1.50E-03	J			
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					1.30E-03	J				ND					3.50E-03	J			YES
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					ND					ND					ND				
Dieldrin	mg/kg	NA	3.88E-02	5.00E-04	ND					ND					ND					ND				
Endosulfan I	mg/kg	NA	4.66E+01	1.19E-01	ND					ND					ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					7.50E-04	J				ND					1.70E-03	J			
Endosulfan sulfate	mg/kg	NA	4.66E+01	3.58E-02	ND					ND					ND					8.20E-04	J			
Endrin	mg/kg	NA	2.32E+00	1.00E-03	ND					1.80E-03	J			YES	ND					1.90E-03	J			YES
Endrin aldehyde	mg/kg	NA	2.32E-01	1.05E-02	ND					ND					ND					7.20E-04	J			
Endrin ketone	mg/kg	NA	2.32E-01	1.05E-02	ND					1.00E-02	J				ND					ND				
Heptachlor	mg/kg	NA	1.40E-01	1.00E-01	6.30E-04	J				ND					ND					ND				
Heptachlor epoxide	mg/kg	NA	6.91E-02	1.52E-01	ND					2.30E-04	J				ND					ND				
Methoxychlor	mg/kg	NA	3.89E+01	1.99E-02	ND					ND					ND					ND				
alpha-BHC	mg/kg	NA	1.00E-01	2.50E-03	1.90E-03	J				ND					7.20E-04	J				2.90E-04	J			
alpha-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	ND					ND					ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					ND					ND					ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					3.20E-04	J				ND					ND				
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	5.00E-05	ND					ND					ND					ND				
gamma-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	ND					3.00E-04	J				ND					1.40E-03	J			
HERBICIDES																								
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	1.00E-01	ND					ND					ND					ND				
2,4-D	mg/kg	NA	7.77E+01	1.00E-01	ND					ND					ND					ND				
Dichloroprop	mg/kg	NA	6.21E+00	1.00E-01	ND					ND					ND					6.20E-03	J			
MCPA	mg/kg	NA	3.88E+00	1.00E-01	ND					ND					ND					ND				
MCPP	mg/kg	NA	7.77E+00	1.00E-01	ND					ND					ND					ND				
EXPLOSIVES																								
1,3,5-Trinitrobenzene	mg/kg	NA	2.32E+02	3.76E-01	ND					ND					ND					ND				
4-Amino-2,6-dinitrotoluene	mg/kg	NA	4.64E-01	NA	ND					ND					ND					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP16					HR-137Q-GP17					HR-137Q-GP18					HR-137Q-GP19				
Sample Number					RH0054					RH0057					RH0060					RH0063				
Sample Date					14-Oct-03					15-Oct-03					14-Oct-03					1-Oct-03				
Sample Depth (Feet)					0- 1					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
METALS																								
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	1.61E+04			YES	YES	6.66E+03				YES	1.61E+04			YES	YES	1.59E+04			YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	4.46E+00	B	YES	YES	YES	1.08E+02		YES	YES	YES	4.91E+00	B	YES	YES	YES	ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	2.73E+00	J		YES		5.31E+00	J		YES		3.32E+00	J		YES		3.25E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	3.90E+01					5.57E+01					5.75E+01					4.92E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	5.19E-01	J				3.97E-01	J				ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	9.03E+01	J				2.21E+02					1.71E+02					1.36E+02				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.12E+01				YES	7.70E+00				YES	1.18E+01				YES	1.35E+01				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	8.90E+00					1.93E+00	J				ND					ND				
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	4.57E+00	J				1.15E+02	J	YES		YES	4.12E+01	J	YES		YES	5.84E+01		YES		YES
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	8.32E+03			YES	YES	1.10E+04			YES	YES	8.78E+03			YES	YES	9.83E+03			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	1.77E+01					1.21E+04		YES	YES	YES	8.74E+02		YES	YES	YES	6.22E+02		YES	YES	YES
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	5.41E+02					2.57E+02					5.41E+02					4.07E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	1.56E+02	J			YES	1.86E+02	J			YES	7.74E+01	J				2.47E+01				
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	3.63E-02	J				ND					3.23E-02	J				4.29E-02	J			
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	5.35E+00					2.08E+00	B				4.68E+00					4.08E+00				
Potassium	mg/kg	8.00E+02	NA	NA	5.11E+02	B				3.59E+02	B				4.36E+02	B				3.95E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	6.86E-01	J	YES			1.01E+00	J	YES		YES	8.59E-01	J	YES		YES	7.39E-01	J	YES		
Sodium	mg/kg	6.34E+02	NA	NA	ND					ND					ND					2.97E+01	J			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	1.86E+01				YES	1.35E+01				YES	1.98E+01				YES	1.93E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	1.57E+01	J				2.90E+01	J				3.63E+01	J				2.60E+01				
VOLATILE ORGANIC COMPOUNDS																								
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	1.60E-02	B				NR					NR					NR				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	ND					NR					NR					NR				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	2.20E-03	B				NR					NR					NR				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					NR					NR					NR				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					NR					NR					NR				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					NR					NR					NR				
SEMIVOLATILE ORGANIC COMPOUNDS																								
Bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	ND					NR					NR					NR				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP16					HR-137Q-GP17					HR-137Q-GP18					HR-137Q-GP19				
Sample Number					RH0054					RH0057					RH0060					RH0063				
Sample Date					14-Oct-03					15-Oct-03					14-Oct-03					1-Oct-03				
Sample Depth (Feet)					0- 1					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
PESTICIDES																								
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					NR					NR					NR				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					NR					NR					NR				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					NR					NR					NR				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					NR					NR					NR				
Dieldrin	mg/kg	NA	3.88E-02	5.00E-04	3.60E-03	J			YES	NR					NR					NR				
Endosulfan I	mg/kg	NA	4.66E+01	1.19E-01	ND					NR					NR					NR				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	1.40E-03	J				NR					NR					NR				
Endosulfan sulfate	mg/kg	NA	4.66E+01	3.58E-02	ND					NR					NR					NR				
Endrin	mg/kg	NA	2.32E+00	1.00E-03	1.70E-03	J			YES	NR					NR					NR				
Endrin aldehyde	mg/kg	NA	2.32E-01	1.05E-02	ND					NR					NR					NR				
Endrin ketone	mg/kg	NA	2.32E-01	1.05E-02	ND					NR					NR					NR				
Heptachlor	mg/kg	NA	1.40E-01	1.00E-01	ND					NR					NR					NR				
Heptachlor epoxide	mg/kg	NA	6.91E-02	1.52E-01	ND					NR					NR					NR				
Methoxychlor	mg/kg	NA	3.89E+01	1.99E-02	ND					NR					NR					NR				
alpha-BHC	mg/kg	NA	1.00E-01	2.50E-03	ND					NR					NR					NR				
alpha-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	2.70E-04	J				NR					NR					NR				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					NR					NR					NR				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					NR					NR					NR				
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	5.00E-05	ND					NR					NR					NR				
gamma-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	ND					NR					NR					NR				
HERBICIDES																								
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	1.00E-01	ND					NR					NR					NR				
2,4-D	mg/kg	NA	7.77E+01	1.00E-01	ND					NR					NR					NR				
Dichloroprop	mg/kg	NA	6.21E+00	1.00E-01	ND					NR					NR					NR				
MCPA	mg/kg	NA	3.88E+00	1.00E-01	ND					NR					NR					NR				
MCPP	mg/kg	NA	7.77E+00	1.00E-01	ND					NR					NR					NR				
EXPLOSIVES																								
1,3,5-Trinitrobenzene	mg/kg	NA	2.32E+02	3.76E-01	ND					ND					ND					ND				
4-Amino-2,6-dinitrotoluene	mg/kg	NA	4.64E-01	NA	ND					ND					ND					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP20					HR-137Q-GP21					HR-137Q-GP22					HR-137Q-GP23				
Sample Number					RH0067					RH0070					RH0074					RH0077				
Sample Date					1-Oct-03					16-Oct-03					15-Oct-03					16-Oct-03				
Sample Depth (Feet)					0- 1					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
METALS																								
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	1.16E+04			YES	YES	1.17E+04			YES	YES	9.79E+03			YES	YES	1.02E+04			YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	2.38E+01	J	YES	YES	YES	ND					7.64E+00	B	YES	YES	YES	ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	2.69E+00			YES		2.53E+00			YES		2.91E+00	J		YES		2.84E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	7.01E+01					6.35E+01					6.14E+01					4.52E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	ND					6.32E-01	J				ND					3.64E-01	J			
Calcium	mg/kg	1.72E+03	NA	NA	2.26E+02					1.94E+02					1.78E+02					1.69E+02				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	8.14E+00				YES	9.23E+00				YES	7.45E+00				YES	7.59E+00				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	ND					7.06E+00					ND					2.54E+00	B			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	3.25E+02		YES	YES	YES	6.39E+00					7.48E+01	J	YES		YES	9.80E+00				
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	6.87E+03			YES	YES	7.93E+03			YES	YES	6.34E+03			YES	YES	6.65E+03			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	7.27E+03		YES	YES	YES	4.99E+01		YES			1.88E+03		YES	YES	YES	1.62E+02		YES		YES
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	3.86E+02					4.69E+02					4.11E+02					4.25E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	1.19E+02				YES	2.13E+02	J			YES	1.50E+02	J			YES	1.44E+02	J			YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	2.91E-02	J				4.70E-02	J				3.74E-02	J				3.24E-02	B			
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	3.78E+00					4.94E+00					2.17E+00	B				4.40E+00				
Potassium	mg/kg	8.00E+02	NA	NA	3.28E+02	J				4.17E+02	J				3.47E+02	B				4.80E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					1.04E+00	B	YES		YES	6.89E-01	J	YES			6.17E-01	B	YES		
Sodium	mg/kg	6.34E+02	NA	NA	5.23E+01	J				2.63E+01	J				4.35E+01	J				2.60E+01	J			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	1.45E+01				YES	1.30E+01				YES	1.22E+01				YES	1.25E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	7.26E+01		YES		YES	2.23E+01					2.87E+01	J				1.58E+01				
VOLATILE ORGANIC COMPOUNDS																								
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	NR					NR					NR					NR				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	NR					NR					NR					NR				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	NR					NR					NR					NR				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	NR					NR					NR					NR				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	NR					NR					NR					NR				
p-Cymene	mg/kg	NA	1.55E+03	NA	NR					NR					NR					NR				
SEMIVOLATILE ORGANIC COMPOUNDS																								
Bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	NR					NR					NR					NR				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP20					HR-137Q-GP21					HR-137Q-GP22					HR-137Q-GP23				
Sample Number					RH0067					RH0070					RH0074					RH0077				
Sample Date					1-Oct-03					16-Oct-03					15-Oct-03					16-Oct-03				
Sample Depth (Feet)					0- 1					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
PESTICIDES																								
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	NR					NR					NR					NR				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	NR					NR					NR					NR				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	NR					NR					NR					NR				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	NR					NR					NR					NR				
Dieldrin	mg/kg	NA	3.88E-02	5.00E-04	NR					NR					NR					NR				
Endosulfan I	mg/kg	NA	4.66E+01	1.19E-01	NR					NR					NR					NR				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	NR					NR					NR					NR				
Endosulfan sulfate	mg/kg	NA	4.66E+01	3.58E-02	NR					NR					NR					NR				
Endrin	mg/kg	NA	2.32E+00	1.00E-03	NR					NR					NR					NR				
Endrin aldehyde	mg/kg	NA	2.32E-01	1.05E-02	NR					NR					NR					NR				
Endrin ketone	mg/kg	NA	2.32E-01	1.05E-02	NR					NR					NR					NR				
Heptachlor	mg/kg	NA	1.40E-01	1.00E-01	NR					NR					NR					NR				
Heptachlor epoxide	mg/kg	NA	6.91E-02	1.52E-01	NR					NR					NR					NR				
Methoxychlor	mg/kg	NA	3.89E+01	1.99E-02	NR					NR					NR					NR				
alpha-BHC	mg/kg	NA	1.00E-01	2.50E-03	NR					NR					NR					NR				
alpha-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	NR					NR					NR					NR				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	NR					NR					NR					NR				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	NR					NR					NR					NR				
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	5.00E-05	NR					NR					NR					NR				
gamma-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	NR					NR					NR					NR				
HERBICIDES																								
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	1.00E-01	NR					NR					NR					NR				
2,4-D	mg/kg	NA	7.77E+01	1.00E-01	NR					NR					NR					NR				
Dichloroprop	mg/kg	NA	6.21E+00	1.00E-01	NR					NR					NR					NR				
MCPA	mg/kg	NA	3.88E+00	1.00E-01	NR					NR					NR					NR				
MCPP	mg/kg	NA	7.77E+00	1.00E-01	NR					NR					NR					NR				
EXPLOSIVES																								
1,3,5-Trinitrobenzene	mg/kg	NA	2.32E+02	3.76E-01	ND					ND					ND					ND				
4-Amino-2,6-dinitrotoluene	mg/kg	NA	4.64E-01	NA	ND					ND					ND					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP24					HR-137Q-GP25					HR-137Q-GP26					HR-137Q-GP27				
Sample Number					RH0080					RH0083					RH0086					RH0090				
Sample Date					6-Oct-03					16-Oct-03					6-Oct-03					30-Sep-03				
Sample Depth (Feet)					0- 1					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
METALS																								
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	7.69E+03				YES	1.07E+04			YES	YES	7.67E+03				YES	7.09E+03				YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	6.13E+00	J	YES	YES	YES	ND					ND					ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	2.94E+00			YES		4.01E+00			YES		2.35E+00			YES		2.22E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	1.57E+02		YES			2.71E+01					3.70E+01					6.11E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	ND					ND					ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	4.29E+02					1.19E+02					1.74E+02					4.41E+02				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	8.88E+00				YES	9.01E+00				YES	5.41E+00				YES	5.39E+00				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	4.97E+00					1.42E+00	B				1.85E+00	J				1.29E+00	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	1.32E+02		YES		YES	5.61E+01		YES		YES	6.76E+01		YES		YES	3.99E+00				
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	9.53E+03			YES	YES	1.03E+04			YES	YES	6.62E+03			YES	YES	4.62E+03			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	1.63E+03		YES	YES	YES	4.96E+02		YES	YES	YES	1.31E+03		YES	YES	YES	4.03E+01		YES		
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	2.48E+02					3.62E+02					2.99E+02					3.58E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	8.62E+02	J		YES	YES	4.40E+01	J				1.89E+02	J			YES	2.11E+02				YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	ND					5.12E-02	B				ND					2.80E-02	J			
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	2.90E+00					3.12E+00					3.68E+00					3.20E+00				
Potassium	mg/kg	8.00E+02	NA	NA	2.19E+02	B				3.06E+02	J				1.27E+02	B				3.57E+02	B			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	1.10E+00	B	YES		YES	9.55E-01	B	YES		YES	6.21E-01	B	YES			7.50E-01	J	YES		
Sodium	mg/kg	6.34E+02	NA	NA	ND					2.61E+01	J				ND					ND				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	1.43E+01				YES	1.76E+01				YES	1.13E+01				YES	9.38E+00				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	3.45E+01	J				2.24E+01					2.44E+01	J				1.74E+01				
VOLATILE ORGANIC COMPOUNDS																								
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	NR					NR					NR					ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	NR					NR					NR					6.90E-01	J			
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	NR					NR					NR					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	NR					NR					NR					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	NR					NR					NR					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	NR					NR					NR					ND				
SEMIVOLATILE ORGANIC COMPOUNDS																								
Bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	NR					NR					NR					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP24					HR-137Q-GP25					HR-137Q-GP26					HR-137Q-GP27				
Sample Number					RH0080					RH0083					RH0086					RH0090				
Sample Date					6-Oct-03					16-Oct-03					6-Oct-03					30-Sep-03				
Sample Depth (Feet)					0- 1					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
PESTICIDES																								
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	NR					NR					NR					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	NR					NR					NR					ND				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	NR					NR					NR					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	NR					NR					NR					ND				
Dieldrin	mg/kg	NA	3.88E-02	5.00E-04	NR					NR					NR					ND				
Endosulfan I	mg/kg	NA	4.66E+01	1.19E-01	NR					NR					NR					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	NR					NR					NR					ND				
Endosulfan sulfate	mg/kg	NA	4.66E+01	3.58E-02	NR					NR					NR					ND				
Endrin	mg/kg	NA	2.32E+00	1.00E-03	NR					NR					NR					1.10E-03	J			YES
Endrin aldehyde	mg/kg	NA	2.32E-01	1.05E-02	NR					NR					NR					ND				
Endrin ketone	mg/kg	NA	2.32E-01	1.05E-02	NR					NR					NR					2.80E-03	J			
Heptachlor	mg/kg	NA	1.40E-01	1.00E-01	NR					NR					NR					ND				
Heptachlor epoxide	mg/kg	NA	6.91E-02	1.52E-01	NR					NR					NR					ND				
Methoxychlor	mg/kg	NA	3.89E+01	1.99E-02	NR					NR					NR					ND				
alpha-BHC	mg/kg	NA	1.00E-01	2.50E-03	NR					NR					NR					1.40E-03	J			
alpha-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	NR					NR					NR					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	NR					NR					NR					ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	NR					NR					NR					ND				
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	5.00E-05	NR					NR					NR					ND				
gamma-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	NR					NR					NR					ND				
HERBICIDES																								
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	1.00E-01	NR					NR					NR					ND				
2,4-D	mg/kg	NA	7.77E+01	1.00E-01	NR					NR					NR					ND				
Dichloroprop	mg/kg	NA	6.21E+00	1.00E-01	NR					NR					NR					ND				
MCPA	mg/kg	NA	3.88E+00	1.00E-01	NR					NR					NR					1.40E+00	J			YES
MCPP	mg/kg	NA	7.77E+00	1.00E-01	NR					NR					NR					ND				
EXPLOSIVES																								
1,3,5-Trinitrobenzene	mg/kg	NA	2.32E+02	3.76E-01	ND					ND					ND					ND				
4-Amino-2,6-dinitrotoluene	mg/kg	NA	4.64E-01	NA	ND					ND					ND					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP28					HR-137Q-GP29					HR-137Q-GP30				
Sample Number					RH0091					RH0092					RH0093				
Sample Date					30-Sep-03					30-Sep-03					30-Sep-03				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
METALS																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	8.53E+03			YES	YES	1.33E+04			YES	YES	8.82E+03			YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					ND					ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	4.47E+00			YES		2.59E+00			YES		2.00E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	5.25E+01					8.12E+01					4.43E+01				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	ND					5.51E-01	J				ND				
Calcium	mg/kg	1.72E+03	NA	NA	9.51E+01	J				1.52E+02					1.33E+02				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	7.22E+00				YES	1.07E+01				YES	6.53E+00				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	4.36E+00					4.17E+00					3.49E+00				
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	1.01E+01					8.66E+00					1.54E+01		YES		
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	9.87E+03			YES	YES	8.26E+03			YES	YES	4.90E+03			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	1.13E+02		YES		YES	6.67E+01		YES		YES	2.15E+02		YES		YES
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	2.65E+02					5.57E+02					3.01E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	1.16E+02				YES	2.63E+02				YES	8.12E+01				
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	ND					ND					ND				
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	4.86E+00					4.81E+00					3.14E+00				
Potassium	mg/kg	8.00E+02	NA	NA	3.01E+02	B				9.62E+02		YES			3.22E+02	B			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND					ND				
Sodium	mg/kg	6.34E+02	NA	NA	ND					5.47E+01	J				4.90E+01	J			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	1.15E+01				YES	1.65E+01				YES	1.04E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	1.49E+01					1.70E+01					1.49E+01				
VOLATILE ORGANIC COMPOUNDS																			
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					1.60E-02	J				ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	2.30E-01					1.80E+00	J				8.60E-01	J			
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	ND					ND					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					2.40E-03	J				ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					1.70E-02					ND				
SEMIVOLATILE ORGANIC COMPOUNDS																			
Bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	ND					ND					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)					HR-137Q-GP28 RH0091 30-Sep-03 0- 1					HR-137Q-GP29 RH0092 30-Sep-03 0- 1					HR-137Q-GP30 RH0093 30-Sep-03 0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
PESTICIDES																			
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					ND					ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					2.40E-03	J				ND				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					ND					ND				
Dieldrin	mg/kg	NA	3.88E-02	5.00E-04	ND					ND					ND				
Endosulfan I	mg/kg	NA	4.66E+01	1.19E-01	ND					ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					3.70E-03	J				4.00E-03	J			
Endosulfan sulfate	mg/kg	NA	4.66E+01	3.58E-02	ND					ND					ND				
Endrin	mg/kg	NA	2.32E+00	1.00E-03	ND					ND					ND				
Endrin aldehyde	mg/kg	NA	2.32E-01	1.05E-02	ND					ND					ND				
Endrin ketone	mg/kg	NA	2.32E-01	1.05E-02	ND					ND					ND				
Heptachlor	mg/kg	NA	1.40E-01	1.00E-01	ND					ND					ND				
Heptachlor epoxide	mg/kg	NA	6.91E-02	1.52E-01	ND					ND					ND				
Methoxychlor	mg/kg	NA	3.89E+01	1.99E-02	ND					ND					ND				
alpha-BHC	mg/kg	NA	1.00E-01	2.50E-03	ND					1.50E-03	J				4.00E-04	J			
alpha-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	ND					ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					ND					ND				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					8.80E-03					ND				
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	5.00E-05	ND					1.30E-03	J			YES	ND				
gamma-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	ND					ND					ND				
HERBICIDES																			
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	1.00E-01	ND					ND					ND				
2,4-D	mg/kg	NA	7.77E+01	1.00E-01	ND					ND					ND				
Dichloroprop	mg/kg	NA	6.21E+00	1.00E-01	ND					ND					ND				
MCPA	mg/kg	NA	3.88E+00	1.00E-01	ND					ND					ND				
MCPP	mg/kg	NA	7.77E+00	1.00E-01	ND					1.10E+00	J			YES	1.90E+00	J			YES
EXPLOSIVES																			
1,3,5-Trinitrobenzene	mg/kg	NA	2.32E+02	3.76E-01	ND					ND					ND				
4-Amino-2,6-dinitrotoluene	mg/kg	NA	4.64E-01	NA	ND					ND					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)					HR-137Q-GP31 RH0094 15-Oct-03 0- 1					HR-137Q-GP32 RH0108 15-Oct-03 0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
METALS														
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	1.25E+04			YES	YES	NR				
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					NR				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	3.41E+00	J		YES		NR				
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	2.96E+01					NR				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	ND					NR				
Calcium	mg/kg	1.72E+03	NA	NA	7.96E+01	J				NR				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.08E+01				YES	NR				
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	3.04E+00					NR				
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	5.87E+00	J				NR				
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	9.73E+03			YES	YES	NR				
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	2.52E+01					2.02E+01				
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	4.76E+02					NR				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	4.93E+01	J				NR				
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	ND					NR				
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	2.89E+00	B				NR				
Potassium	mg/kg	8.00E+02	NA	NA	8.22E+02		YES			NR				
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	5.88E-01	J	YES			NR				
Sodium	mg/kg	6.34E+02	NA	NA	ND					NR				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					NR				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	1.69E+01				YES	NR				
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	1.64E+01	J				NR				
VOLATILE ORGANIC COMPOUNDS														
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					NR				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	ND					NR				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	1.00E-02	B				NR				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					NR				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	8.30E-03					NR				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					NR				
SEMIVOLATILE ORGANIC COMPOUNDS														
Bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	ND					NR				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)					HR-137Q-GP31 RH0094 15-Oct-03 0- 1					HR-137Q-GP32 RH0108 15-Oct-03 0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
PESTICIDES														
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	1.30E-03	J				NR				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	1.20E-03	J				NR				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					NR				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					NR				
Dieldrin	mg/kg	NA	3.88E-02	5.00E-04	ND					NR				
Endosulfan I	mg/kg	NA	4.66E+01	1.19E-01	ND					NR				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					NR				
Endosulfan sulfate	mg/kg	NA	4.66E+01	3.58E-02	ND					NR				
Endrin	mg/kg	NA	2.32E+00	1.00E-03	1.20E-03	J			YES	NR				
Endrin aldehyde	mg/kg	NA	2.32E-01	1.05E-02	ND					NR				
Endrin ketone	mg/kg	NA	2.32E-01	1.05E-02	ND					NR				
Heptachlor	mg/kg	NA	1.40E-01	1.00E-01	ND					NR				
Heptachlor epoxide	mg/kg	NA	6.91E-02	1.52E-01	ND					NR				
Methoxychlor	mg/kg	NA	3.89E+01	1.99E-02	4.30E-03	J				NR				
alpha-BHC	mg/kg	NA	1.00E-01	2.50E-03	2.60E-04	J				NR				
alpha-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	4.80E-03					NR				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					NR				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					NR				
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	5.00E-05	4.50E-03	J			YES	NR				
gamma-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	ND					NR				
HERBICIDES														
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	1.00E-01	ND					NR				
2,4-D	mg/kg	NA	7.77E+01	1.00E-01	ND					NR				
Dichloroprop	mg/kg	NA	6.21E+00	1.00E-01	ND					NR				
MCPA	mg/kg	NA	3.88E+00	1.00E-01	9.90E-01	J			YES	NR				
MCPP	mg/kg	NA	7.77E+00	1.00E-01	8.60E-01	J			YES	NR				
EXPLOSIVES														
1,3,5-Trinitrobenzene	mg/kg	NA	2.32E+02	3.76E-01	ND					NR				
4-Amino-2,6-dinitrotoluene	mg/kg	NA	4.64E-01	NA	ND					NR				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP33					HR-137Q-GP34					HR-137Q-GP35					HR-137Q-GP36				
Sample Number					RH0109					RH0110					RH0111					RH0112				
Sample Date					16-Oct-03					6-Oct-03					6-Oct-03					15-Oct-03				
Sample Depth (Feet)					0- 1					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
METALS																								
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	NR					NR					NR					NR				
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	NR					NR					NR					NR				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	NR					NR					NR					NR				
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	NR					NR					NR					NR				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	NR					NR					NR					NR				
Calcium	mg/kg	1.72E+03	NA	NA	NR					NR					NR					NR				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	NR					NR					NR					NR				
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	NR					NR					NR					NR				
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	NR					NR					NR					NR				
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	NR					NR					NR					NR				
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	1.72E+02		YES		YES	1.31E+02		YES		YES	1.86E+01					2.94E+01				
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	NR					NR					NR					NR				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	NR					NR					NR					NR				
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	NR					NR					NR					NR				
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	NR					NR					NR					NR				
Potassium	mg/kg	8.00E+02	NA	NA	NR					NR					NR					NR				
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	NR					NR					NR					NR				
Sodium	mg/kg	6.34E+02	NA	NA	NR					NR					NR					NR				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	NR					NR					NR					NR				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	NR					NR					NR					NR				
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	NR					NR					NR					NR				
VOLATILE ORGANIC COMPOUNDS																								
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	NR					NR					NR					NR				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	NR					NR					NR					NR				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	NR					NR					NR					NR				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	NR					NR					NR					NR				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	NR					NR					NR					NR				
p-Cymene	mg/kg	NA	1.55E+03	NA	NR					NR					NR					NR				
SEMIVOLATILE ORGANIC COMPOUNDS																								
Bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	NR					NR					NR					NR				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP33					HR-137Q-GP34					HR-137Q-GP35					HR-137Q-GP36				
Sample Number					RH0109					RH0110					RH0111					RH0112				
Sample Date					16-Oct-03					6-Oct-03					6-Oct-03					15-Oct-03				
Sample Depth (Feet)					0- 1					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
PESTICIDES																								
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	NR					NR					NR					NR				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	NR					NR					NR					NR				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	NR					NR					NR					NR				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	NR					NR					NR					NR				
Dieldrin	mg/kg	NA	3.88E-02	5.00E-04	NR					NR					NR					NR				
Endosulfan I	mg/kg	NA	4.66E+01	1.19E-01	NR					NR					NR					NR				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	NR					NR					NR					NR				
Endosulfan sulfate	mg/kg	NA	4.66E+01	3.58E-02	NR					NR					NR					NR				
Endrin	mg/kg	NA	2.32E+00	1.00E-03	NR					NR					NR					NR				
Endrin aldehyde	mg/kg	NA	2.32E-01	1.05E-02	NR					NR					NR					NR				
Endrin ketone	mg/kg	NA	2.32E-01	1.05E-02	NR					NR					NR					NR				
Heptachlor	mg/kg	NA	1.40E-01	1.00E-01	NR					NR					NR					NR				
Heptachlor epoxide	mg/kg	NA	6.91E-02	1.52E-01	NR					NR					NR					NR				
Methoxychlor	mg/kg	NA	3.89E+01	1.99E-02	NR					NR					NR					NR				
alpha-BHC	mg/kg	NA	1.00E-01	2.50E-03	NR					NR					NR					NR				
alpha-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	NR					NR					NR					NR				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	NR					NR					NR					NR				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	NR					NR					NR					NR				
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	5.00E-05	NR					NR					NR					NR				
gamma-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	NR					NR					NR					NR				
HERBICIDES																								
2,2-Dichloropropanoic Acid	mg/kg		2.33E+02	1.00E-01	NR					NR					NR					NR				
2,4-D	mg/kg	NA	7.77E+01	1.00E-01	NR					NR					NR					NR				
Dichloroprop	mg/kg	NA	6.21E+00	1.00E-01	NR					NR					NR					NR				
MCPA	mg/kg	NA	3.88E+00	1.00E-01	NR					NR					NR					NR				
MCPP	mg/kg	NA	7.77E+00	1.00E-01	NR					NR					NR					NR				
EXPLOSIVES																								
1,3,5-Trinitrobenzene	mg/kg	NA	2.32E+02	3.76E-01	NR					NR					NR					NR				
4-Amino-2,6-dinitrotoluene	mg/kg	NA	4.64E-01	NA	NR					NR					NR					NR				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP37					HR-137Q-GP38					HR-137Q-GP39					HR-137Q-GP40				
Sample Number					RH0113					RH0103					RH0104					RH0105				
Sample Date					6-Oct-03					15-Oct-03					16-Oct-03					6-Oct-03				
Sample Depth (Feet)					0- 1					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
METALS																								
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	NR					NR					NR					NR				
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	NR					NR					NR					NR				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	NR					NR					NR					NR				
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	NR					NR					NR					NR				
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	NR					NR					NR					NR				
Calcium	mg/kg	1.72E+03	NA	NA	NR					NR					NR					NR				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	NR					NR					NR					NR				
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	NR					NR					NR					NR				
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	NR					NR					NR					NR				
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	NR					NR					NR					NR				
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	5.98E+01		YES		YES	4.74E+01		YES			2.78E+01					1.21E+01				
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	NR					NR					NR					NR				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	NR					NR					NR					NR				
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	NR					NR					NR					NR				
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	NR					NR					NR					NR				
Potassium	mg/kg	8.00E+02	NA	NA	NR					NR					NR					NR				
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	NR					NR					NR					NR				
Sodium	mg/kg	6.34E+02	NA	NA	NR					NR					NR					NR				
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	NR					NR					NR					NR				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	NR					NR					NR					NR				
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	NR					NR					NR					NR				
VOLATILE ORGANIC COMPOUNDS																								
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	NR					NR					NR					NR				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	NR					NR					NR					NR				
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	NR					NR					NR					NR				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	NR					NR					NR					NR				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	NR					NR					NR					NR				
p-Cymene	mg/kg	NA	1.55E+03	NA	NR					NR					NR					NR				
SEMIVOLATILE ORGANIC COMPOUNDS																								
Bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	NR					NR					NR					NR				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP37					HR-137Q-GP38					HR-137Q-GP39					HR-137Q-GP40				
Sample Number					RH0113					RH0103					RH0104					RH0105				
Sample Date					6-Oct-03					15-Oct-03					16-Oct-03					6-Oct-03				
Sample Depth (Feet)					0- 1					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
PESTICIDES																								
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	NR					NR					NR					NR				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	NR					NR					NR					NR				
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	NR					NR					NR					NR				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	NR					NR					NR					NR				
Dieldrin	mg/kg	NA	3.88E-02	5.00E-04	NR					NR					NR					NR				
Endosulfan I	mg/kg	NA	4.66E+01	1.19E-01	NR					NR					NR					NR				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	NR					NR					NR					NR				
Endosulfan sulfate	mg/kg	NA	4.66E+01	3.58E-02	NR					NR					NR					NR				
Endrin	mg/kg	NA	2.32E+00	1.00E-03	NR					NR					NR					NR				
Endrin aldehyde	mg/kg	NA	2.32E-01	1.05E-02	NR					NR					NR					NR				
Endrin ketone	mg/kg	NA	2.32E-01	1.05E-02	NR					NR					NR					NR				
Heptachlor	mg/kg	NA	1.40E-01	1.00E-01	NR					NR					NR					NR				
Heptachlor epoxide	mg/kg	NA	6.91E-02	1.52E-01	NR					NR					NR					NR				
Methoxychlor	mg/kg	NA	3.89E+01	1.99E-02	NR					NR					NR					NR				
alpha-BHC	mg/kg	NA	1.00E-01	2.50E-03	NR					NR					NR					NR				
alpha-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	NR					NR					NR					NR				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	NR					NR					NR					NR				
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	NR					NR					NR					NR				
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	5.00E-05	NR					NR					NR					NR				
gamma-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	NR					NR					NR					NR				
HERBICIDES																								
2,2-Dichloropropanoic Acid	mg/kg		2.33E+02	1.00E-01	NR					NR					NR					NR				
2,4-D	mg/kg	NA	7.77E+01	1.00E-01	NR					NR					NR					NR				
Dichloroprop	mg/kg	NA	6.21E+00	1.00E-01	NR					NR					NR					NR				
MCPA	mg/kg	NA	3.88E+00	1.00E-01	NR					NR					NR					NR				
MCPP	mg/kg	NA	7.77E+00	1.00E-01	NR					NR					NR					NR				
EXPLOSIVES																								
1,3,5-Trinitrobenzene	mg/kg	NA	2.32E+02	3.76E-01	NR					NR					NR					NR				
4-Amino-2,6-dinitrotoluene	mg/kg	NA	4.64E-01	NA	NR					NR					NR					NR				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)					HR-137Q-GP41 RH0106 6-Oct-03 0- 1					HR-137Q-GP42 RH0107 16-Oct-03 0- 1					HR-137Q-MW01 RH0023 11-Jun-02 0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
METALS																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	NR					NR					5.72E+03				YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	NR					NR					5.21E+00	J	YES	YES	YES
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	NR					NR					1.77E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	NR					NR					9.85E+01	J			
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	NR					NR					ND				
Calcium	mg/kg	1.72E+03	NA	NA	NR					NR					4.76E+02				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	NR					NR					4.31E+00				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	NR					NR					1.95E+00	J			
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	NR					NR					3.15E+01		YES		
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	NR					NR					6.39E+03			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	2.09E+01					3.49E+01					7.17E+02		YES	YES	YES
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	NR					NR					2.96E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	NR					NR					1.44E+02				YES
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	NR					NR					4.92E-02	J			
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	NR					NR					1.77E+00	B			
Potassium	mg/kg	8.00E+02	NA	NA	NR					NR					5.82E+02				
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	NR					NR					ND				
Sodium	mg/kg	6.34E+02	NA	NA	NR					NR					5.67E+01	J			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	NR					NR					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	NR					NR					8.20E+00				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	NR					NR					1.61E+01	J			
VOLATILE ORGANIC COMPOUNDS																			
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	NR					NR					ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	NR					NR					3.30E-01	J			
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	NR					NR					ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	NR					NR					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	NR					NR					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	NR					NR					4.40E-03	J			
SEMIVOLATILE ORGANIC COMPOUNDS																			
Bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	NR					NR					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-GP41					HR-137Q-GP42					HR-137Q-MW01				
Sample Number					RH0106					RH0107					RH0023				
Sample Date					6-Oct-03					16-Oct-03					11-Jun-02				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
PESTICIDES																			
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	NR					NR					8.30E-03	J			YES
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	NR					NR					5.40E-03	J			YES
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	NR					NR					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	NR					NR					ND				
Dieldrin	mg/kg	NA	3.88E-02	5.00E-04	NR					NR					ND				
Endosulfan I	mg/kg	NA	4.66E+01	1.19E-01	NR					NR					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	NR					NR					ND				
Endosulfan sulfate	mg/kg	NA	4.66E+01	3.58E-02	NR					NR					ND				
Endrin	mg/kg	NA	2.32E+00	1.00E-03	NR					NR					ND				
Endrin aldehyde	mg/kg	NA	2.32E-01	1.05E-02	NR					NR					ND				
Endrin ketone	mg/kg	NA	2.32E-01	1.05E-02	NR					NR					ND				
Heptachlor	mg/kg	NA	1.40E-01	1.00E-01	NR					NR					ND				
Heptachlor epoxide	mg/kg	NA	6.91E-02	1.52E-01	NR					NR					ND				
Methoxychlor	mg/kg	NA	3.89E+01	1.99E-02	NR					NR					ND				
alpha-BHC	mg/kg	NA	1.00E-01	2.50E-03	NR					NR					ND				
alpha-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	NR					NR					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	NR					NR					2.30E-03	J			YES
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	NR					NR					1.80E-03	J			
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	5.00E-05	NR					NR					ND				
gamma-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	NR					NR					ND				
HERBICIDES																			
2,2-Dichloropropanoic Acid	mg/kg		2.33E+02	1.00E-01	NR					NR					ND				
2,4-D	mg/kg	NA	7.77E+01	1.00E-01	NR					NR					ND				
Dichloroprop	mg/kg	NA	6.21E+00	1.00E-01	NR					NR					ND				
MCPA	mg/kg	NA	3.88E+00	1.00E-01	NR					NR					ND				
MCPP	mg/kg	NA	7.77E+00	1.00E-01	NR					NR					ND				
EXPLOSIVES																			
1,3,5-Trinitrobenzene	mg/kg	NA	2.32E+02	3.76E-01	NR					NR					ND				
4-Amino-2,6-dinitrotoluene	mg/kg	NA	4.64E-01	NA	NR					NR					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location					HR-137Q-MW02					HR-137Q-MW03					HR-137Q-MW04				
Sample Number					RH0026					RH0029					RH0031				
Sample Date					11-Jun-02					12-Jun-02					10-Jun-02				
Sample Depth (Feet)					0- 1					0- 1					0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
METALS																			
Aluminum	mg/kg	1.63E+04	7.80E+03	5.00E+01	6.06E+03				YES	4.59E+03				YES	8.93E+03			YES	YES
Antimony	mg/kg	1.99E+00	3.11E+00	3.50E+00	ND					ND					ND				
Arsenic	mg/kg	1.37E+01	4.26E-01	1.00E+01	2.46E+00			YES		1.74E+00			YES		2.33E+00			YES	
Barium	mg/kg	1.24E+02	5.47E+02	1.65E+02	5.00E+01	J				4.31E+01					4.89E+01	J			
Beryllium	mg/kg	8.00E-01	9.60E+00	1.10E+00	ND					ND					ND				
Calcium	mg/kg	1.72E+03	NA	NA	1.11E+03					1.50E+02					1.22E+02				
Chromium	mg/kg	3.70E+01	2.32E+01	4.00E-01	1.92E+01				YES	2.76E+00	J			YES	5.71E+00				YES
Cobalt	mg/kg	1.52E+01	4.68E+02	2.00E+01	2.70E+00					ND					ND				
Copper	mg/kg	1.27E+01	3.13E+02	4.00E+01	2.18E+01		YES			1.34E+02		YES		YES	1.44E+02		YES		YES
Iron	mg/kg	3.42E+04	2.34E+03	2.00E+02	1.27E+04			YES	YES	3.18E+03			YES	YES	5.84E+03			YES	YES
Lead	mg/kg	4.01E+01	4.00E+02	5.00E+01	3.94E+02		YES		YES	1.71E+03	J	YES	YES	YES	2.33E+03		YES	YES	YES
Magnesium	mg/kg	1.03E+03	NA	4.40E+05	7.06E+02					1.68E+02					2.36E+02				
Manganese	mg/kg	1.58E+03	3.63E+02	1.00E+02	2.16E+02				YES	7.35E+01					8.25E+01				
Mercury	mg/kg	8.00E-02	2.33E+00	1.00E-01	6.12E-02	J				4.31E-02	J				7.16E-02	J			
Nickel	mg/kg	1.03E+01	1.54E+02	3.00E+01	1.44E+00	B				1.43E+00	J				2.01E+00	B			
Potassium	mg/kg	8.00E+02	NA	NA	1.94E+02	J				2.09E+02	J				1.46E+02	J			
Selenium	mg/kg	4.80E-01	3.91E+01	8.10E-01	ND					ND					ND				
Sodium	mg/kg	6.34E+02	NA	NA	5.01E+01	J				4.49E+01	J				4.52E+01	J			
Thallium	mg/kg	3.43E+00	5.08E-01	1.00E+00	ND					ND					ND				
Vanadium	mg/kg	5.88E+01	5.31E+01	2.00E+00	1.34E+01				YES	5.47E+00	J			YES	1.12E+01				YES
Zinc	mg/kg	4.06E+01	2.34E+03	5.00E+01	1.46E+01	J				1.58E+01	J				3.28E+01	J			
VOLATILE ORGANIC COMPOUNDS																			
2-Butanone	mg/kg	NA	4.66E+03	8.96E+01	ND					1.70E-02	J				ND				
Acetone	mg/kg	NA	7.76E+02	2.50E+00	3.70E-01	J				5.10E-01	J				2.10E-01	J			
Methylene chloride	mg/kg	NA	8.41E+01	2.00E+00	ND					1.80E-03	B				ND				
Toluene	mg/kg	NA	1.55E+03	5.00E-02	ND					ND					ND				
Trichlorofluoromethane	mg/kg	NA	2.33E+03	1.00E-01	ND					ND					ND				
p-Cymene	mg/kg	NA	1.55E+03	NA	ND					ND					4.90E-03	J			
SEMIVOLATILE ORGANIC COMPOUNDS																			
Bis(2-Ethylhexyl)phthalate	mg/kg	NA	4.52E+01	9.30E-01	ND					ND					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)					HR-137Q-MW02 RH0026 11-Jun-02 0- 1					HR-137Q-MW03 RH0029 12-Jun-02 0- 1					HR-137Q-MW04 RH0031 10-Jun-02 0- 1				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV	Results	VQ	>BKG	>SSSL	>ESV
PESTICIDES																			
4,4'-DDD	mg/kg	NA	2.54E+00	2.50E-03	ND					4.40E-03	J			YES	ND				
4,4'-DDE	mg/kg	NA	1.79E+00	2.50E-03	ND					3.20E-03	J			YES	4.20E-03	J			YES
4,4'-DDT	mg/kg	NA	1.79E+00	2.50E-03	ND					ND					ND				
Aldrin	mg/kg	NA	3.65E-02	2.50E-03	ND					ND					ND				
Dieldrin	mg/kg	NA	3.88E-02	5.00E-04	ND					1.00E-03	J			YES	ND				
Endosulfan I	mg/kg	NA	4.66E+01	1.19E-01	ND					ND					ND				
Endosulfan II	mg/kg	NA	4.66E+01	1.19E-01	ND					ND					ND				
Endosulfan sulfate	mg/kg	NA	4.66E+01	3.58E-02	ND					ND					ND				
Endrin	mg/kg	NA	2.32E+00	1.00E-03	ND					1.60E-03	J			YES	ND				
Endrin aldehyde	mg/kg	NA	2.32E-01	1.05E-02	ND					3.00E-03	J				ND				
Endrin ketone	mg/kg	NA	2.32E-01	1.05E-02	ND					ND					ND				
Heptachlor	mg/kg	NA	1.40E-01	1.00E-01	ND					1.60E-03	J				ND				
Heptachlor epoxide	mg/kg	NA	6.91E-02	1.52E-01	ND					8.10E-04	J				ND				
Methoxychlor	mg/kg	NA	3.89E+01	1.99E-02	ND					ND					ND				
alpha-BHC	mg/kg	NA	1.00E-01	2.50E-03	ND					ND					ND				
alpha-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	ND					ND					ND				
beta-BHC	mg/kg	NA	3.50E-01	1.00E-03	ND					ND					2.20E-03				YES
delta-BHC	mg/kg	NA	2.33E+00	9.94E+00	ND					ND					ND				
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	5.00E-05	ND					ND					ND				
gamma-Chlordane	mg/kg	NA	1.69E+00	1.00E-01	ND					6.00E-04	J				ND				
HERBICIDES																			
2,2-Dichloropropanoic Acid	mg/kg		2.33E+02	1.00E-01	ND					6.60E-03	J				ND				
2,4-D	mg/kg	NA	7.77E+01	1.00E-01	ND					ND					ND				
Dichloroprop	mg/kg	NA	6.21E+00	1.00E-01	ND					ND					ND				
MCPA	mg/kg	NA	3.88E+00	1.00E-01	ND					ND					ND				
MCPP	mg/kg	NA	7.77E+00	1.00E-01	ND					ND					1.50E+00	J			YES
EXPLOSIVES																			
1,3,5-Trinitrobenzene	mg/kg	NA	2.32E+02	3.76E-01	ND					ND					ND				
4-Amino-2,6-dinitrotoluene	mg/kg	NA	4.64E-01	NA	ND					ND					ND				

Table 4-1

Surface and Depositional Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Analyses performed using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods.

[a] BKG - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in SAIC, 1998, *Final Background Metals Survey Report, Fort McClellan, Alabama*, July.
[b] Residential human health site-specific screening level (SSSL) as given in IT, 2000, *Final Human Health and Ecological Screening Values and PAH Background Summary Report, Fort McClellan, Calhoun County, Alabama*, July.
B - Analyte detected in laboratory or field blank at concentration greater than the reporting limit.
J - Compound was positively identified; reported value is an estimated concentration.
mg/kg - Milligrams per kilogram.
NA - Not available.
ND - Not detected.
NR - Not requested.
VQ - Data validation qualifier.

Table 4-2

XRF Grid Sample Screening Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Location	Sample Date	XRF Result (mg/kg)	
		Lead	Copper
HR-137Q-0_0	5-Feb-03	355	< 48
HR-137Q-E100_0	29-Apr-03	1760	141.7
HR-137Q-E200_0	29-Apr-03	823	< 47.25
HR-137Q-E300_0	30-Apr-03	120	< 43.5
HR-137Q-E400_0	30-Apr-03	3859	135.6
HR-137Q-E500_0	**22-May-03**	**6010 (13,500)**	**319 (316)**
HR-137Q-E600_0	1-May-03	249	< 35.7
HR-137Q-W100_0	29-Apr-03	48	< 48.45
HR-137Q-W200_0	19-May-03	32	< 46.2
HR-137Q-W300_0	19-May-03	288	< 48.3
HR-137Q-W400_0	19-May-03	39	< 46.2
HR-137Q-W500_0	19-May-03	ND	< 54.3
HR-137Q-N100_0	5-Feb-03	86	< 45.6
HR-137Q-N100_E100	**22-May-03**	**843 (1,120)**	**< 49.5 (58.1)**
HR-137Q-N100_E200	30-Apr-03	91	< 37.65
HR-137Q-N100_E300	30-Apr-03	204	< 46.35
HR-137Q-N100_E400	30-Apr-03	33	< 45.6
HR-137Q-N100_E500	1-May-03	74	< 47.55
HR-137Q-N100_E600	1-May-03	45	< 43.5
HR-137Q-N100_W100	5-Feb-03	73	< 44.55
HR-137Q-N100_W200	5-Feb-03	97	< 38.55
HR-137Q-N100_W300	19-May-03	95	< 50.1
HR-137Q-N100_W400	19-May-03	18	< 46.5
HR-137Q-N100_W500	19-May-03	21	< 47.4
HR-137Q-N200_0	5-Feb-03	152	< 47.1
HR-137Q-N200_E100	20-May-03	624	< 52.35
HR-137Q-N200_E200	30-Apr-03	57	< 36.6
HR-137Q-N200_E300	30-Apr-03	38	< 41.85
HR-137Q-N200_W100	20-May-03	142	< 46.35
HR-137Q-N200_W200	20-May-03	419	< 56.4
HR-137Q-N200_W300	**22-May-03**	**125 (155)**	**< 51.6 (22.8)**
HR-137Q-N200_W400	**22-May-03**	**23 (37.5)**	**< 45.6 (8.04)**
HR-137Q-N200_W500	19-May-03	20	< 49.8
HR-137Q-N200_W600	20-May-03	14	< 48.15
HR-137Q-N200_W700	20-May-03	ND	< 46.35
HR-137Q-N300_0	20-May-03	56	< 46.95
HR-137Q-N300_E100	20-May-03	177	< 50.7
HR-137Q-N300_E200	20-May-03	56	< 45.9
HR-137Q-N300_E300	30-Apr-03	39	< 55.95
HR-137Q-N300_W100	20-May-03	69	< 48.3
HR-137Q-N300_W200	20-May-03	137	< 52.5
HR-137Q-N300_W300	19-May-03	20	< 40.05
HR-137Q-N300_W400	19-May-03	24	< 49.2
HR-137Q-N300_W500	19-May-03	21	< 45.3
HR-137Q-N300_W600	20-May-03	28	< 46.35
HR-137Q-N300_W700	20-May-03	26	< 53.85
HR-137Q-N400_0	20-May-03	64	< 44.85
HR-137Q-N400_E100	20-May-03	94	< 44.4

Table 4-2

XRF Grid Sample Screening Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Location	Sample Date	XRF Result (mg/kg)	
		Lead	Copper
HR-137Q-N400_E200	21-May-03	31	< 53.25
HR-137Q-N400_E300	21-May-03	26	< 54.15
HR-137Q-N400_W100	20-May-03	91	< 56.4
HR-137Q-N400_W200	20-May-03	37	< 52.5
HR-137Q-N400_W300	19-May-03	62	< 49.35
HR-137Q-N400_W400	19-May-03	19	< 52.05
HR-137Q-N400_W500	20-May-03	23	< 52.65
HR-137Q-N400_W600	**22-May-03**	**16 (14.5)**	**< 45.45 (5.53)**
HR-137Q-N400_W700	20-May-03	17	< 51.75
HR-137Q-N500_0	21-May-03	70	< 38.4
HR-137Q-N500_E100	21-May-03	18	< 55.35
HR-137Q-N500_E200	21-May-03	ND	< 51.15
HR-137Q-N500_E300	21-May-03	21	< 53.4
HR-137Q-N500_W100	21-May-03	ND	< 51
HR-137Q-N500_W200	21-May-03	25	< 60.9
HR-137Q-N500_W300	19-May-03	234	< 45.15
HR-137Q-N500_W400	19-May-03	23	< 47.7
HR-137Q-N500_W500	20-May-03	ND	< 50.85
HR-137Q-N500_W600	20-May-03	ND	< 48.3
HR-137Q-N500_W700	20-May-03	ND	< 56.4
HR-137Q-S080_E680	1-May-03	39	< 42.75
HR-137Q-S100_0	5-Feb-03	3878	163
HR-137Q-S100_E100	29-Apr-03	2589	184.7
HR-137Q-S100_E200	29-Apr-03	261	< 45.15
HR-137Q-S100_E300	29-Apr-03	308	130.7
HR-137Q-S100_E400	30-Apr-03	2309	184.6
HR-137Q-S100_E500	1-May-03	582	< 45.9
HR-137Q-S100_E600	1-May-03	600	147.1
HR-137Q-S100_W100	**22-May-03**	**312 (441)**	**< 52.8 (45.4)**
HR-137Q-S100_W200	19-May-03	634	< 51
HR-137Q-S100_W300	19-May-03	666	< 45.45
HR-137Q-S100_W400	19-May-03	39	< 48.15
HR-137Q-S100_W500	19-May-03	18	< 48.15
HR-137Q-S200_0	29-Apr-03	670	45.4
HR-137Q-S200_E100	29-Apr-03	4179	605.2
HR-137Q-S200_E200	29-Apr-03	424	< 43.35
HR-137Q-S200_E300	29-Apr-03	119	< 41.4
HR-137Q-S200_E400	30-Apr-03	578	< 44.55
HR-137Q-S200_E500	14-May-03	924	< 46.2
HR-137Q-S200_E600	1-May-03	1030	60.4
HR-137Q-S200_E685	1-May-03	235	< 47.4
HR-137Q-S200_W100	29-Apr-03	48	< 35.7
HR-137Q-S200_W200	19-May-03	133	< 56.7
HR-137Q-S200_W300	19-May-03	145	< 54
HR-137Q-S275_E575	14-May-03	2149	80.9
HR-137Q-S300_0	15-May-03	234	52.7
HR-137Q-S300_E100	15-May-03	280	< 43.05
HR-137Q-S300_E200	30-Apr-03	138	< 46.5

Table 4-2

XRF Grid Sample Screening Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Location	Sample Date	XRF Result (mg/kg)	
		Lead	Copper
HR-137Q-S300_E300	30-Apr-03	41	< 37.35
HR-137Q-S300_E400	30-Apr-03	7245	131.7
HR-137Q-S300_E500	14-May-03	182	< 53.1
HR-137Q-S300_E600	1-May-03	60	< 46.65
HR-137Q-S300_E700	**22-May-03**	**164 (238)**	**< 45.15 (32.8)**
HR-137Q-S300_W100	15-May-03	126	< 39.45
HR-137Q-S300_W200	15-May-03	335	< 40.95
HR-137Q-S300_W300	15-May-03	669	61.5
HR-137Q-S300_W400	15-May-03	106	< 39.6
HR-137Q-S400_0	15-May-03	67	< 41.7
HR-137Q-S400_E100	15-May-03	557	< 45.15
HR-137Q-S400_E200	30-Apr-03	400	< 45.6
HR-137Q-S400_E300	14-May-03	287	< 35.4
HR-137Q-S400_E400	14-May-03	119	< 40.5
HR-137Q-S400_E500	14-May-03	436	< 43.05
HR-137Q-S400_E600	14-May-03	1859	< 44.7
HR-137Q-S400_E700	14-May-03	ND	< 41.7
HR-137Q-S400_W100	15-May-03	192	< 36.75
HR-137Q-S400_W200	15-May-03	1410	142.7
HR-137Q-S400_W300	15-May-03	1110	212.2
HR-137Q-S400_W400	15-May-03	86	< 36
HR-137Q-S500_0	15-May-03	47	< 40.95
HR-137Q-S500_E100	15-May-03	117	< 44.1
HR-137Q-S500_E200	30-Apr-03	52	< 39.75
HR-137Q-S500_E300	14-May-03	164	< 31.2
HR-137Q-S500_E400	14-May-03	1420	< 32.7
HR-137Q-S500_E500	14-May-03	40	< 40.8
HR-137Q-S500_E600	14-May-03	50	< 49.05
HR-137Q-S500_W100	15-May-03	331	< 44.55
HR-137Q-S500_W200	15-May-03	2450	187.7
HR-137Q-S500_W300	15-May-03	456	100.2
HR-137Q-S500_W400	15-May-03	112	< 40.05
HR-137Q-S600_0	27-May-03	40	< 57.75
HR-137Q-S600_E300	14-May-03	22	< 36.3
HR-137Q-S600_E400	14-May-03	104	< 46.5
HR-137Q-S600_W100	15-May-03	282	< 43.2
HR-137Q-S600_W200	15-May-03	490	52.6
HR-137Q-S600_W300	15-May-03	148	< 41.85
HR-137Q-S700_0	27-May-03	17	< 56.55
HR-137Q-S700_W100	27-May-03	295	< 55.2
HR-137Q-S700_W200	27-May-03	44	< 51.75
HR-137Q-S700_W300	27-May-03	41	< 49.05
HR-137Q-S800_W100	27-May-03	27	< 55.2

Bold entries are locations selected for confirmational analysis; confirmation results are listed parenthetically.
mg/kg - Milligrams per kilogram.
XRF - X-ray fluorescence.

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location				HR-137Q-GP01				HR-137Q-GP02				HR-137Q-GP03				HR-137Q-GP04			
Sample Number				RH0002				RH0004				RH0006				RH0008			
Sample Date				12-Jun-02				12-Jun-02				12-Jun-02				18-Jun-02			
Sample Depth (Feet)				4 - 6				4 - 6				4 - 6				1 - 2			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	9.37E+03			YES	6.28E+03				2.84E+03				6.03E+03			
Antimony	mg/kg	1.31E+00	3.11E+00	ND				ND				ND				9.02E+00	J	YES	YES
Arsenic	mg/kg	1.83E+01	4.26E-01	2.22E+00			YES	2.27E+00			YES	1.72E+00			YES	2.28E+00			YES
Barium	mg/kg	2.34E+02	5.47E+02	4.73E+00				5.41E+00				1.03E+01				9.01E+01			
Beryllium	mg/kg	8.60E-01	9.60E+00	ND				ND				4.40E-01	J			ND			
Cadmium	mg/kg	2.20E-01	6.25E+00	ND				ND				ND				ND			
Calcium	mg/kg	6.37E+02	NA	3.21E+01	J			6.93E+01	J			1.59E+01	J			2.28E+02			
Chromium	mg/kg	3.83E+01	2.32E+01	1.53E+01	J			8.99E+00	J			8.56E+00	J			7.31E+00			
Cobalt	mg/kg	1.75E+01	4.68E+02	ND				ND				3.91E+00	J			1.68E+00	J		
Copper	mg/kg	1.94E+01	3.13E+02	1.95E+00	J			1.54E+00	J			1.12E+01				2.69E+02		YES	
Iron	mg/kg	4.48E+04	2.34E+03	1.11E+04			YES	8.39E+03			YES	2.86E+04			YES	6.60E+03	J		YES
Lead	mg/kg	3.85E+01	4.00E+02	3.60E+00	J			5.19E+00	J			1.84E+01	J			4.39E+03	J	YES	YES
Magnesium	mg/kg	7.66E+02	NA	8.62E+01	J			8.44E+01	J			1.79E+02				2.19E+02			
Manganese	mg/kg	1.36E+03	3.63E+02	3.99E+00				1.11E+01				2.61E+02				1.41E+02			
Mercury	mg/kg	7.00E-02	2.33E+00	ND				ND				ND				3.03E-02	J		
Nickel	mg/kg	1.29E+01	1.54E+02	9.37E-01	J			ND				7.30E+00	J			2.82E+00			
Potassium	mg/kg	7.11E+02	NA	1.07E+02	J			ND				4.18E+02	J			2.64E+02	J		
Selenium	mg/kg	4.70E-01	3.91E+01	ND				ND				ND				ND			
Sodium	mg/kg	7.02E+02	NA	5.34E+01	J			4.79E+01	J			5.41E+01	J			4.01E+01	J		
Thallium	mg/kg	1.40E+00	5.08E-01	ND				ND				7.33E-01	J		YES	ND			
Vanadium	mg/kg	6.49E+01	5.31E+01	2.42E+01	J			1.53E+01	J			1.22E+01	J			7.93E+00			
Zinc	mg/kg	3.49E+01	2.34E+03	6.36E+00	J			8.75E+00	J			8.00E+00	J			5.51E+01		YES	
VOLATILE ORGANIC COMPOUNDS																			
2-Butanone	mg/kg	NA	4.66E+03	NR				NR				NR				ND			
Acetone	mg/kg	NA	7.76E+02	NR				NR				NR				1.40E-01	J		
Methylene chloride	mg/kg	NA	8.41E+01	NR				NR				NR				ND			
Toluene	mg/kg	NA	1.55E+03	NR				NR				NR				ND			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	NR				NR				NR				ND			
p-Cymene	mg/kg	NA	1.55E+03	NR				NR				NR				ND			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)				HR-137Q-GP01 RH0002 12-Jun-02 4 - 6				HR-137Q-GP02 RH0004 12-Jun-02 4 - 6				HR-137Q-GP03 RH0006 12-Jun-02 4 - 6				HR-137Q-GP04 RH0008 18-Jun-02 1 - 2			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
PESTICIDES																			
4,4'-DDT	mg/kg	NA	1.79E+00	NR				NR				NR				6.20E-03	J		
Aldrin	mg/kg	NA	3.65E-02	NR				NR				NR				ND			
Endrin	mg/kg	NA	2.32E+00	NR				NR				NR				5.10E-03	J		
Endrin aldehyde	mg/kg	NA	2.32E-01	NR				NR				NR				1.50E-03	J		
Heptachlor	mg/kg	NA	1.40E-01	NR				NR				NR				ND			
Heptachlor epoxide	mg/kg	NA	6.91E-02	NR				NR				NR				ND			
alpha-BHC	mg/kg	NA	1.00E-01	NR				NR				NR				ND			
alpha-Chlordane	mg/kg	NA	1.69E+00	NR				NR				NR				8.90E-04	J		
beta-BHC	mg/kg	NA	3.50E-01	NR				NR				NR				3.60E-03	J		
delta-BHC	mg/kg	NA	2.33E+00	NR				NR				NR				ND			
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	NR				NR				NR				2.00E-03	J		
HERBICIDES																			
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	NR				NR				NR				ND			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)				HR-137Q-GP05 RH0010 18-Jun-02 1 - 2				HR-137Q-GP06 RH0012 18-Jun-02 1 - 2				HR-137Q-GP07 RH0014 13-Jun-02 4 - 6				HR-137Q-GP08 RH0016 12-Jun-02 10 - 12			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	1.27E+04			YES	1.10E+04			YES	1.10E+04			YES	6.91E+03			
Antimony	mg/kg	1.31E+00	3.11E+00	ND				ND				ND				ND			
Arsenic	mg/kg	1.83E+01	4.26E-01	2.46E+00			YES	2.46E+00			YES	3.48E+00			YES	1.82E+00			YES
Barium	mg/kg	2.34E+02	5.47E+02	3.87E+01				2.43E+01				4.76E+01				2.74E+01			
Beryllium	mg/kg	8.60E-01	9.60E+00	ND				ND				ND				ND			
Cadmium	mg/kg	2.20E-01	6.25E+00	ND				ND				ND				ND			
Calcium	mg/kg	6.37E+02	NA	5.00E+01	J			4.15E+01	J			3.39E+01	J			2.42E+01	B		
Chromium	mg/kg	3.83E+01	2.32E+01	7.58E+00				8.32E+00				1.42E+01	J			1.01E+01	J		
Cobalt	mg/kg	1.75E+01	4.68E+02	3.14E+00				2.25E+00				2.81E+00	J			ND			
Copper	mg/kg	1.94E+01	3.13E+02	2.76E+00				9.12E+00				5.06E+00				8.14E+00			
Iron	mg/kg	4.48E+04	2.34E+03	7.06E+03	J		YES	9.04E+03	J		YES	1.74E+04			YES	8.71E+03			YES
Lead	mg/kg	3.85E+01	4.00E+02	5.70E+00	J			1.06E+02	J	YES		1.09E+01	J			7.72E+00	J		
Magnesium	mg/kg	7.66E+02	NA	5.62E+02				3.73E+02				3.14E+02				1.61E+02			
Manganese	mg/kg	1.36E+03	3.63E+02	3.50E+01				2.26E+01				1.46E+02				5.77E+00			
Mercury	mg/kg	7.00E-02	2.33E+00	3.22E-02	J			ND				4.11E-02	J			ND			
Nickel	mg/kg	1.29E+01	1.54E+02	5.27E+00				3.76E+00				2.36E+00	J			2.11E+00	J		
Potassium	mg/kg	7.11E+02	NA	3.42E+02	J			2.82E+02	J			8.46E+02		YES		1.43E+03		YES	
Selenium	mg/kg	4.70E-01	3.91E+01	6.33E-01	J	YES		ND				ND				ND			
Sodium	mg/kg	7.02E+02	NA	4.41E+01	J			4.41E+01	J			4.88E+01	J			6.25E+01	J		
Thallium	mg/kg	1.40E+00	5.08E-01	ND				ND				ND				ND			
Vanadium	mg/kg	6.49E+01	5.31E+01	1.49E+01				1.53E+01				1.85E+01	J			1.30E+01	J		
Zinc	mg/kg	3.49E+01	2.34E+03	1.55E+01				1.20E+01				8.79E+00	J			4.38E+00	B		
VOLATILE ORGANIC COMPOUNDS																			
2-Butanone	mg/kg	NA	4.66E+03	NR				NR				ND				ND			
Acetone	mg/kg	NA	7.76E+02	NR				NR				2.10E-02	J			7.20E-03	J		
Methylene chloride	mg/kg	NA	8.41E+01	NR				NR				ND				1.40E-03	B		
Toluene	mg/kg	NA	1.55E+03	NR				NR				ND				ND			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	NR				NR				ND				ND			
p-Cymene	mg/kg	NA	1.55E+03	NR				NR				ND				ND			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)				HR-137Q-GP05 RH0010 18-Jun-02 1 - 2				HR-137Q-GP06 RH0012 18-Jun-02 1 - 2				HR-137Q-GP07 RH0014 13-Jun-02 4 - 6				HR-137Q-GP08 RH0016 12-Jun-02 10 - 12			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
PESTICIDES																			
4,4'-DDT	mg/kg	NA	1.79E+00	NR				NR				ND				ND			
Aldrin	mg/kg	NA	3.65E-02	NR				NR				ND				ND			
Endrin	mg/kg	NA	2.32E+00	NR				NR				ND				ND			
Endrin aldehyde	mg/kg	NA	2.32E-01	NR				NR				ND				ND			
Heptachlor	mg/kg	NA	1.40E-01	NR				NR				ND				ND			
Heptachlor epoxide	mg/kg	NA	6.91E-02	NR				NR				ND				ND			
alpha-BHC	mg/kg	NA	1.00E-01	NR				NR				ND				ND			
alpha-Chlordane	mg/kg	NA	1.69E+00	NR				NR				ND				ND			
beta-BHC	mg/kg	NA	3.50E-01	NR				NR				ND				ND			
delta-BHC	mg/kg	NA	2.33E+00	NR				NR				ND				ND			
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	NR				NR				ND				ND			
HERBICIDES																			
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	NR				NR				ND				6.00E-03	J		

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location				HR-137Q-GP09				HR-137Q-GP10				HR-137Q-GP11				HR-137Q-GP12			
Sample Number				RH0018				RH0020				RH0022				RH0042			
Sample Date				13-Jun-02				13-Jun-02				12-Jun-02				30-Sep-03			
Sample Depth (Feet)				2 - 4				2 - 4				4 - 6				1 - 2			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	1.93E+04		YES	YES	5.48E+03				7.57E+03				2.50E+04		YES	YES
Antimony	mg/kg	1.31E+00	3.11E+00	ND				ND				ND				ND			
Arsenic	mg/kg	1.83E+01	4.26E-01	3.69E+00			YES	1.62E+00			YES	1.93E+00			YES	3.28E+00			YES
Barium	mg/kg	2.34E+02	5.47E+02	1.41E+01				1.57E+01				7.24E+01				4.10E+01			
Beryllium	mg/kg	8.60E-01	9.60E+00	ND				ND				ND				ND			
Cadmium	mg/kg	2.20E-01	6.25E+00	ND				ND				ND				ND			
Calcium	mg/kg	6.37E+02	NA	2.52E+01	J			1.18E+02				1.22E+02				9.29E+01	J		
Chromium	mg/kg	3.83E+01	2.32E+01	2.03E+01	J			9.12E+00	J			1.01E+01	J			1.92E+01			
Cobalt	mg/kg	1.75E+01	4.68E+02	ND				ND				ND				2.36E+00			
Copper	mg/kg	1.94E+01	3.13E+02	4.75E+00				6.72E+00				1.07E+01				9.70E+00			
Iron	mg/kg	4.48E+04	2.34E+03	1.73E+04			YES	4.59E+03			YES	1.11E+04			YES	1.25E+04			YES
Lead	mg/kg	3.85E+01	4.00E+02	5.84E+00	J			9.91E+01	J	YES		1.40E+02	J	YES		4.42E+01		YES	
Magnesium	mg/kg	7.66E+02	NA	2.44E+02				1.48E+02				1.75E+02				9.45E+02		YES	
Manganese	mg/kg	1.36E+03	3.63E+02	8.24E+00				3.13E+01				3.01E+01				3.30E+01			
Mercury	mg/kg	7.00E-02	2.33E+00	1.03E-01	J	YES		ND				4.88E-02	J			2.91E-02	J		
Nickel	mg/kg	1.29E+01	1.54E+02	1.54E+00	J			2.27E+00	J			1.85E+00	J			7.99E+00			
Potassium	mg/kg	7.11E+02	NA	1.65E+02	J			2.97E+02	J			2.98E+02	J			1.14E+03		YES	
Selenium	mg/kg	4.70E-01	3.91E+01	ND				ND				ND				1.64E+00		YES	
Sodium	mg/kg	7.02E+02	NA	4.19E+01	J			4.57E+01	J			4.68E+01	J			4.82E+01	J		
Thallium	mg/kg	1.40E+00	5.08E-01	ND				ND				ND				ND			
Vanadium	mg/kg	6.49E+01	5.31E+01	2.95E+01	J			8.11E+00	J			1.18E+01	J			2.99E+01			
Zinc	mg/kg	3.49E+01	2.34E+03	7.01E+00	J			1.03E+01	J			1.42E+01	J			2.34E+01			
VOLATILE ORGANIC COMPOUNDS																			
2-Butanone	mg/kg	NA	4.66E+03	NR				9.30E-03	J			7.20E-03	J			ND			
Acetone	mg/kg	NA	7.76E+02	NR				2.40E-01	J			1.60E-01	J			1.30E-01			
Methylene chloride	mg/kg	NA	8.41E+01	NR				ND				ND				ND			
Toluene	mg/kg	NA	1.55E+03	NR				1.90E-03	J			ND				ND			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	NR				ND				1.60E-03	J			1.10E-03	J		
p-Cymene	mg/kg	NA	1.55E+03	NR				2.00E-02				ND				ND			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)				HR-137Q-GP09 RH0018 13-Jun-02 2 - 4				HR-137Q-GP10 RH0020 13-Jun-02 2 - 4				HR-137Q-GP11 RH0022 12-Jun-02 4 - 6				HR-137Q-GP12 RH0042 30-Sep-03 1 - 2			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
PESTICIDES																			
4,4'-DDT	mg/kg	NA	1.79E+00	NR				ND				ND				ND			
Aldrin	mg/kg	NA	3.65E-02	NR				1.50E-03	J			1.00E-03	J			ND			
Endrin	mg/kg	NA	2.32E+00	NR				2.30E-03	J			ND				ND			
Endrin aldehyde	mg/kg	NA	2.32E-01	NR				ND				ND				ND			
Heptachlor	mg/kg	NA	1.40E-01	NR				ND				ND				8.10E-04	J		
Heptachlor epoxide	mg/kg	NA	6.91E-02	NR				ND				ND				ND			
alpha-BHC	mg/kg	NA	1.00E-01	NR				ND				ND				4.20E-04	J		
alpha-Chlordane	mg/kg	NA	1.69E+00	NR				1.00E-03	J			ND				ND			
beta-BHC	mg/kg	NA	3.50E-01	NR				6.70E-04	J			ND				ND			
delta-BHC	mg/kg	NA	2.33E+00	NR				ND				ND				ND			
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	NR				8.70E-04	J			ND				ND			
HERBICIDES																			
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	NR				ND				1.40E-02	J			ND			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)				HR-137Q-GP12 RH0043 30-Sep-03 2 - 3				HR-137Q-GP13 RH0045 14-Oct-03 1 - 2				HR-137Q-GP14 RH0049 1-Oct-03 1 - 2				HR-137Q-GP14 RH0050 1-Oct-03 8 - 9			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	2.15E+04		YES	YES	1.29E+04			YES	1.11E+04			YES	3.74E+04		YES	YES
Antimony	mg/kg	1.31E+00	3.11E+00	ND				ND				ND				ND			
Arsenic	mg/kg	1.83E+01	4.26E-01	3.56E+00			YES	2.62E+00	J		YES	1.92E+00			YES	1.15E+01			YES
Barium	mg/kg	2.34E+02	5.47E+02	3.65E+01				3.23E+01				2.84E+01				4.84E+01			
Beryllium	mg/kg	8.60E-01	9.60E+00	ND				ND				3.75E-01	J			1.91E+00		YES	
Cadmium	mg/kg	2.20E-01	6.25E+00	ND				ND				ND				6.35E-01	J	YES	
Calcium	mg/kg	6.37E+02	NA	8.07E+01	J			6.03E+01	J			9.42E+01	J			4.66E+01	J		
Chromium	mg/kg	3.83E+01	2.32E+01	2.04E+01				1.03E+01				8.43E+00				2.58E+01			YES
Cobalt	mg/kg	1.75E+01	4.68E+02	2.55E+00				1.11E+00	J			2.13E+00	J			3.15E+00			
Copper	mg/kg	1.94E+01	3.13E+02	7.99E+00				7.10E+00	J			6.55E+00				1.67E+01			
Iron	mg/kg	4.48E+04	2.34E+03	1.59E+04			YES	7.33E+03			YES	6.96E+03			YES	3.84E+04			YES
Lead	mg/kg	3.85E+01	4.00E+02	2.93E+01				5.75E+01		YES		1.22E+02		YES		7.69E+01		YES	
Magnesium	mg/kg	7.66E+02	NA	8.14E+02		YES		4.42E+02				4.26E+02				1.58E+03		YES	
Manganese	mg/kg	1.36E+03	3.63E+02	4.16E+01				2.00E+01	J			2.64E+01				3.81E+01			
Mercury	mg/kg	7.00E-02	2.33E+00	5.96E-02	J			2.81E-02	J			ND				ND			
Nickel	mg/kg	1.29E+01	1.54E+02	7.25E+00				2.76E+00	B			4.44E+00				1.22E+01			
Potassium	mg/kg	7.11E+02	NA	1.29E+03		YES		3.67E+02	B			6.17E+02				8.26E+03		YES	
Selenium	mg/kg	4.70E-01	3.91E+01	8.94E-01	J	YES		5.70E-01	J	YES		ND				1.09E+00	J	YES	
Sodium	mg/kg	7.02E+02	NA	6.29E+01	J			ND				ND				7.89E+01	J		
Thallium	mg/kg	1.40E+00	5.08E-01	ND				ND				ND				ND			
Vanadium	mg/kg	6.49E+01	5.31E+01	2.90E+01				1.71E+01				1.20E+01				3.38E+01			
Zinc	mg/kg	3.49E+01	2.34E+03	1.96E+01				1.31E+01	J			1.28E+01				2.77E+01			
VOLATILE ORGANIC COMPOUNDS																			
2-Butanone	mg/kg	NA	4.66E+03	ND				ND				9.00E-03	J			ND			
Acetone	mg/kg	NA	7.76E+02	6.10E-02				5.30E-02	B			5.70E-01	J			3.50E-01			
Methylene chloride	mg/kg	NA	8.41E+01	ND				ND				ND				ND			
Toluene	mg/kg	NA	1.55E+03	ND				ND				ND				ND			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	ND				ND				ND				ND			
p-Cymene	mg/kg	NA	1.55E+03	ND				ND				ND				ND			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)				HR-137Q-GP12 RH0043 30-Sep-03 2 - 3				HR-137Q-GP13 RH0045 14-Oct-03 1 - 2				HR-137Q-GP14 RH0049 1-Oct-03 1 - 2				HR-137Q-GP14 RH0050 1-Oct-03 8 - 9			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
PESTICIDES																			
4,4'-DDT	mg/kg	NA	1.79E+00	ND				ND				ND				ND			
Aldrin	mg/kg	NA	3.65E-02	ND				ND				ND				ND			
Endrin	mg/kg	NA	2.32E+00	ND				ND				ND				ND			
Endrin aldehyde	mg/kg	NA	2.32E-01	ND				ND				ND				ND			
Heptachlor	mg/kg	NA	1.40E-01	ND				ND				ND				ND			
Heptachlor epoxide	mg/kg	NA	6.91E-02	ND				ND				ND				ND			
alpha-BHC	mg/kg	NA	1.00E-01	ND				ND				ND				ND			
alpha-Chlordane	mg/kg	NA	1.69E+00	ND				ND				ND				ND			
beta-BHC	mg/kg	NA	3.50E-01	ND				ND				ND				ND			
delta-BHC	mg/kg	NA	2.33E+00	ND				ND				ND				ND			
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	ND				ND				ND				ND			
HERBICIDES																			
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	ND				ND				ND				ND			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)				HR-137Q-GP15 RH0052 14-Oct-03 1 - 2				HR-137Q-GP15 RH0053 14-Oct-03 2 - 3				HR-137Q-GP16 RH0055 14-Oct-03 1 - 2				HR-137Q-GP17 RH0058 15-Oct-03 1 - 2			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	1.04E+04			YES	1.68E+04		YES	YES	1.91E+04		YES	YES	8.49E+03			YES
Antimony	mg/kg	1.31E+00	3.11E+00	ND				ND				ND				4.48E+00	B	YES	YES
Arsenic	mg/kg	1.83E+01	4.26E-01	3.04E+00	J		YES	4.98E+00	J		YES	2.92E+00	J		YES	5.21E+00	J		YES
Barium	mg/kg	2.34E+02	5.47E+02	3.03E+01				7.77E+01				3.59E+01				3.22E+01			
Beryllium	mg/kg	8.60E-01	9.60E+00	ND				ND				ND				4.38E-01	J		
Cadmium	mg/kg	2.20E-01	6.25E+00	ND				ND				ND				ND			
Calcium	mg/kg	6.37E+02	NA	9.10E+01	J			5.00E+01	J			6.69E+01	J			1.07E+02			
Chromium	mg/kg	3.83E+01	2.32E+01	8.95E+00				1.62E+01				1.41E+01				9.41E+00			
Cobalt	mg/kg	1.75E+01	4.68E+02	1.17E+00	J			5.31E+00				3.57E+00				1.82E+00	B		
Copper	mg/kg	1.94E+01	3.13E+02	7.19E+00	J			7.59E+00	J			4.54E+00	J			2.01E+01	J	YES	
Iron	mg/kg	4.48E+04	2.34E+03	9.66E+03			YES	1.47E+04			YES	1.00E+04			YES	1.46E+04			YES
Lead	mg/kg	3.85E+01	4.00E+02	8.21E+01		YES		3.98E+01		YES		1.04E+01				2.43E+02		YES	
Magnesium	mg/kg	7.66E+02	NA	3.50E+02				5.48E+02				6.49E+02				2.69E+02			
Manganese	mg/kg	1.36E+03	3.63E+02	5.18E+01	J			2.01E+02	J			5.22E+01	J			7.66E+01	J		
Mercury	mg/kg	7.00E-02	2.33E+00	ND				ND				3.74E-02	J			ND			
Nickel	mg/kg	1.29E+01	1.54E+02	3.04E+00	B			4.48E+00	B			7.11E+00				2.50E+00	B		
Potassium	mg/kg	7.11E+02	NA	3.26E+02	B			4.32E+02	B			5.78E+02	B			3.39E+02	B		
Selenium	mg/kg	4.70E-01	3.91E+01	8.58E-01	J	YES		1.40E+00		YES		7.48E-01	J	YES		1.21E+00		YES	
Sodium	mg/kg	7.02E+02	NA	ND				ND				ND				ND			
Thallium	mg/kg	1.40E+00	5.08E-01	ND				ND				ND				ND			
Vanadium	mg/kg	6.49E+01	5.31E+01	1.47E+01				2.81E+01				2.34E+01				1.76E+01			
Zinc	mg/kg	3.49E+01	2.34E+03	1.15E+01	J			1.31E+01	J			1.69E+01	J			1.64E+01	J		
VOLATILE ORGANIC COMPOUNDS																			
2-Butanone	mg/kg	NA	4.66E+03	7.70E-03	B			6.10E-03	B			ND				NR			
Acetone	mg/kg	NA	7.76E+02	ND				1.90E-01				1.50E-01				NR			
Methylene chloride	mg/kg	NA	8.41E+01	ND				ND				ND				NR			
Toluene	mg/kg	NA	1.55E+03	ND				ND				ND				NR			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	ND				ND				ND				NR			
p-Cymene	mg/kg	NA	1.55E+03	2.10E-03	B			ND				ND				NR			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)				HR-137Q-GP15 RH0052 14-Oct-03 1 - 2				HR-137Q-GP15 RH0053 14-Oct-03 2 - 3				HR-137Q-GP16 RH0055 14-Oct-03 1 - 2				HR-137Q-GP17 RH0058 15-Oct-03 1 - 2			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
PESTICIDES																			
4,4'-DDT	mg/kg	NA	1.79E+00	ND				ND				ND				NR			
Aldrin	mg/kg	NA	3.65E-02	ND				ND				ND				NR			
Endrin	mg/kg	NA	2.32E+00	ND				ND				ND				NR			
Endrin aldehyde	mg/kg	NA	2.32E-01	ND				ND				ND				NR			
Heptachlor	mg/kg	NA	1.40E-01	ND				ND				ND				NR			
Heptachlor epoxide	mg/kg	NA	6.91E-02	ND				ND				ND				NR			
alpha-BHC	mg/kg	NA	1.00E-01	ND				ND				ND				NR			
alpha-Chlordane	mg/kg	NA	1.69E+00	ND				ND				ND				NR			
beta-BHC	mg/kg	NA	3.50E-01	ND				ND				ND				NR			
delta-BHC	mg/kg	NA	2.33E+00	ND				ND				ND				NR			
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	ND				ND				ND				NR			
HERBICIDES																			
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	ND				ND				ND				NR			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location				HR-137Q-GP17				HR-137Q-GP18				HR-137Q-GP19				HR-137Q-GP19			
Sample Number				RH0059				RH0061				RH0064				RH0065			
Sample Date				15-Oct-03				14-Oct-03				1-Oct-03				1-Oct-03			
Sample Depth (Feet)				2 - 3				1 - 2				1 - 2				2 - 2.5			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	8.96E+03			YES	1.97E+04		YES	YES	2.01E+04		YES	YES	5.73E+04		YES	YES
Antimony	mg/kg	1.31E+00	3.11E+00	6.32E+00	B	YES	YES	ND				ND				ND			
Arsenic	mg/kg	1.83E+01	4.26E-01	6.84E+00	J		YES	3.97E+00	J		YES	3.02E+00			YES	9.86E+00			YES
Barium	mg/kg	2.34E+02	5.47E+02	3.98E+01				4.04E+01				3.99E+01				4.12E+01			
Beryllium	mg/kg	8.60E-01	9.60E+00	6.17E-01	J			ND				ND				ND			
Cadmium	mg/kg	2.20E-01	6.25E+00	ND				ND				ND				5.57E-01	J	YES	
Calcium	mg/kg	6.37E+02	NA	6.31E+01	J			8.28E+01	J			1.02E+02	J			6.84E+01	J		
Chromium	mg/kg	3.83E+01	2.32E+01	1.28E+01				1.72E+01				1.62E+01				4.95E+01		YES	YES
Cobalt	mg/kg	1.75E+01	4.68E+02	3.31E+00				1.41E+00	B			ND				1.75E+00	J		
Copper	mg/kg	1.94E+01	3.13E+02	1.10E+01	J			1.36E+01	J			1.89E+01				1.20E+01			
Iron	mg/kg	4.48E+04	2.34E+03	1.83E+04			YES	1.19E+04			YES	1.13E+04			YES	3.36E+04			YES
Lead	mg/kg	3.85E+01	4.00E+02	8.89E+01		YES		2.08E+02		YES		2.11E+02		YES		3.35E+01			
Magnesium	mg/kg	7.66E+02	NA	2.79E+02				6.07E+02				5.05E+02				9.41E+02		YES	
Manganese	mg/kg	1.36E+03	3.63E+02	1.12E+02	J			2.88E+01	J			2.31E+01				2.96E+01			
Mercury	mg/kg	7.00E-02	2.33E+00	ND				3.04E-02	J			4.09E-02	J			9.05E-02	J	YES	
Nickel	mg/kg	1.29E+01	1.54E+02	3.59E+00	B			4.55E+00				4.99E+00				9.31E+00			
Potassium	mg/kg	7.11E+02	NA	4.56E+02	B			6.42E+02				4.61E+02	J			1.12E+03		YES	
Selenium	mg/kg	4.70E-01	3.91E+01	1.52E+00		YES		9.91E-01	J	YES		8.35E-01	J	YES		1.46E+00		YES	
Sodium	mg/kg	7.02E+02	NA	ND				ND				ND				5.93E+01	J		
Thallium	mg/kg	1.40E+00	5.08E-01	ND				ND				ND				ND			
Vanadium	mg/kg	6.49E+01	5.31E+01	2.16E+01				2.68E+01				2.50E+01				7.26E+01		YES	YES
Zinc	mg/kg	3.49E+01	2.34E+03	1.26E+01	J			2.01E+01	J			1.76E+01				2.66E+01			
VOLATILE ORGANIC COMPOUNDS																			
2-Butanone	mg/kg	NA	4.66E+03	NR				NR				NR				NR			
Acetone	mg/kg	NA	7.76E+02	NR				NR				NR				NR			
Methylene chloride	mg/kg	NA	8.41E+01	NR				NR				NR				NR			
Toluene	mg/kg	NA	1.55E+03	NR				NR				NR				NR			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	NR				NR				NR				NR			
p-Cymene	mg/kg	NA	1.55E+03	NR				NR				NR				NR			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)				HR-137Q-GP17 RH0059 15-Oct-03 2 - 3				HR-137Q-GP18 RH0061 14-Oct-03 1 - 2				HR-137Q-GP19 RH0064 1-Oct-03 1 - 2				HR-137Q-GP19 RH0065 1-Oct-03 2 - 2.5			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
PESTICIDES																			
4,4'-DDT	mg/kg	NA	1.79E+00	NR				NR				NR				NR			
Aldrin	mg/kg	NA	3.65E-02	NR				NR				NR				NR			
Endrin	mg/kg	NA	2.32E+00	NR				NR				NR				NR			
Endrin aldehyde	mg/kg	NA	2.32E-01	NR				NR				NR				NR			
Heptachlor	mg/kg	NA	1.40E-01	NR				NR				NR				NR			
Heptachlor epoxide	mg/kg	NA	6.91E-02	NR				NR				NR				NR			
alpha-BHC	mg/kg	NA	1.00E-01	NR				NR				NR				NR			
alpha-Chlordane	mg/kg	NA	1.69E+00	NR				NR				NR				NR			
beta-BHC	mg/kg	NA	3.50E-01	NR				NR				NR				NR			
delta-BHC	mg/kg	NA	2.33E+00	NR				NR				NR				NR			
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	NR				NR				NR				NR			
HERBICIDES																			
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	NR				NR				NR				NR			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location				HR-137Q-GP20				HR-137Q-GP21				HR-137Q-GP21				HR-137Q-GP22			
Sample Number				RH0068				RH0072				RH0073				RH0075			
Sample Date				1-Oct-03				16-Oct-03				16-Oct-03				15-Oct-03			
Sample Depth (Feet)				1 - 1.5				1 - 2				2 - 3				1 - 2			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	2.02E+04		YES	YES	1.58E+04		YES	YES	1.78E+04		YES	YES	1.68E+04		YES	YES
Antimony	mg/kg	1.31E+00	3.11E+00	ND				ND				ND				ND			
Arsenic	mg/kg	1.83E+01	4.26E-01	3.73E+00			YES	2.56E+00			YES	3.16E+00			YES	3.67E+00	J		YES
Barium	mg/kg	2.34E+02	5.47E+02	3.65E+01				5.73E+01				6.05E+01				5.66E+01			
Beryllium	mg/kg	8.60E-01	9.60E+00	ND				5.00E-01	J			4.96E-01	J			ND			
Cadmium	mg/kg	2.20E-01	6.25E+00	ND				ND				ND				ND			
Calcium	mg/kg	6.37E+02	NA	8.30E+01	J			1.01E+02	J			8.52E+01	J			9.55E+01	J		
Chromium	mg/kg	3.83E+01	2.32E+01	1.67E+01				1.17E+01				1.31E+01				1.56E+01			
Cobalt	mg/kg	1.75E+01	4.68E+02	ND				6.77E+00				8.55E+00				2.55E+00			
Copper	mg/kg	1.94E+01	3.13E+02	1.20E+01				4.61E+00				5.20E+00				1.38E+01	J		
Iron	mg/kg	4.48E+04	2.34E+03	1.22E+04			YES	9.67E+03			YES	1.08E+04			YES	1.12E+04			YES
Lead	mg/kg	3.85E+01	4.00E+02	1.00E+02		YES		1.17E+01				1.27E+01				1.45E+02		YES	
Magnesium	mg/kg	7.66E+02	NA	6.76E+02				6.64E+02				7.68E+02		YES		6.98E+02			
Manganese	mg/kg	1.36E+03	3.63E+02	2.23E+01				8.32E+01	J			1.34E+02	J			3.86E+01	J		
Mercury	mg/kg	7.00E-02	2.33E+00	ND				ND				ND				ND			
Nickel	mg/kg	1.29E+01	1.54E+02	5.57E+00				6.99E+00				8.06E+00				4.92E+00	B		
Potassium	mg/kg	7.11E+02	NA	6.03E+02				6.67E+02				8.90E+02		YES		8.76E+02		YES	
Selenium	mg/kg	4.70E-01	3.91E+01	6.44E-01	J	YES		ND				6.23E-01	B	YES		8.84E-01	J	YES	
Sodium	mg/kg	7.02E+02	NA	ND				2.55E+01	J			2.57E+01	J			ND			
Thallium	mg/kg	1.40E+00	5.08E-01	ND				ND				ND				ND			
Vanadium	mg/kg	6.49E+01	5.31E+01	2.68E+01				1.81E+01				2.08E+01				2.15E+01			
Zinc	mg/kg	3.49E+01	2.34E+03	1.96E+01				1.66E+01				1.85E+01				1.92E+01	J		
VOLATILE ORGANIC COMPOUNDS																			
2-Butanone	mg/kg	NA	4.66E+03	NR				NR				NR				NR			
Acetone	mg/kg	NA	7.76E+02	NR				NR				NR				NR			
Methylene chloride	mg/kg	NA	8.41E+01	NR				NR				NR				NR			
Toluene	mg/kg	NA	1.55E+03	NR				NR				NR				NR			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	NR				NR				NR				NR			
p-Cymene	mg/kg	NA	1.55E+03	NR				NR				NR				NR			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)				HR-137Q-GP20 RH0068 1-Oct-03 1 - 1.5				HR-137Q-GP21 RH0072 16-Oct-03 1 - 2				HR-137Q-GP21 RH0073 16-Oct-03 2 - 3				HR-137Q-GP22 RH0075 15-Oct-03 1 - 2			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
PESTICIDES																			
4,4'-DDT	mg/kg	NA	1.79E+00	NR				NR				NR				NR			
Aldrin	mg/kg	NA	3.65E-02	NR				NR				NR				NR			
Endrin	mg/kg	NA	2.32E+00	NR				NR				NR				NR			
Endrin aldehyde	mg/kg	NA	2.32E-01	NR				NR				NR				NR			
Heptachlor	mg/kg	NA	1.40E-01	NR				NR				NR				NR			
Heptachlor epoxide	mg/kg	NA	6.91E-02	NR				NR				NR				NR			
alpha-BHC	mg/kg	NA	1.00E-01	NR				NR				NR				NR			
alpha-Chlordane	mg/kg	NA	1.69E+00	NR				NR				NR				NR			
beta-BHC	mg/kg	NA	3.50E-01	NR				NR				NR				NR			
delta-BHC	mg/kg	NA	2.33E+00	NR				NR				NR				NR			
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	NR				NR				NR				NR			
HERBICIDES																			
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	NR				NR				NR				NR			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location				HR-137Q-GP22				HR-137Q-GP23				HR-137Q-GP24				HR-137Q-GP24			
Sample Number				RH0076				RH0078				RH0081				RH0082			
Sample Date				15-Oct-03				16-Oct-03				6-Oct-03				6-Oct-03			
Sample Depth (Feet)				2 - 3				1 - 2				1 - 2				2 - 3			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	2.35E+04		YES	YES	1.01E+04			YES	8.60E+03			YES	9.08E+03			YES
Antimony	mg/kg	1.31E+00	3.11E+00	ND				ND				ND				ND			
Arsenic	mg/kg	1.83E+01	4.26E-01	4.15E+00	J		YES	2.17E+00			YES	2.13E+00			YES	2.25E+00			YES
Barium	mg/kg	2.34E+02	5.47E+02	7.50E+01				3.90E+01				3.77E+01				3.42E+01			
Beryllium	mg/kg	8.60E-01	9.60E+00	4.13E-01	J			ND				ND				ND			
Cadmium	mg/kg	2.20E-01	6.25E+00	ND				ND				ND				ND			
Calcium	mg/kg	6.37E+02	NA	5.42E+01	J			1.30E+02				2.57E+02				2.77E+02			
Chromium	mg/kg	3.83E+01	2.32E+01	2.13E+01				8.59E+00				6.30E+00				6.54E+00			
Cobalt	mg/kg	1.75E+01	4.68E+02	2.79E+00				2.66E+00	B			ND				ND			
Copper	mg/kg	1.94E+01	3.13E+02	9.03E+00	J			5.34E+00				1.69E+01				2.49E+01		YES	
Iron	mg/kg	4.48E+04	2.34E+03	1.45E+04			YES	6.33E+03			YES	7.24E+03			YES	6.82E+03			YES
Lead	mg/kg	3.85E+01	4.00E+02	5.32E+01		YES		4.44E+01		YES		3.19E+02		YES		3.37E+02		YES	
Magnesium	mg/kg	7.66E+02	NA	9.07E+02		YES		4.35E+02				3.00E+02				3.23E+02			
Manganese	mg/kg	1.36E+03	3.63E+02	2.51E+01	J			6.64E+01	J			4.15E+01	J			4.43E+01	J		
Mercury	mg/kg	7.00E-02	2.33E+00	ND				ND				ND				ND			
Nickel	mg/kg	1.29E+01	1.54E+02	5.90E+00	B			3.89E+00				3.68E+00				2.74E+00			
Potassium	mg/kg	7.11E+02	NA	1.47E+03		YES		4.56E+02	J			1.03E+02	B			ND			
Selenium	mg/kg	4.70E-01	3.91E+01	1.09E+00	J	YES		5.24E-01	B	YES		7.75E-01	B	YES		5.96E-01	B	YES	
Sodium	mg/kg	7.02E+02	NA	4.77E+01	J			2.53E+01	J			ND				ND			
Thallium	mg/kg	1.40E+00	5.08E-01	ND				ND				ND				ND			
Vanadium	mg/kg	6.49E+01	5.31E+01	2.99E+01				1.26E+01				1.21E+01				1.19E+01			
Zinc	mg/kg	3.49E+01	2.34E+03	1.82E+01	J			1.23E+01				1.39E+01	J			1.35E+01	J		
VOLATILE ORGANIC COMPOUNDS																			
2-Butanone	mg/kg	NA	4.66E+03	NR				NR				NR				NR			
Acetone	mg/kg	NA	7.76E+02	NR				NR				NR				NR			
Methylene chloride	mg/kg	NA	8.41E+01	NR				NR				NR				NR			
Toluene	mg/kg	NA	1.55E+03	NR				NR				NR				NR			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	NR				NR				NR				NR			
p-Cymene	mg/kg	NA	1.55E+03	NR				NR				NR				NR			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)				HR-137Q-GP22 RH0076 15-Oct-03 2 - 3				HR-137Q-GP23 RH0078 16-Oct-03 1 - 2				HR-137Q-GP24 RH0081 6-Oct-03 1 - 2				HR-137Q-GP24 RH0082 6-Oct-03 2 - 3			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
PESTICIDES																			
4,4'-DDT	mg/kg	NA	1.79E+00	NR				NR				NR				NR			
Aldrin	mg/kg	NA	3.65E-02	NR				NR				NR				NR			
Endrin	mg/kg	NA	2.32E+00	NR				NR				NR				NR			
Endrin aldehyde	mg/kg	NA	2.32E-01	NR				NR				NR				NR			
Heptachlor	mg/kg	NA	1.40E-01	NR				NR				NR				NR			
Heptachlor epoxide	mg/kg	NA	6.91E-02	NR				NR				NR				NR			
alpha-BHC	mg/kg	NA	1.00E-01	NR				NR				NR				NR			
alpha-Chlordane	mg/kg	NA	1.69E+00	NR				NR				NR				NR			
beta-BHC	mg/kg	NA	3.50E-01	NR				NR				NR				NR			
delta-BHC	mg/kg	NA	2.33E+00	NR				NR				NR				NR			
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	NR				NR				NR				NR			
HERBICIDES																			
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	NR				NR				NR				NR			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location				HR-137Q-GP25				HR-137Q-GP25				HR-137Q-GP26				HR-137Q-GP26			
Sample Number				RH0084				RH0085				RH0088				RH0089			
Sample Date				16-Oct-03				16-Oct-03				6-Oct-03				27-Oct-03			
Sample Depth (Feet)				1 - 2				3 - 4				1 - 2				2 - 3			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	1.65E+04		YES	YES	2.17E+04		YES	YES	1.14E+04			YES	1.23E+04			YES
Antimony	mg/kg	1.31E+00	3.11E+00	ND				ND				ND				ND			
Arsenic	mg/kg	1.83E+01	4.26E-01	4.58E+00			YES	7.81E+00			YES	2.73E+00			YES	2.34E+00			YES
Barium	mg/kg	2.34E+02	5.47E+02	4.32E+01				4.18E+01				2.98E+01				2.65E+01			
Beryllium	mg/kg	8.60E-01	9.60E+00	ND				8.12E-01	J			ND				ND			
Cadmium	mg/kg	2.20E-01	6.25E+00	ND				ND				ND				ND			
Calcium	mg/kg	6.37E+02	NA	8.36E+01	J			3.28E+01	J			8.40E+01	J			6.23E+01	J		
Chromium	mg/kg	3.83E+01	2.32E+01	1.40E+01				3.60E+01			YES	8.18E+00				9.10E+00			
Cobalt	mg/kg	1.75E+01	4.68E+02	1.54E+00	B			2.76E+00	B			2.18E+00				1.62E+00	J		
Copper	mg/kg	1.94E+01	3.13E+02	1.34E+01				3.12E+01		YES		9.78E+00				4.46E+00			
Iron	mg/kg	4.48E+04	2.34E+03	1.15E+04			YES	3.12E+04			YES	9.09E+03			YES	8.56E+03			YES
Lead	mg/kg	3.85E+01	4.00E+02	1.04E+02		YES		2.58E+01				1.71E+02		YES		1.52E+01			
Magnesium	mg/kg	7.66E+02	NA	5.79E+02				6.94E+02				4.62E+02				6.41E+02			
Manganese	mg/kg	1.36E+03	3.63E+02	2.34E+01	J			4.69E+01	J			4.94E+01	J			2.96E+01			
Mercury	mg/kg	7.00E-02	2.33E+00	4.30E-02	B			3.13E-02	B			2.86E-02	B			3.59E-02	B		
Nickel	mg/kg	1.29E+01	1.54E+02	5.38E+00				5.19E+00				4.81E+00				4.24E+00			
Potassium	mg/kg	7.11E+02	NA	5.18E+02	J			1.73E+03		YES		2.13E+02	B			3.53E+02	J		
Selenium	mg/kg	4.70E-01	3.91E+01	1.16E+00	B	YES		2.23E+00		YES		1.14E+00	B	YES		7.09E-01	B	YES	
Sodium	mg/kg	7.02E+02	NA	2.56E+01	J			2.66E+01	J			ND				4.55E+01	B		
Thallium	mg/kg	1.40E+00	5.08E-01	ND				ND				ND				ND			
Vanadium	mg/kg	6.49E+01	5.31E+01	2.09E+01				3.97E+01				1.63E+01				1.84E+01			
Zinc	mg/kg	3.49E+01	2.34E+03	1.72E+01				1.41E+01				1.42E+01	J			1.27E+01			
VOLATILE ORGANIC COMPOUNDS																			
2-Butanone	mg/kg	NA	4.66E+03	NR				NR				NR				NR			
Acetone	mg/kg	NA	7.76E+02	NR				NR				NR				NR			
Methylene chloride	mg/kg	NA	8.41E+01	NR				NR				NR				NR			
Toluene	mg/kg	NA	1.55E+03	NR				NR				NR				NR			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	NR				NR				NR				NR			
p-Cymene	mg/kg	NA	1.55E+03	NR				NR				NR				NR			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location Sample Number Sample Date Sample Depth (Feet)				HR-137Q-GP25 RH0084 16-Oct-03 1 - 2				HR-137Q-GP25 RH0085 16-Oct-03 3 - 4				HR-137Q-GP26 RH0088 6-Oct-03 1 - 2				HR-137Q-GP26 RH0089 27-Oct-03 2 - 3			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
PESTICIDES																			
4,4'-DDT	mg/kg	NA	1.79E+00	NR				NR				NR				NR			
Aldrin	mg/kg	NA	3.65E-02	NR				NR				NR				NR			
Endrin	mg/kg	NA	2.32E+00	NR				NR				NR				NR			
Endrin aldehyde	mg/kg	NA	2.32E-01	NR				NR				NR				NR			
Heptachlor	mg/kg	NA	1.40E-01	NR				NR				NR				NR			
Heptachlor epoxide	mg/kg	NA	6.91E-02	NR				NR				NR				NR			
alpha-BHC	mg/kg	NA	1.00E-01	NR				NR				NR				NR			
alpha-Chlordane	mg/kg	NA	1.69E+00	NR				NR				NR				NR			
beta-BHC	mg/kg	NA	3.50E-01	NR				NR				NR				NR			
delta-BHC	mg/kg	NA	2.33E+00	NR				NR				NR				NR			
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	NR				NR				NR				NR			
HERBICIDES																			
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	NR				NR				NR				NR			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location				HR-137Q-MW01				HR-137Q-MW02				HR-137Q-MW03				HR-137Q-MW04			
Sample Number				RH0025				RH0027				RH0030				RH0032			
Sample Date				11-Jun-02				11-Jun-02				12-Jun-02				11-Jun-02			
Sample Depth (Feet)				4 - 6				6 - 8				6 - 8				6 - 8			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
METALS																			
Aluminum	mg/kg	1.36E+04	7.80E+03	6.01E+03				1.65E+04		YES	YES	1.01E+04			YES	1.04E+04			YES
Antimony	mg/kg	1.31E+00	3.11E+00	ND				ND				ND				ND			
Arsenic	mg/kg	1.83E+01	4.26E-01	1.58E+00			YES	5.91E+00			YES	3.04E+00			YES	3.38E+00			YES
Barium	mg/kg	2.34E+02	5.47E+02	3.25E+01	J			6.88E+01	J			2.17E+01				1.31E+01	J		
Beryllium	mg/kg	8.60E-01	9.60E+00	ND				5.99E-01	J			ND				ND			
Cadmium	mg/kg	2.20E-01	6.25E+00	ND				ND				ND				ND			
Calcium	mg/kg	6.37E+02	NA	9.63E+01	J			9.02E+01	J			9.33E+01	J			4.71E+01	J		
Chromium	mg/kg	3.83E+01	2.32E+01	8.38E+00				1.70E+01				3.72E+01	J		YES	1.63E+01			
Cobalt	mg/kg	1.75E+01	4.68E+02	3.34E+00				5.75E+00				ND				ND			
Copper	mg/kg	1.94E+01	3.13E+02	4.32E+00				9.55E+00				1.60E+01				1.20E+01			
Iron	mg/kg	4.48E+04	2.34E+03	6.92E+03			YES	2.92E+04			YES	1.55E+04			YES	1.18E+04			YES
Lead	mg/kg	3.85E+01	4.00E+02	2.15E+01				2.73E+01	J			9.78E+01	J	YES		1.04E+02		YES	
Magnesium	mg/kg	7.66E+02	NA	2.30E+02				7.06E+02				2.66E+02				1.54E+02			
Manganese	mg/kg	1.36E+03	3.63E+02	6.32E+01				1.52E+02	J			2.35E+01				2.87E+01			
Mercury	mg/kg	7.00E-02	2.33E+00	ND				4.97E-02	J			ND				3.26E-02	J		
Nickel	mg/kg	1.29E+01	1.54E+02	3.13E+00	B			6.55E+00				2.13E+00	J			2.02E+00	B		
Potassium	mg/kg	7.11E+02	NA	3.66E+02	J			2.05E+03		YES		1.04E+03		YES		3.27E+02	J		
Selenium	mg/kg	4.70E-01	3.91E+01	ND				ND				ND				ND			
Sodium	mg/kg	7.02E+02	NA	5.69E+01	J			6.54E+01	J			5.62E+01	J			4.50E+01	J		
Thallium	mg/kg	1.40E+00	5.08E-01	ND				9.79E-01	B		YES	ND				ND			
Vanadium	mg/kg	6.49E+01	5.31E+01	8.48E+00				1.93E+01	J			2.86E+01	J			2.11E+01			
Zinc	mg/kg	3.49E+01	2.34E+03	9.41E+00	J			1.82E+01	J			7.75E+00	B			6.00E+00	J		
VOLATILE ORGANIC COMPOUNDS																			
2-Butanone	mg/kg	NA	4.66E+03	ND				ND				7.70E-03	J			ND			
Acetone	mg/kg	NA	7.76E+02	1.70E-02	J			1.40E-02	J			7.00E-02	J			4.30E-02	J		
Methylene chloride	mg/kg	NA	8.41E+01	ND				ND				ND				ND			
Toluene	mg/kg	NA	1.55E+03	ND				ND				ND				ND			
Trichlorofluoromethane	mg/kg	NA	2.33E+03	ND				ND				ND				ND			
p-Cymene	mg/kg	NA	1.55E+03	ND				ND				ND				ND			

Table 4-3

Subsurface Soil Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Sample Location				HR-137Q-MW01				HR-137Q-MW02				HR-137Q-MW03				HR-137Q-MW04			
Sample Number				RH0025				RH0027				RH0030				RH0032			
Sample Date				11-Jun-02				11-Jun-02				12-Jun-02				11-Jun-02			
Sample Depth (Feet)				4 - 6				6 - 8				6 - 8				6 - 8			
Parameter	Units	BKG[a]	SSSL[b]	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL	Results	VQ	>BKG	>SSSL
PESTICIDES																			
4,4'-DDT	mg/kg	NA	1.79E+00	ND				ND				ND				ND			
Aldrin	mg/kg	NA	3.65E-02	ND				ND				ND				ND			
Endrin	mg/kg	NA	2.32E+00	ND				ND				ND				ND			
Endrin aldehyde	mg/kg	NA	2.32E-01	ND				ND				ND				ND			
Heptachlor	mg/kg	NA	1.40E-01	ND				ND				1.60E-03	J			ND			
Heptachlor epoxide	mg/kg	NA	6.91E-02	ND				ND				1.20E-03	J			ND			
alpha-BHC	mg/kg	NA	1.00E-01	ND				ND				ND				ND			
alpha-Chlordane	mg/kg	NA	1.69E+00	ND				ND				ND				ND			
beta-BHC	mg/kg	NA	3.50E-01	1.60E-03	J			ND				ND				ND			
delta-BHC	mg/kg	NA	2.33E+00	6.40E-04	J			ND				ND				ND			
gamma-BHC (Lindane)	mg/kg	NA	4.85E-01	ND				ND				ND				ND			
HERBICIDES																			
2,2-Dichloropropanoic Acid	mg/kg	NA	2.33E+02	ND				ND				ND				ND			

Analyses performed using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods.

[a] BKG - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in SAIC, 1998, *Final Background Metals Survey Report, Fort McClellan, Alabama*, July.

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

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

J - Compound was positively identified; reported value is an estimated concentration.

mg/kg - Milligrams per kilogram.

NA - Not available.

ND - Not detected.

NR - Not requested.

VQ - Data validation qualifier.

Table 4-4

Groundwater Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Location Sample Number Sample Date				HR-137Q-MW01 RH3001 10-Jul-02				HR-137Q-MW01 RH3006 3-Jul-03				HR-137Q-MW02 RH3002 8-Jul-02				HR-137Q-MW02 RH3008 2-Jul-03			
Parameter	Units	BKG[a]	SSSL[b]	Result	VQ	>BKG	>SSSL	Result	VQ	>BKG	>SSSL	Result	VQ	>BKG	>SSSL	Result	VQ	>BKG	>SSSL
METALS, DISSOLVED																			
Aluminum	mg/L	2.34E+00	1.56E+00	6.48E-02	J			NR				NR				NR			
Arsenic	mg/L	1.78E-02	4.46E-05	2.73E-03	J		YES	NR				NR				NR			
Barium	mg/L	1.27E-01	1.10E-01	6.78E-02	J			NR				NR				NR			
Calcium	mg/L	5.65E+01	NA	1.43E+00				NR				NR				NR			
Iron	mg/L	7.04E+00	4.69E-01	3.66E-01	J			NR				NR				NR			
Magnesium	mg/L	2.13E+01	NA	9.40E-01	J			NR				NR				NR			
Manganese	mg/L	5.81E-01	7.35E-02	3.30E-01			YES	NR				NR				NR			
Potassium	mg/L	7.20E+00	NA	1.07E+01		YES		NR				NR				NR			
Sodium	mg/L	1.48E+01	NA	1.42E+00				NR				NR				NR			
METALS, TOTAL																			
Aluminum	mg/L	2.34E+00	1.56E+00	1.02E+01	J	YES	YES	8.15E-01				1.88E+00	J		YES	3.35E-01			
Arsenic	mg/L	1.78E-02	4.46E-05	4.92E-03	J		YES	ND				2.00E-03	J		YES	2.18E-03	B		YES
Barium	mg/L	1.27E-01	1.10E-01	1.26E-01			YES	3.11E-02				4.84E-02				3.58E-02			
Calcium	mg/L	5.65E+01	NA	1.85E+00				3.68E-01	J			8.74E-01	J			3.38E-01	J		
Chromium	mg/L	NA	4.69E-03	1.15E-02	J		YES	ND				ND				ND			
Copper	mg/L	2.55E-02	6.26E-02	7.29E-03	J			ND				ND				ND			
Iron	mg/L	7.04E+00	4.69E-01	8.29E+00	J	YES	YES	4.22E-01	J			5.72E-01	J		YES	1.44E-01	J		
Lead	mg/L	8.00E-03	1.50E-02	3.57E-03	J			3.63E-03	B			ND				1.32E-03	B		
Magnesium	mg/L	2.13E+01	NA	1.79E+00				4.57E-01	J			6.10E-01	J			3.03E-01	J		
Manganese	mg/L	5.81E-01	7.35E-02	2.08E-01			YES	1.84E-02	J			1.09E-01			YES	2.32E-02	J		
Potassium	mg/L	7.20E+00	NA	1.19E+01		YES		2.18E+00	B			6.01E+00				2.48E+00	B		
Selenium	mg/L	NA	7.82E-03	ND				ND				ND				ND			
Sodium	mg/L	1.48E+01	NA	9.03E-01	J			4.14E-01	B			8.20E-01	J			6.05E-01	B		
Vanadium	mg/L	1.70E-02	1.10E-02	8.10E-03	J			ND				ND				ND			
Zinc	mg/L	2.20E-01	4.69E-01	3.80E-02	J			ND				ND				ND			
VOLATILE ORGANIC COMPOUNDS																			
Chloroform	mg/L	NA	1.15E-03	2.20E-04	J			ND				ND				ND			
Methylene chloride	mg/L	NA	7.85E-03	ND				4.10E-04	B			ND				ND			

Table 4-4

Groundwater Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Location Sample Number Sample Date				HR-137Q-MW03 RH3009 10-Jul-03				HR-137Q-MW04 RH3005 12-Jul-02				HR-137Q-MW04 RH3010 8-Jul-03			
Parameter	Units	BKG[a]	SSSL[b]	Result	VQ	>BKG	>SSSL	Result	VQ	>BKG	>SSSL	Result	VQ	>BKG	>SSSL
METALS, DISSOLVED															
Aluminum	mg/L	2.34E+00	1.56E+00	NR				NR				NR			
Arsenic	mg/L	1.78E-02	4.46E-05	NR				NR				NR			
Barium	mg/L	1.27E-01	1.10E-01	NR				NR				NR			
Calcium	mg/L	5.65E+01	NA	NR				NR				NR			
Iron	mg/L	7.04E+00	4.69E-01	NR				NR				NR			
Magnesium	mg/L	2.13E+01	NA	NR				NR				NR			
Manganese	mg/L	5.81E-01	7.35E-02	NR				NR				NR			
Potassium	mg/L	7.20E+00	NA	NR				NR				NR			
Sodium	mg/L	1.48E+01	NA	NR				NR				NR			
METALS, TOTAL															
Aluminum	mg/L	2.34E+00	1.56E+00	1.19E+00				4.10E+00	J	YES	YES	1.87E-01	J		
Arsenic	mg/L	1.78E-02	4.46E-05	ND				ND				ND			
Barium	mg/L	1.27E-01	1.10E-01	2.88E-02				1.49E-02				9.17E-03	J		
Calcium	mg/L	5.65E+01	NA	1.72E-01	B			9.49E-01	J			1.72E-01	J		
Chromium	mg/L	NA	4.69E-03	ND				ND				ND			
Copper	mg/L	2.55E-02	6.26E-02	ND				ND				ND			
Iron	mg/L	7.04E+00	4.69E-01	5.60E-01	J		YES	1.23E+00			YES	8.02E-02	J		
Lead	mg/L	8.00E-03	1.50E-02	ND				ND				ND			
Magnesium	mg/L	2.13E+01	NA	1.43E-01	J			6.42E-01	J			1.57E-01	B		
Manganese	mg/L	5.81E-01	7.35E-02	3.60E-01			YES	2.03E-02	J			6.83E-03	J		
Potassium	mg/L	7.20E+00	NA	3.11E+00	J			4.26E+00	J			ND			
Selenium	mg/L	NA	7.82E-03	ND				ND				7.48E-03	B		
Sodium	mg/L	1.48E+01	NA	1.75E+00				1.10E+00				7.16E-01	J		
Vanadium	mg/L	1.70E-02	1.10E-02	ND				ND				ND			
Zinc	mg/L	2.20E-01	4.69E-01	ND				ND				ND			
VOLATILE ORGANIC COMPOUNDS															
Chloroform	mg/L	NA	1.15E-03	ND				ND				ND			
Methylene chloride	mg/L	NA	7.85E-03	3.60E-04	B			ND				3.90E-04	B		

Table 4-4

Groundwater Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Analyses performed using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods.

[a] BKG - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in SAIC, 1998, *Final Background Metals Survey Report, Fort McClellan, Alabama*, July.

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

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

J - Compound was positively identified; reported value is an estimated concentration.

mg/L - Milligrams per liter.

NA - Not available.

ND - Not detected.

NR - Not requested.

VQ - Data validation qualifier.

Table 4-5

Surface Water Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Location Sample Number Sample Date					HR-137Q-SW/SD01 RH2001 9-Mar-04					HR-137Q-SW/SD02 RH2002 11-Mar-04					HR-137Q-SW/SD03 RH2004 8-Mar-04					HR-137Q-SW/SD04 RH2005 10-Mar-04				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Result	VQ	>BKG	>SSSL	>ESV	Result	VQ	>BKG	>SSSL	>ESV	Result	VQ	>BKG	>SSSL	>ESV	Result	VQ	>BKG	>SSSL	>ESV
METALS																								
Aluminum	mg/L	5.26E+00	1.53E+01	8.70E-02	6.99E-02	B				ND					ND					ND				
Barium	mg/L	7.54E-02	1.10E+00	3.90E-03	2.15E-02				YES	2.37E-02				YES	2.17E-02				YES	2.33E-02				YES
Calcium	mg/L	2.52E+01	NA	1.16E+02	3.34E-01	J				3.54E-01	J				3.83E-01	J				3.68E-01	J			
Iron	mg/L	1.96E+01	4.70E+00	1.00E+00	5.69E-02	J				1.99E-02	J				1.76E-02	B				1.98E-02	J			
Magnesium	mg/L	1.10E+01	NA	8.20E+01	4.35E-01	J				4.63E-01	J				4.50E-01	J				4.77E-01	J			
Manganese	mg/L	5.65E-01	6.40E-01	8.00E-02	1.14E-02	J				1.01E-02	J				1.14E-02	J				9.64E-03	J			
Selenium	mg/L	NA	7.82E-02	5.00E-03	ND					ND					ND					5.19E-03	B			YES
Sodium	mg/L	3.44E+00	NA	6.80E+02	7.70E-01	J				7.87E-01	J				7.13E-01	J				7.58E-01	J			

Analyses performed using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods.

[a] BKG - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in SAIC, 1998, *Final Background Metals Survey Report, Fort McClellan, Alabama*, July.

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

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

J - Compound was positively identified; reported value is an estimated concentration.

mg/L - Milligrams per liter.

NA - Not available.

ND - Not detected.

VQ - Data validation qualifier.

Table 4-6

Sediment Analytical Results
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Location Sample Number Sample Date					HR-137Q-SW/SD01 RH1001 9-Mar-04					HR-137Q-SW/SD02 RH1002 11-Mar-04					HR-137Q-SW/SD03 RH1004 8-Mar-04					HR-137Q-SW/SD04 RH1005 10-Mar-04				
Parameter	Units	BKG[a]	SSSL[b]	ESV[b]	Result	VQ	>BKG	>SSSL	>ESV	Result	VQ	>BKG	>SSSL	>ESV	Result	VQ	>BKG	>SSSL	>ESV	Result	VQ	>BKG	>SSSL	>ESV
METALS																								
Aluminum	mg/kg	8.59E+03	1.15E+06	NA	4.35E+03					4.96E+03					2.90E+03					3.68E+03				
Arsenic	mg/kg	1.13E+01	5.58E+01	7.24E+00	1.90E+00					2.35E+00					1.83E+00					1.86E+00				
Barium	mg/kg	9.89E+01	8.36E+04	NA	2.20E+01					5.91E+01					2.92E+01					2.22E+01				
Beryllium	mg/kg	9.70E-01	1.50E+02	NA	ND					5.85E-01	J				ND					4.20E-01	J			
Calcium	mg/kg	1.11E+03	NA	NA	7.64E+01	J				4.34E+03		YES			7.33E+01	J				8.98E+01	J			
Chromium	mg/kg	3.12E+01	2.79E+03	5.23E+01	6.53E+00					5.79E+00	J				6.24E+00					4.90E+00				
Cobalt	mg/kg	1.10E+01	6.72E+04	5.00E+01	1.67E+00	J				3.50E+00					7.60E+00					5.28E+00				
Copper	mg/kg	1.71E+01	4.74E+04	1.87E+01	4.85E+00					1.07E+01					3.11E+00					6.15E+00				
Iron	mg/kg	3.53E+04	3.59E+05	NA	1.25E+04					9.27E+03					1.06E+04					1.73E+04				
Lead	mg/kg	3.78E+01	4.00E+02	3.02E+01	2.16E+01					7.23E+01		YES		YES	1.26E+01					1.66E+01				
Magnesium	mg/kg	9.06E+02	NA	NA	1.36E+02					2.42E+03		YES			9.96E+01	J				1.31E+02				
Manganese	mg/kg	7.12E+02	4.38E+04	NA	1.06E+02					3.47E+02					5.78E+02					3.57E+02				
Mercury	mg/kg	1.10E-01	2.99E+02	1.30E-01	ND					ND					ND					ND				
Nickel	mg/kg	1.30E+01	1.76E+04	1.59E+01	1.98E+00	J				3.81E+00					2.18E+00	J				2.07E+00	J			
Potassium	mg/kg	1.01E+03	NA	NA	5.47E+02	J				3.72E+02	B				4.10E+02	J				4.18E+02	B			
Selenium	mg/kg	7.20E-01	5.96E+03	NA	6.07E-01	B				ND					ND					ND				
Sodium	mg/kg	6.92E+02	NA	NA	ND					8.95E+01	J				ND					6.95E+01	J			
Vanadium	mg/kg	4.09E+01	4.83E+03	NA	1.15E+01					1.01E+01					9.61E+00					9.63E+00				
Zinc	mg/kg	5.27E+01	3.44E+05	1.24E+02	9.71E+00	J				1.43E+01	J				8.68E+00	J				7.74E+00	J			
VOLATILE ORGANIC COMPOUNDS																								
2-Butanone	mg/kg	NA	6.23E+05	1.37E-01	8.70E-03	J				3.00E-02					ND					ND				
Acetone	mg/kg	NA	1.03E+05	4.53E-01	1.30E-01	J				3.80E-01					3.20E-02	J				7.30E-02				
Methylene chloride	mg/kg	NA	9.84E+03	1.26E+00	2.80E-03	B				3.80E-03	B				3.70E-03	B				5.40E-03	B			
p-Cymene	mg/kg	NA	2.08E+05	NA	ND					1.80E-03	J				ND					ND				
PESTICIDES																								
alpha-BHC	mg/kg	NA	1.17E+01	6.00E-03	ND					ND					ND					9.10E-04	J			
TOTAL ORGANIC CARBON																								
TOC	mg/kg	NA	NA	NA	4.32E+03					1.91E+04					2.67E+03					4.72E+03				

Analyses performed using U.S. Environmental Protection Agency (EPA) SW-846 analytical methods.

[a] BKG - Background. Concentration listed is two times (2x) the arithmetic mean of background metals concentration given in SAIC, 1998, *Final Background Metals Survey Report, Fort McClellan, Alabama*, July.

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

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

J - Compound was positively identified; reported value is an estimated concentration.

mg/kg - Milligrams per kilogram.

NA - Not available.

ND - Not detected.

VQ - Data validation qualifier.

Table 5-1

Generic Soil Screening Levels and Travel Times for Metals of Concern in Soil
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Metal	Limit[a] (mg/L)	K_d [b] (L/kg)	DAF_1 SSL[c] (mg/kg)	DAF_{20} SSL[c] (mg/kg)	Retardation Factor (R_d)	Transport Rate (V_c) (m/yr)	Travel Time (T) (Years)
Antimony	0.006	45	0.3	5	226	4.53E-01	2,819
Copper	1.3	79	530	11,000	396	2.59E-01	4,940
Lead	0.015	316	400[d]		1,581	6.48E-02	19,723

[a] Limit for antimony =Federal Maximum Contaminant Level (MCL). Limits for copper and lead = Federal Treatment Technique (TT) action levels
[b] K_d = Soil/water partition coefficient. K_d for antimony from Baes et al., 1984. K_d for copper and lead from HydroGeoLogic, Inc,1999.
[c] DAF SSL values for antimony from EPA, 2004b and copper from EPA, 2004a.
Rd, Vc and T are calculated based on site-specific soil properties and using standard equations: $R_d = 1 + (K_d)(D_b/n)$; $V_c = V/R_d$; $T = z/I(R_d)$
[d] A soil screening level (SSL) of 400 mg/kg has been set for lead (EPA,1998).

L/kg - Liters per kilogram.
m/yr - Meters per year.
mg/kg - Milligrams per kilogram.
mg/L - Milligrams per liter.

Table 5-2

Physiochemical Properties, Generic Soil Screening Levels, and Travel Times for Organic Compounds of Concern in Soil and Sediment Former 81mm Mortar Range, Parcel 137Q-X Fort McClellan, Alabama

Parameter	Maximum Contaminant Level [a] (mg/L)	Water Solubility[b] (mg/L)	Vapor Pressure[b] (mm Hg)	K_{oc}[c] (L/kg)	Henry's Law Constant (H)	DAF_1 SSL[d] (mg/kg)	DAF_{20} SSL[d] (mg/kg)	K_d L/Kg	Retardation Factor (R_d)	Transport Rate (V_c) (m/yr)	Travel Time (T) (years)
PESTICIDES											
4,4'-DDD	**2.80E-01**	1.60E-01	1.00E-06	4.58E+04	1.64E-04	0.8	16	9.16 E+01	4.59E+02	2.23E-01	5,726
4,4'-DDE	**2.00E-01**	4.00E-02	6.50E-06	8.64E+04	8.61E-04	3	54	1.73 E+02	8.66E+02	1.18E-01	10,803
4,4'-DDT	**2.00E-01**	3.10E-03	1.50E-07	6.78E+05	3.32E-04	2	32	1.36 E+03	6.80E+03	1.51E-02	84,842
Dieldrin	**4.20E-03**	1.86E-01	1.80E-07	2.55E+04	6.19E-04	0.0002	0.004	5.10 E+01	2.56E+02	4.00E-01	3,194
Endrin	2.00E-03	2.60E-01	2.00E-07	1.08E+04	3.08E-04	0.05	1	2.16 E+01	1.09E+02	9.39E-01	1,360
alpha-BHC	**1.10E-02**	1.63E+00	6.00E-02	1.76E+03	4.35E -04	0.00003	0.0005	3.52 E+00	1.85E+01	5.53E+00	231
beta-BHC	**3.70E-02**	7.00E-01	1.70E-01	2.14E+03	3.05E-05	0.0001	0.003	4.28 E+00	2.25E+01	4.55E+00	281
gamma-BHC (Lindane)	**5.20E-02**	7.00E+00	9.40E-06	1.35E+03	5.74E-04	0.0005	0.009	2.70 E+00	1.45E+01	7.06E+00	181
HERBICIDES											
MCPA	NA	6.30E+02	5.90E-06	2.94E+01	1.82E-08	NA	NA	5.88 E-02	1.29E+00	7.91E+01	16
MCPP	**3.60E+01**	8.60E+02	3.00E-06	4.86E+01	8.96E-10	NA	NA	9.72 E-02	1.49E+00	6.89E+01	19
EXPLOSIVES											
4-amino-2,6-dintrotoluene	NA	1.22E+03	1.07E-06	1.00E+02	NA	NA	NA	2.01E-01	2.01E+00	5.09E+01	25
1,3,5-trinitrobenzene[e]	**1.10E-03**	3.50E+02	3.20E-06	7.59E+01	3.08E-09	NA	NA	1.52 E-01	1.76E+00	5.82E+01	22

[a] Bold values are EPA Region 9 PRGs for tap water (EPA, 2004b).
[b] Water solubility and vapor pressures as reported in EPA, 1992 and RAIS, 2004.
[c] K_{oc} and H as reported in EPA, 1996, RAIS, 2004 and SRC Phy Prop Database, 2004.
[d] DAF_1 SSL and DAF_{20} SSL from EPA Region 9 PRGs.
[e] Physical constants as reported in ATSDR, 1995.
K_d, R_d, V_c and T are calculated based on site-specific soil properties or EPA default values and using standard equations: $K_d = (f_{oc})(k_{oc})$, $R_d = 1 + (K_d)(D_b/n)$; $V_c = V/R_d$; $T = z/I(R_d)$
K_{oc} - organic partitioning coefficient
cm^3/g - Cubic centimeters per gram.
L/kg - Liters per kilogram.
m/yr - Meters per year.
mg/kg - Milligrams per kilogram.
mg/L - Milligrams per liter.
NA - Not available.

Table 5-3

Maximum Detected Concentrations in Soil and Sediment Samples
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Constituent	DAF_{20} SSL[b] (mg/kg)	Maximum Detected Concentration (mg/kg)		
		Surface Soil	Subsurface Soil	Sediment
METALS				
Aluminum	NA	*19100*	*57300*	4960
Antimony	5	***108***	***9.02***	ND
Arsenic	29	5.31	11.5	2.35
Barium	1600	157	90.1	59.1
Beryllium	63	*1.14*	1.91	0.585
Cadmium	8	ND	0.635	ND
Calcium	NA	1110	277	4340
Chromium	38	19.2	***49.5***	6.53
Cobalt	NA	*21.7*	8.55	7.6
Copper	11000[c]	*325*	269	10.7
Iron	NA	16100	38400	17300
Lead[a]	400	***12100***	***4390***	*72.3*
Magnesium	NA	733	1580	2420
Manganese	NA	979	261	578
Mercury	NA	*0.102*	0.103	ND
Nickel	130	5.83	12.2	3.81
Potassium	NA	962	8260	547
Selenium	5	*1.21*	2.23	0.607
Sodium	NA	99.3	78.9	89.5
Thallium	0.7	0.66	**0.979**	ND
Vanadium	6000	21.6	*72.6*	11.5
Zinc	12000	*72.6*	55.1	14.3
VOLATILE ORGANIC COMPOUNDS				
2-Butanone	NA	0.24	0.0093	0.03
Acetone	16	1.8	0.57	0.38
Methylene chloride	0.02	0.01	0.0014	0.0054
Toluene	12	0.0034	0.0019	ND
Trichlorofluoromethane	NA	0.0083	0.0016	ND
p-Cymene	NA	0.053	0.02	0.0018
SEMIVOLATILE ORGANIC COMPOUNDS				
Bis(2-Ethylhexyl)phthalate	3600	0.24	ND	ND
PESTICIDES				
4,4'-DDD	16	*0.0083*	ND	ND
4,4'-DDE	54	*0.011*	ND	ND
4,4'-DDT	32	*0.006*	0.0062	ND
Aldrin	0.5	0.0015	0.0015	ND
alpha-BHC	0.0005	***0.0019***	0.00042	**0.00091**
alpha-Chlordane	10	0.0048	0.001	ND
beta-BHC	0.003	***0.012***	**0.0036**	ND
delta-BHC	NA	0.0088	0.00064	ND
Dieldrin	0.004	*0.0036*	ND	ND
Endosulfan I	18	0.002	ND	ND
Endosulfan II	NA	0.004	ND	ND
Endosulfan sulfate	NA	0.00082	ND	ND
Endrin	1	*0.0032*	0.0051	ND
Endrin aldehyde	NA	0.007	0.0015	ND
Endrin ketone	NA	0.01	ND	ND
gamma-BHC (Lindane)	0.009	*0.0045*	0.002	ND
gamma-Chlordane	10	0.0014	ND	ND
Heptachlor	23	0.0019	0.0016	ND
Heptachlor epoxide	0.7	0.0013	0.0012	ND
Methoxychlor	160	0.006	ND	ND
HERBICIDES				
2,2-Dichloropropanoic Acid	NA	0.0095	0.014	ND
2,4-D	9[c]	0.013	ND	ND
Dichloroprop	NA	0.0062	ND	ND
MCPA	NA	*1.4*	ND	ND
MCPP	NA	*1.9*	ND	ND
EXPLOSIVES				
1,3,5-Trinitrobenzene	NA	*1*	ND	ND
4-Amino-2,6-dinitrotoluene	NA	0.073	ND	ND

Bold values indicate concentrations exceeding DAF_{20} SSLs.

Metal values shown in italics exceed ESV and background values (surface soil, sediment) or SSSL and background (subsurface soil), if available; organic compounds exceeding ESV (surface soil), if available.

[a] EPA has established a soil screening level of 400 mg/kg for lead (EPA, 1998).

[b] DAF_{20} SSL from EPA, 1996a, except as noted.

[c] DAF_{20} SSL from EPA, 2004a.

NA - Not available.

ND - Not detected.

Table 6-1

Receptor Exposure Scenarios
Former 81 mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Source Medium	Transport Model	Exposure Medium	Exposure Route
CURRENT SITE USE			
Recreational Site User			
Surface soil	None	Soil	Incidental ingestion Dermal contact
	Dust emissions	Air	Inhalation
	Biotransfer	Deer/venison	Venison consumption
Surface water	None	Water	Incidental ingestion Dermal contact
Sediment	None	Sediment	Incidental ingestion Dermal contact
FUTURE SITE USE			
Recreational Site User			
Total soil[a]	None	Soil	Incidental ingestion Dermal contact
	Dust emissions	Air	Inhalation
Surface soil	Biotransfer	Deer/venison	Venison consumption
Surface water	None	Water	Incidental ingestion Dermal contact
Sediment	None	Sediment	Incidental ingestion Dermal contact
Groundskeeper			
Total soil[a]	None	Soil	Incidental ingestion Dermal contact
	Dust emissions	Air	Inhalation
Groundwater[b]	None	Water	Drinking water consumption Dermal contact
Construction Worker			
Total soil[a]	None	Soil	Incidental ingestion Dermal contact
	Dust emissions, volatilization	Air	Inhalation
Groundwater[b]	None	Water	Drinking water consumption Dermal contact
On-Site Resident			
Total soil[a]	None	Soil	Incidental ingestion Dermal contact
Groundwater[b]	None	Water	Drinking water consumption Dermal contact
	Volatilization	Air	Inhalation
Surface water	None	Water	Incidental ingestion Dermal contact
Sediment	None	Sediment	Incidental ingestion Dermal contact

[a]See Section 6.3 for explanation of total soil
[b]It is conservatively assumed that groundwater is developed as a potable source.

Table 6-2

Surface Soil Samples Used in Streamlined Risk Assessment
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Location	Sample Number	Sample Date	Sample Depth (ft)	Chemical Analyses Performed
HR-137Q-DEP01	RH0033	22-Jul-02	0 - 0.5	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-DEP02	RH0035	22-Jul-02	0 - 0.5	Metals, NITRO
HR-137Q-DEP03	RH0037	22-Jul-02	0 - 0.5	Metals, NITRO
HR-137Q-DEP04	RH0038	22-Jul-02	0 - 0.5	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-DEP05	RH0039	22-Jul-02	0 - 0.5	Metals, NITRO
HR-137Q-DEP06	RH0040	22-Jul-02	0 - 0.5	Metals, NITRO
HR-137Q-DEP07	RH0115	10-Mar-04	0 - 0.5	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-DEP08	RH0116	11-Mar-04	0 - 0.5	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-DEP09	RH0117	10-Mar-04	0 - 0.5	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP01	RH0001	12-Jun-02	0 - 1	Metals, NITRO
HR-137Q-GP02	RH0003	12-Jun-02	0 - 1	Metals, NITRO
HR-137Q-GP03	RH0005	12-Jun-02	0 - 1	Metals, NITRO
HR-137Q-GP04	RH0007	18-Jun-02	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-GP05	RH0009	18-Jun-02	0 - 1	Metals, NITRO
HR-137Q-GP06	RH0011	18-Jun-02	0 - 1	Metals, NITRO
HR-137Q-GP07	RH0013	13-Jun-02	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-GP08	RH0015	12-Jun-02	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-GP09	RH0017	13-Jun-02	0 - 1	Metals, NITRO
HR-137Q-GP10	RH0019	13-Jun-02	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-GP11	RH0021	12-Jun-02	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-GP12	RH0041	30-Sep-03	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP13	RH0044	14-Oct-03	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP14	RH0048	1-Oct-03	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP15	RH0051	14-Oct-03	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP16	RH0054	14-Oct-03	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP17	RH0057	15-Oct-03	0 - 1	Metals, NITRO
HR-137Q-GP18	RH0060	14-Oct-03	0 - 1	Metals, NITRO
HR-137Q-GP19	RH0063	1-Oct-03	0 - 1	Metals, NITRO
HR-137Q-GP20	RH0067	1-Oct-03	0 - 1	Metals, NITRO
HR-137Q-GP21	RH0070	16-Oct-03	0 - 1	Metals, NITRO
HR-137Q-GP22	RH0074	15-Oct-03	0 - 1	Metals, NITRO
HR-137Q-GP23	RH0077	16-Oct-03	0 - 1	Metals, NITRO
HR-137Q-GP24	RH0080	6-Oct-03	0 - 1	Metals, NITRO
HR-137Q-GP25	RH0083	16-Oct-03	0 - 1	Metals, NITRO

Table 6-2

Surface Soil Samples Used in Streamlined Risk Assessment
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Location	Sample Number	Sample Date	Sample Depth (ft)	Chemical Analyses Performed
HR-137Q-GP26	RH0086	6-Oct-03	0 - 1	Metals, NITRO
HR-137Q-GP27	RH0090	30-Sep-03	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP28	RH0091	30-Sep-03	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP29	RH0092	30-Sep-03	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP30	RH0093	30-Sep-03	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP31	RH0094	15-Oct-03	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP32	RH0108	15-Oct-03	0 - 1	Lead
HR-137Q-GP33	RH0109	16-Oct-03	0 - 1	Lead
HR-137Q-GP34	RH0110	6-Oct-03	0 - 1	Lead
HR-137Q-GP35	RH0111	6-Oct-03	0 - 1	Lead
HR-137Q-GP36	RH0112	15-Oct-03	0 - 1	Lead
HR-137Q-GP37	RH0113	6-Oct-03	0 - 1	Lead
HR-137Q-GP38	RH0103	15-Oct-03	0 - 1	Lead
HR-137Q-GP39	RH0104	16-Oct-03	0 - 1	Lead
HR-137Q-GP40	RH0105	6-Oct-03	0 - 1	Lead
HR-137Q-GP41	RH0106	6-Oct-03	0 - 1	Lead
HR-137Q-GP42	RH0107	16-Oct-03	0 - 1	Lead
HR-137Q-MW01	RH0023	11-Jun-02	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-MW02	RH0026	11-Jun-02	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-MW03	RH0029	12-Jun-02	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-MW04	RH0031	10-Jun-02	0 - 1	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs

CL HERB = Chlorinated herbicides
CL PEST = Organochlorine pesticides
ft = feet
NITRO = Nitroaromatic compounds
OP PEST = Organophosphate pesticides
PCBs = Polychlorinated biphenyls
SVOCs = Semivolatile organic compounds
VOCs = Volatile organic compounds

Table 6-3

Subsurface Soil Samples Used in Streamlined Risk Assessment
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Location	Sample Number	Sample Date	Sample Depth (ft)	Chemical Analyses Performed
HR-137Q-GP01	RH0002	12-Jun-02	4 - 6	Metals, NITRO
HR-137Q-GP02	RH0004	12-Jun-02	4 - 6	Metals, NITRO
HR-137Q-GP03	RH0006	12-Jun-02	4 - 6	Metals, NITRO
HR-137Q-GP04	RH0008	18-Jun-02	1 - 2	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-GP05	RH0010	18-Jun-02	1 - 2	Metals, NITRO
HR-137Q-GP06	RH0012	18-Jun-02	1 - 2	Metals, NITRO
HR-137Q-GP07	RH0014	13-Jun-02	4 - 6	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-GP08	RH0016	12-Jun-02	10 - 12	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-GP09	RH0018	13-Jun-02	2 - 4	Metals, NITRO
HR-137Q-GP10	RH0020	13-Jun-02	2 - 4	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-GP11	RH0022	12-Jun-02	4 - 6	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-GP12	RH0042	30-Sep-03	1 - 2	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP12	RH0043	30-Sep-03	2 - 3	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP13	RH0045	14-Oct-03	1 - 2	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP14	RH0049	1-Oct-03	1 - 2	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP14	RH0050	1-Oct-03	8 - 9	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP15	RH0052	14-Oct-03	1 - 2	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP15	RH0053	14-Oct-03	2 - 3	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP16	RH0055	14-Oct-03	1 - 2	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-GP17	RH0058	15-Oct-03	1 - 2	Metals, NITRO
HR-137Q-GP17	RH0059	15-Oct-03	2 - 3	Metals, NITRO
HR-137Q-GP18	RH0061	14-Oct-03	1 - 2	Metals, NITRO
HR-137Q-GP19	RH0064	1-Oct-03	1 - 2	Metals, NITRO
HR-137Q-GP19	RH0065	1-Oct-03	2 - 2.5	Metals, NITRO
HR-137Q-GP20	RH0068	1-Oct-03	1 - 1.5	Metals, NITRO
HR-137Q-GP21	RH0072	16-Oct-03	1 - 2	Metals, NITRO
HR-137Q-GP21	RH0073	16-Oct-03	2 - 3	Metals, NITRO
HR-137Q-GP22	RH0075	15-Oct-03	1 - 2	Metals, NITRO

Table 6-3

Subsurface Soil Samples Used in Streamlined Risk Assessment
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Location	Sample Number	Sample Date	Sample Depth (ft)	Chemical Analyses Performed
HR-137Q-GP22	RH0076	15-Oct-03	2 - 3	Metals, NITRO
HR-137Q-GP23	RH0078	16-Oct-03	1 - 2	Metals, NITRO
HR-137Q-GP24	RH0081	6-Oct-03	1 - 2	Metals, NITRO
HR-137Q-GP24	RH0082	6-Oct-03	2 - 3	Metals, NITRO
HR-137Q-GP25	RH0084	16-Oct-03	1 - 2	Metals, NITRO
HR-137Q-GP25	RH0085	16-Oct-03	3 - 4	Metals, NITRO
HR-137Q-GP26	RH0088	6-Oct-03	1 - 2	Metals, NITRO
HR-137Q-GP26	RH0089	27-Oct-03	2 - 3	Metals, NITRO
HR-137Q-MW01	RH0025	11-Jun-02	4 - 6	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-MW02	RH0027	11-Jun-02	6 - 8	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-MW03	RH0030	12-Jun-02	6 - 8	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
HR-137Q-MW04	RH0032	11-Jun-02	6 - 8	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs

CL HERB = Chlorinated herbicides
CL PEST = Organochlorine pesticides
ft = feet
NITRO = Nitroaromatic compounds
OP PEST = Organophosphate pesticides
PCBs = Polychlorinated biphenyls
SVOCs = Semivolatile organic compounds
VOCs = Volatile organic compounds

Table 6-4

Surface Water Samples Used in Streamlined Risk Assessment
Former 81 mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Location	Sample Number	Sample Date	Chemical Analyses Performed
HR-137Q-SW/SD01	RH2001	9-Mar-04	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-SW/SD02	RH2002	11-Mar-04	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-SW/SD03	RH2004	8-Mar-04	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-SW/SD04	RH2005	10-Mar-04	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs

CL HERB = Chlorinated herbicides
CL PEST = Organochlorine pesticides
ft = feet
NITRO = Nitroaromatic compounds
OP PEST = Organophosphate pesticides
PCBs = Polychlorinated biphenyls
SVOCs = Semivolatile organic compounds
VOCs = Volatile organic compounds

Table 6-5

Sediment Samples Used in Streamlined Risk Assessment
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Location	Sample Number	Sample Date	Sample Depth (ft)	Chemical Analyses Performed
HR-137Q-SW/SD01	RH1001	9-Mar-04	0 - 0.5	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, TOC, VOCs
HR-137Q-SW/SD02	RH1002	11-Mar-04	0 - 0.5	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, TOC, VOCs
HR-137Q-SW/SD03	RH1004	8-Mar-04	0 - 0.5	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, TOC, VOCs
HR-137Q-SW/SD04	RH1005	10-Mar-04	0 - 0.5	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, TOC, VOCs

CL HERB = Chlorinated herbicides
CL PEST = Organochlorine pesticides
ft = feet
NITRO = Nitroaromatic compounds
OP PEST = Organophosphate pesticides
PCBs = Polychlorinated biphenyls
SVOCs = Semivolatile organic compounds
TOC = Total organic carbon
VOCs = Volatile organic compounds

Table 6-6

Groundwater Samples Used in Streamlined Risk Assessment
Former 81 mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Location	Sample Number	Sample Date	Chemical Analyses Performed
HR-137Q-MW01	RH3001	10-Jul-02	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
	RH3006	3-Jul-03	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-MW02	RH3002	8-Jul-02	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
	RH3008	2-Jul-03	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-MW03	RH3009	10-Jul-03	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs
HR-137Q-MW04	RH3005	12-Jul-02	CL HERB, CL PEST, Metals, NITRO, OP PEST, SVOCs, VOCs
	RH3010	8-Jul-03	CL HERB, CL PEST, Metals, NITRO, OP PEST, PCBs, SVOCs, VOCs

CL HERB = Chlorinated herbicides
CL PEST = Organochlorine pesticides
ft = feet
NITRO = Nitroaromatic compounds
OP PEST = Organophosphate pesticides
PCBs = Polychlorinated biphenyls
SVOCs = Semivolatile organic compounds
VOCs = Volatile organic compounds

Table 6-7

Selection of Site-Related Chemicals for Surface Soil[a]
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Chemical	Detection Frequency	Percent hits	Range of values (mg/kg) Detected Concentration Minimum	Detected Concentration Maximum	Method Detection Limits Minimum	Method Detection Limits Maximum	Statistical Distribution[b]	Arithmetic Mean (mg/kg)	95% UCL[c] (mg/kg)	Background Screening Criterion[d] (mg/kg)	Site-Related?[e]
Metals											
Aluminum	44 / 44	100	1.99E+03	1.91E+04	5.13E+00	6.44E+00	L	8.86E+03	1.14E+04	1.63E+04	N (c)
Antimony	6 / 40	15	5.21E+00	1.08E+02	4.02E+00	5.05E+00	NP	5.91E+00	1.79E+01	1.99E+00	Y
Arsenic	43 / 43	100	1.14E+00	5.31E+00	1.53E-01	1.92E-01	L	2.56E+00	3.21E+00	1.37E+01	N (a)
Barium	44 / 44	100	1.51E+01	1.57E+02	3.45E-01	4.33E-01	L	4.91E+01	6.55E+01	1.24E+02	N (b)
Beryllium	10 / 44	23	3.64E-01	1.14E+00	3.43E-01	4.30E-01	NP	2.90E-01	4.45E-01	8.00E-01	N (b)
Calcium	44 / 44	100	5.06E+01	1.11E+03	1.18E+01	1.49E+01	NP	2.06E+02	3.54E+02	1.72E+03	N (e)
Chromium	44 / 44	100	2.48E+00	1.92E+01	8.25E-01	1.04E+00	L	7.29E+00	9.58E+00	3.70E+01	N (a)
Cobalt	30 / 42	71	1.29E+00	2.17E+01	1.05E+00	1.32E+00	NP	3.23E+00	5.97E+00	1.52E+01	N (b)
Copper	44 / 44	100	2.63E+00	3.25E+02	7.99E-01	1.00E+00	NP	4.74E+01	9.17E+01	1.27E+01	Y
Iron	44 / 44	100	2.58E+03	1.61E+04	1.02E+01	1.28E+01	L	7.27E+03	9.12E+03	3.42E+04	N (a)
Lead	55 / 55	100	7.51E+00	1.21E+04	2.04E-01	2.16E+00	L	7.95E+02	NA	4.01E+01	Y
Magnesium	44 / 44	100	7.25E+01	7.33E+02	1.60E+01	2.01E+01	L	3.16E+02	4.16E+02	1.03E+03	N (e)
Manganese	44 / 44	100	1.01E+01	9.79E+02	3.97E-01	4.98E-01	L	1.75E+02	3.16E+02	1.58E+03	N (a)
Mercury	26 / 42	62	2.80E-02	1.02E-01	2.55E-02	3.20E-02	NP	3.57E-02	5.20E-02	8.00E-02	N (b)
Nickel	36 / 36	100	7.44E-01	5.83E+00	5.61E-01	7.04E-01	N	3.08E+00	3.45E+00	1.03E+01	N (a)
Potassium	24 / 24	100	1.02E+02	9.62E+02	7.59E+01	8.93E+01	L	3.41E+02	5.54E+02	8.00E+02	N (e)
Selenium	17 / 38	45	5.25E-01	1.21E+00	4.77E-01	5.94E-01	NP	4.75E-01	6.75E-01	4.80E-01	N (c)
Sodium	32 / 44	73	1.87E+01	9.93E+01	1.83E+01	2.30E+01	NP	3.74E+01	5.29E+01	6.34E+02	N (e)
Thallium	1 / 44	2	6.60E-01	6.60E-01	6.18E-01	7.76E-01	NP	3.48E-01	3.83E-01	3.43E+00	N (a)
Vanadium	44 / 44	100	4.69E+00	2.16E+01	8.01E-01	1.01E+00	N	1.19E+01	1.30E+01	5.88E+01	N (a)
Zinc	44 / 44	100	4.19E+00	7.26E+01	2.94E-01	3.69E-01	L	2.02E+01	2.82E+01	4.06E+01	N (c)
Herbicides											
2,2-Dichloropropanoic Acid	2 / 24	8	6.60E-03	9.50E-03	4.10E-03	1.30E-02	NP	4.84E-03	6.69E-03		Y
2,4-D	2 / 24	8	1.20E-02	1.30E-02	3.80E-03	6.30E-03	NP	3.32E-03	5.92E-03		Y
Dichloroprop	1 / 24	4	6.20E-03	6.20E-03	4.40E-03	6.00E-03	NP	2.69E-03	3.40E-03		Y
MCPA	2 / 24	8	9.90E-01	1.40E+00	1.90E-01	4.60E-01	NP	2.49E-01	5.24E-01		Y
MCPP	6 / 24	25	8.60E-01	1.90E+00	1.80E-01	3.10E-01	NP	4.40E-01	9.86E-01		Y
Pesticides											
4,4'-DDD	8 / 24	33	1.30E-03	8.30E-03	1.00E-03	1.40E-03	NP	1.71E-03	3.64E-03		Y
4,4'-DDE	14 / 24	58	1.20E-03	1.10E-02	9.70E-04	1.40E-03	NP	2.38E-03	4.62E-03		Y
4,4'-DDT	7 / 24	29	1.70E-03	6.00E-03	5.40E-04	8.00E-04	NP	1.34E-03	3.05E-03		Y
Aldrin	4 / 24	17	1.30E-03	1.50E-03	5.10E-04	9.10E-04	NP	5.15E-04	8.80E-04		Y
alpha-BHC	10 / 24	42	2.60E-04	1.90E-03	2.00E-04	2.60E-04	NP	4.84E-04	9.98E-04		Y
alpha-Chlordane	4 / 24	17	2.70E-04	4.80E-03	1.80E-04	2.10E-04	NP	3.94E-04	1.30E-03		Y
beta-BHC	7 / 24	29	7.60E-04	1.20E-02	2.40E-04	4.80E-04	NP	1.19E-03	3.49E-03		Y
delta-BHC	5 / 24	21	3.20E-04	8.80E-03	2.50E-04	6.60E-04	NP	9.50E-04	3.07E-03		Y
Dieldrin	5 / 24	21	8.40E-04	3.60E-03	3.60E-04	4.30E-04	NP	5.23E-04	1.26E-03		Y
Endosulfan I	1 / 24	4	2.00E-03	2.00E-03	4.00E-04	9.40E-04	NP	4.80E-04	7.76E-04		Y
Endosulfan II	5 / 24	21	7.50E-04	4.00E-03	3.70E-04	7.80E-04	NP	7.26E-04	1.66E-03		Y
Endosulfan sulfate	1 / 24	4	8.20E-04	8.20E-04	4.20E-04	7.10E-04	NP	2.86E-04	3.98E-04		Y

Table 6-7

Selection of Site-Related Chemicals for Surface Soil[a]
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Chemical	Detection Frequency	Percent hits	Range of values (mg/kg) Detected Concentration Minimum	Detected Concentration Maximum	Method Detection Limits Minimum	Method Detection Limits Maximum	Statistical Distribution[b]	Arithmetic Mean (mg/kg)	95% UCL[c] (mg/kg)	Background Screening Criterion[d] (mg/kg)	Site-Related?[e]
Pesticides (continued)											
Endrin	10 / 24	42	1.10E-03	3.20E-03	3.50E-04	4.30E-04	NP	9.25E-04	1.83E-03		Y
Endrin aldehyde	7 / 24	29	6.30E-04	7.00E-03	3.60E-04	4.50E-04	NP	1.02E-03	2.81E-03		Y
Endrin ketone	2 / 24	8	2.80E-03	1.00E-02	4.60E-04	5.50E-04	NP	7.62E-04	2.62E-03		Y
gamma-BHC (Lindane)	6 / 24	25	6.00E-04	4.50E-03	1.90E-04	3.40E-04	NP	4.66E-04	1.30E-03		Y
gamma-Chlordane	4 / 24	17	3.00E-04	1.40E-03	2.00E-04	2.60E-04	NP	2.38E-04	5.41E-04		Y
Heptachlor	5 / 24	21	5.70E-04	1.90E-03	2.40E-04	4.00E-04	NP	3.75E-04	8.49E-04		Y
Heptachlor epoxide	5 / 24	21	2.30E-04	1.30E-03	1.80E-04	2.10E-04	NP	2.29E-04	5.26E-04		Y
Methoxychlor	2 / 24	8	4.30E-03	6.00E-03	2.60E-03	4.40E-03	NP	2.08E-03	3.00E-03		Y
Nitroaromatics											
1,3,5-Trinitrobenzene	1 / 44	2	1.00E+00	1.00E+00	5.70E-02	5.70E-02	NP	5.06E-02	1.49E-01		Y
4-Amino-2,6-dinitrotoluene	1 / 44	2	7.30E-02	7.30E-02	6.60E-02	6.60E-02	NP	3.39E-02	3.80E-02		Y
Semivolatile Organic Compounds											
Bis(2-Ethylhexyl)phthalate	1 / 24	4	2.40E-01	2.40E-01	5.50E-02	1.30E-01	NP	4.05E-02	8.02E-02		N (d)
Volatile Organic Compounds											
2-Butanone	9 / 16	56	1.60E-02	2.40E-01	2.70E-03	1.70E-01	NP	4.11E-02	1.08E-01		Y
Acetone	21 / 24	88	1.50E-01	1.80E+00	2.70E-03	2.40E-01	NP	5.23E-01	8.96E-01		Y
p-Cymene	6 / 24	25	4.40E-03	5.30E-02	2.40E-04	1.50E-02	NP	4.70E-03	1.49E-02		Y
Toluene	5 / 24	21	1.40E-03	3.40E-03	5.30E-04	3.30E-02	NP	2.01E-03	5.78E-03		Y
Trichlorofluoromethane	2 / 24	8	5.10E-03	8.30E-03	2.60E-04	1.60E-02	NP	1.30E-03	3.71E-03		Y

mg/kg = milligrams per kilogram

N = Chemical is determined not to be site-related; Y = Chemical is determined to be site-related; NA = not applicable.

[a] Surface soil is defined as soil from 0 to 1 foot below ground surface.

[b] N = Normal distribution, L = Lognormal distribution, NP = Nonparametric distribution.

[c] 95% Upper Confidence Limit (UCL) calculated for L and NP using Chebychev Method (EPA, 1997, *Technology Support Center Issue: The Lognormal Distribution in Environmental Applications*, Office of Solid Waste and Emergency Response, EPA/600/R-95/128, NTIS No. PB96-963502.).
N distribution UCL calculated using EPA, 1992, *Supplemental Guidance to RAGS: Calculating the Concentration Term,* Office of Solid Waste and Emergency Response, Washington, DC, Publication 9285.7-081.

[d] Background screening criterion for inorganic constituents is 2 times the mean background concentration for surface soil.
(Science Applications International Corporation, 1998, Background Metals Survey Report, Fort McClellan, Anniston, Alabama, July).

[e] Rationale for exclusion of a chemical as site-related:

N (a) = excluded as a site-related chemical based on the Tier 1 statistical site to background evaluation.
N (b) = excluded as a site-related chemical based on the Tier 2 statistical site to background evaluation.
N (c) = excluded as a site-related chemical based on the Tier 3 geochemical evaluation.
N (d) = detected only at concentrations near or below the reporting limit in less than 5 percent of samples.
N (e) = essential nutrient.

Table 6-8

Selection of Site-Related Chemicals for Subsurface Soil[a]
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Chemical	Detection Frequency	Percent hits	Range of values (mg/kg) Detected Concentration Minimum	Detected Concentration Maximum	Method Detection Limits Minimum	Method Detection Limits Maximum	Statistical Distribution[b]	Arithmetic Mean (mg/kg)	95% UCL[c] (mg/kg)	Background Screening Criterion[d] (mg/kg)	Site-Related?[e]
Metals											
Aluminum	40 / 40	100	2.84E+03	5.73E+04	5.25E+00	6.44E+00	L	1.49E+04	2.17E+04	1.36E+04	N (c)
Antimony	1 / 38	3	9.02E+00	9.02E+00	4.12E+00	5.05E+00	NP	2.37E+00	3.18E+00	1.31E+00	Y
Arsenic	40 / 40	100	1.58E+00	1.15E+01	1.57E-01	1.92E-01	NP	3.60E+00	5.12E+00	1.83E+01	N (a)
Barium	40 / 40	100	4.73E+00	9.01E+01	3.53E-01	4.33E-01	N	3.87E+01	4.39E+01	2.34E+02	N (a)
Beryllium	10 / 40	25	3.75E-01	1.91E+00	3.51E-01	4.30E-01	NP	3.04E-01	5.18E-01	8.60E-01	N (b)
Cadmium	2 / 40	5	5.57E-01	6.35E-01	4.57E-01	5.61E-01	NP	2.59E-01	3.15E-01	2.20E-01	N (c)
Calcium	39 / 39	100	1.59E+01	2.77E+02	1.21E+01	1.49E+01	L	8.75E+01	1.28E+02	6.37E+02	N (e)
Chromium	40 / 40	100	6.30E+00	4.95E+01	8.44E-01	1.04E+00	NP	1.49E+01	2.12E+01	3.83E+01	N (b)
Cobalt	23 / 35	66	1.11E+00	8.55E+00	1.07E+00	1.32E+00	NP	2.30E+00	3.77E+00	1.75E+01	N (a)
Copper	40 / 40	100	1.54E+00	2.69E+02	8.18E-01	1.00E+00	NP	1.67E+01	4.59E+01	1.94E+01	Y
Iron	40 / 40	100	4.59E+03	3.84E+04	1.04E+01	1.28E+01	L	1.34E+04	1.91E+04	4.48E+04	N (a)
Lead	40 / 40	100	3.60E+00	4.39E+03	2.09E-01	2.56E-01	L	1.91E+02	NA	3.85E+01	Y
Magnesium	40 / 40	100	8.44E+01	1.58E+03	1.64E+01	2.01E+01	L	4.85E+02	6.99E+02	7.66E+02	N (e)
Manganese	40 / 40	100	3.99E+00	2.61E+02	4.06E-01	4.98E-01	L	5.76E+01	9.72E+01	1.36E+03	N (a)
Mercury	14 / 36	39	2.81E-02	1.03E-01	2.61E-02	3.20E-02	NP	2.66E-02	4.27E-02	7.00E-02	N (c)
Nickel	30 / 31	97	9.37E-01	1.22E+01	5.77E-01	7.04E-01	N	4.76E+00	5.58E+00	1.29E+01	N (a)
Potassium	30 / 32	94	1.07E+02	8.26E+03	7.51E+01	9.16E+01	L	9.19E+02	2.05E+03	7.11E+02	N (e)
Selenium	17 / 33	52	5.70E-01	2.23E+00	4.89E-01	5.99E-01	NP	6.96E-01	1.10E+00	4.70E-01	N (c)
Sodium	25 / 39	64	2.53E+01	7.89E+01	1.88E+01	2.30E+01	NP	3.37E+01	4.89E+01	7.02E+02	N (e)
Thallium	1 / 39	3	7.33E-01	7.33E-01	6.33E-01	7.69E-01	NP	3.44E-01	3.91E-01	1.40E+00	N (a)
Vanadium	40 / 40	100	7.93E+00	7.26E+01	8.20E-01	1.01E+00	L	2.12E+01	2.92E+01	6.49E+01	N (b)
Zinc	38 / 38	100	6.00E+00	5.51E+01	3.01E-01	3.69E-01	L	1.58E+01	2.18E+01	3.49E+01	N (b)
Herbicides											
2,2-Dichloropropanoic Acid	2 / 17	12	6.00E-03	1.40E-02	4.10E-03	1.30E-02	NP	5.24E-03	8.30E-03		Y
Pesticides											
4,4'-DDT	1 / 17	6	6.20E-03	6.20E-03	5.40E-04	1.40E-03	NP	6.99E-04	2.24E-03		Y
Aldrin	2 / 17	12	1.00E-03	1.50E-03	5.00E-04	1.60E-03	NP	4.51E-04	8.20E-04		Y
alpha-BHC	1 / 17	6	4.20E-04	4.20E-04	2.10E-04	4.20E-04	NP	1.39E-04	2.21E-04		Y
alpha-Chlordane	2 / 17	12	8.90E-04	1.00E-03	1.70E-04	3.70E-04	NP	1.94E-04	5.01E-04		Y
beta-BHC	3 / 17	18	6.70E-04	3.60E-03	2.50E-04	4.90E-04	NP	5.16E-04	1.46E-03		Y
delta-BHC	1 / 17	6	6.40E-04	6.40E-04	2.50E-04	6.20E-04	NP	1.72E-04	3.07E-04		Y
Endrin	2 / 17	12	2.30E-03	5.10E-03	3.50E-04	7.30E-04	NP	6.03E-04	1.98E-03		Y
Endrin aldehyde	1 / 17	6	1.50E-03	1.50E-03	3.50E-04	7.70E-04	NP	2.68E-04	6.12E-04		Y
gamma-BHC (Lindane)	2 / 17	12	8.70E-04	2.00E-03	1.90E-04	5.80E-04	NP	2.96E-04	8.10E-04		Y
Heptachlor	2 / 17	12	8.10E-04	1.60E-03	2.40E-04	6.80E-04	NP	2.70E-04	6.84E-04		Y
Heptachlor epoxide	1 / 17	6	1.20E-03	1.20E-03	1.70E-04	3.70E-04	NP	1.64E-04	4.55E-04		Y

Table 6-8

Selection of Site-Related Chemicals for Subsurface Soil[a]
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Chemical	Detection Frequency	Percent hits	Range of values (mg/kg) Detected Concentration Minimum	Detected Concentration Maximum	Method Detection Limits Minimum	Method Detection Limits Maximum	Statistical Distribution[b]	Arithmetic Mean (mg/kg)	95% UCL[c] (mg/kg)	Background Screening Criterion[d] (mg/kg)	Site-Related?[e]
Volatile Organic Compounds											
1,2-Dichloroethane	1 / 17	6	5.20E-03	5.20E-03	7.20E-04	1.00E-03	NP	7.19E-04	1.97E-03		Y
2-Butanone	4 / 12	33	7.20E-03	9.30E-03	2.20E-03	3.10E-03	NP	3.68E-03	8.14E-03		Y
Acetone	15 / 16	94	7.20E-03	5.70E-01	2.40E-03	1.30E-01	L	1.39E-01	3.05E-01		Y
p-Cymene	1 / 16	6	2.00E-02	2.00E-02	2.00E-04	2.80E-04	NP	1.37E-03	6.92E-03		Y
Toluene	1 / 17	6	1.90E-03	1.90E-03	4.40E-04	6.20E-04	NP	3.66E-04	7.95E-04		Y
Trichlorofluoromethane	2 / 17	12	1.10E-03	1.60E-03	2.20E-04	3.10E-04	NP	2.75E-04	7.24E-04		Y

mg/kg = milligrams per kilogram

N = Chemical is determined not to be site-related; Y = Chemical is determined to be site-related; NA = not applicable.

[a] Subsurface soil is defined as soil from 1 to 12 foot below ground surface.

[b] N = Normal distribution, L = Lognormal distribution, NP = Nonparametric distribution.

[c] 95% Upper Confidence Limit (UCL) calculated for L and NP using Chebychev Method (EPA, 1997, *Technology Support Center Issue: The Lognormal Distribution in Environmental Applications*, Office of Solid Waste and Emergency Response, EPA/600/R-95/128, NTIS No. PB96-963502.).

N distribution UCL calculated using EPA, 1992, *Supplemental Guidance to RAGS: Calculating the Concentration Term,* Office of Solid Waste and Emergency Response, Washington, DC, Publication 9285.7-081.

[d] Background screening criterion for inorganic constituents is 2 times the mean background concentration for subsurface soil.

(Science Applications International Corporation, 1998, Background Metals Survey Report, Fort McClellan, Anniston, Alabama, July).

[e] Rationale for exclusion of a chemical as site-related:

N (a) = excluded as a site-related chemical based on the Tier 1 statistical site to background evaluation.

N (b) = excluded as a site-related chemical based on the Tier 2 statistical site to background evaluation.

N (c) = excluded as a site-related chemical based on the Tier 3 geochemical evaluation.

N (d) = detected only at concentrations near or below the reporting limit in less than 5 percent of samples.

N (e) = essential nutrient.

Table 6-9

Selection of Chemicals of Potential Concern for Surface Soil[a]
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Site-Related Chemical	Maximum Detected Concentration (mg/kg)	Applicable SSSL (mg/kg) Recreational Site User				Applicable SSSL (mg/kg) Venison				Applicable SSSL (mg/kg) Groundskeeper			
		Noncancer	COPC?	Cancer	COPC?	Noncancer	COPC?	Cancer	COPC?	Noncancer	COPC?	Cancer	COPC?
Metals													
Antimony	1.08E+02	2.47E+02	N	NA	NA	5.99E+03	N	NA	NA	4.07E+01	Y	NA	NA
Copper	3.25E+02	2.52E+04	N	NA	NA	3.00E+04	N	NA	NA	4.08E+03	N	NA	NA
Lead	1.21E+04	4.00E+02	Y	NA	NA	4.00E+02	Y	NA	NA	8.80E+02	Y	NA	NA
Herbicides													
2,2-Dichloropropanoic Acid	9.50E-03	1.84E+04	N	NA	NA	4.42E+07	N	NA	NA	3.04E+03	N	NA	NA
2,4-D	1.30E-02	6.19E+03	N	NA	NA	NA	NA	NA	NA	1.02E+03	N	NA	NA
Dichloroprop	6.20E-03	4.94E+02	N	NA	NA	NA	NA	NA	NA	8.13E+01	N	NA	NA
MCPA	1.40E+00	3.09E+02	N	NA	NA	NA	NA	NA	NA	5.08E+01	N	NA	NA
MCPP	1.90E+00	6.18E+02	N	NA	NA	NA	NA	NA	NA	1.02E+02	N	NA	NA
Pesticides													
4,4'-DDD	8.30E-03	NA	NA	1.72E+02	N	NA	NA	3.21E+03	N	NA	NA	1.17E+01	N
4,4'-DDE	1.10E-02	NA	NA	1.22E+02	N	NA	NA	2.52E+03	N	NA	NA	8.27E+00	N
4,4'-DDT	6.00E-03	2.95E+02	N	1.22E+02	N	3.19E+03	N	1.31E+03	N	5.02E+01	N	8.11E+00	N
Aldrin	1.50E-03	1.82E+01	N	2.50E+00	N	4.96E+03	N	6.81E+02	N	3.03E+00	N	1.63E-01	N
alpha-BHC	1.90E-03	NA	NA	6.87E+00	N	NA	NA	8.53E+02	N	NA	NA	4.43E-01	N
alpha-Chlordane	4.80E-03	2.84E+02	N	1.14E+02	N	7.08E+03	N	2.83E+03	N	4.74E+01	N	7.80E+00	N
beta-BHC	1.20E-02	NA	NA	2.40E+01	N	NA	NA	2.90E+03	N	NA	NA	1.55E+00	N
delta-BHC	8.80E-03	1.85E+02	N	NA	NA	1.65E+04	N	NA	NA	3.05E+01	N	NA	NA
Dieldrin	3.60E-03	3.03E+01	N	2.65E+00	N	1.83E+03	N	1.60E+02	N	5.06E+00	N	1.74E-01	N
Endosulfan I	2.00E-03	3.69E+03	N	NA	NA	6.28E+05	N	NA	NA	6.09E+02	N	NA	NA
Endosulfan II	4.00E-03	3.69E+03	N	NA	NA	6.28E+05	N	NA	NA	6.09E+02	N	NA	NA
Endosulfan sulfate	8.20E-04	3.69E+03	N	NA	NA	6.28E+05	N	NA	NA	6.09E+02	N	NA	NA
Endrin	3.20E-03	1.82E+02	N	NA	NA	1.10E+04	N	NA	NA	3.03E+01	N	NA	NA
Endrin aldehyde	7.00E-03	1.82E+01	N	NA	NA	4.00E+02	N	NA	NA	3.03E+00	N	NA	NA
Endrin ketone	1.00E-02	1.82E+01	N	NA	NA	NA	NA	NA	NA	3.03E+00	N	NA	NA
gamma-BHC (Lindane)	4.50E-03	1.86E+02	N	3.33E+01	N	2.49E+04	N	4.47E+03	N	3.05E+01	N	2.19E+00	N
gamma-Chlordane	1.40E-03	2.84E+02	N	1.14E+02	N	7.08E+03	N	2.83E+03	N	4.74E+01	N	7.80E+00	N
Heptachlor	1.90E-03	3.08E+02	N	9.58E+00	N	2.43E+04	N	7.56E+02	N	5.08E+01	N	6.20E-01	N
Heptachlor epoxide	1.30E-03	8.01E+00	N	4.74E+00	N	2.11E+02	N	1.25E+02	N	1.32E+00	N	3.06E-01	N
Methoxychlor	6.00E-03	3.09E+03	N	NA	NA	1.89E+05	N	NA	NA	5.08E+02	N	NA	NA
Nitroaromatics													
1,3,5-Trinitrobenzene	1.00E+00	1.83E+04	N	NA	NA	NA	NA	NA	NA	3.04E+03	N	NA	NA
4-Amino-2,6-dinitrotoluene	7.30E-02	1.24E+02	N	NA	NA	NA	NA	NA	NA	2.03E+01	N	NA	NA
Volatile Organic Compounds													
2-Butanone	2.40E-01	3.70E+05	N	NA	NA	NA	NA	NA	NA	5.86E+04	N	NA	NA
Acetone	1.80E+00	6.16E+04	N	NA	NA	NA	NA	NA	NA	1.02E+04	N	NA	NA
p-Cymene	5.30E-02	1.23E+05	N	NA	NA	NA	NA	NA	NA	2.03E+04	N	NA	NA
Toluene	3.40E-03	1.24E+05	N	NA	NA	NA	NA	NA	NA	1.96E+04	N	NA	NA
Trichlorofluoromethane	8.30E-03	1.85E+05	N	NA	NA	NA	NA	NA	NA	2.96E+04	N	NA	NA

Table 6-9

Selection of Chemicals of Potential Concern for Surface Soil[a]
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Site-Related Chemical	Maximum Detected Concentration (mg/kg)	Applicable SSSL (mg/kg) Construction Worker				Applicable SSSL (mg/kg) On-Site Resident				Source-Term Concentration [b] (mg/kg)
		Noncancer	COPC?	Cancer	COPC?	Noncancer	COPC?	Cancer	COPC?	
Metals										
Antimony	1.08E+02	1.99E+01	Y	NA	NA	3.11E+00	Y	NA	NA	1.79E+01
Copper	3.25E+02	2.04E+03	N	NA	NA	3.13E+02	Y	NA	NA	9.17E+01
Lead	1.21E+04	8.80E+02	Y	NA	NA	4.00E+02	Y	NA	NA	7.95E+02
Herbicides										
2,2-Dichloropropanoic Acid	9.50E-03	1.48E+03	N	NA	NA	2.33E+02	N	NA	NA	
2,4-D	1.30E-02	4.98E+02	N	NA	NA	7.77E+01	N	NA	NA	
Dichloroprop	6.20E-03	3.97E+01	N	NA	NA	6.21E+00	N	NA	NA	
MCPA	1.40E+00	2.48E+01	N	NA	NA	3.88E+00	N	NA	NA	
MCPP	1.90E+00	4.97E+01	N	NA	NA	7.77E+00	N	NA	NA	
Pesticides										
4,4'-DDD	8.30E-03	NA	NA	1.37E+02	N	NA	NA	2.54E+00	N	
4,4'-DDE	1.10E-02	NA	NA	9.67E+01	N	NA	NA	1.79E+00	N	
4,4'-DDT	6.00E-03	2.35E+01	N	9.50E+01	N	3.83E+00	N	1.79E+00	N	
Aldrin	1.50E-03	1.46E+00	N	1.96E+00	N	2.32E-01	N	3.65E-02	N	
alpha-BHC	1.90E-03	NA	NA	5.42E+00	N	NA	NA	1.00E-01	N	
alpha-Chlordane	4.80E-03	2.15E+01	N	8.83E+01	N	3.79E+00	N	1.69E+00	N	
beta-BHC	1.20E-02	NA	NA	1.89E+01	N	NA	NA	3.50E-01	N	
delta-BHC	8.80E-03	1.49E+01	N	NA	NA	2.33E+00	N	NA	NA	
Dieldrin	3.60E-03	2.43E+00	N	2.08E+00	N	3.86E-01	N	3.88E-02	N	
Endosulfan I	2.00E-03	2.97E+02	N	NA	NA	4.66E+01	N	NA	NA	
Endosulfan II	4.00E-03	2.97E+02	N	NA	NA	4.66E+01	N	NA	NA	
Endosulfan sulfate	8.20E-04	2.97E+02	N	NA	NA	4.66E+01	N	NA	NA	
Endrin	3.20E-03	1.46E+01	N	NA	NA	2.32E+00	N	NA	NA	
Endrin aldehyde	7.00E-03	1.46E+00	N	NA	NA	2.32E-01	N	NA	NA	
Endrin ketone	1.00E-02	1.46E+00	N	NA	NA	2.32E-01	N	NA	NA	
gamma-BHC (Lindane)	4.50E-03	1.49E+01	N	2.68E+01	N	2.33E+00	N	4.85E-01	N	
gamma-Chlordane	1.40E-03	2.15E+01	N	8.83E+01	N	3.79E+00	N	1.69E+00	N	
Heptachlor	1.90E-03	2.48E+01	N	7.56E+00	N	3.88E+00	N	1.40E-01	N	
Heptachlor epoxide	1.30E-03	6.44E-01	N	3.74E+00	N	1.01E-01	N	6.91E-02	N	
Methoxychlor	6.00E-03	2.49E+02	N	NA	NA	3.89E+01	N	NA	NA	
Nitroaromatics										
1,3,5-Trinitrobenzene	1.00E+00	1.47E+03	N	NA	NA	2.32E+02	N	NA	NA	
4-Amino-2,6-dinitrotoluene	7.30E-02	9.96E+00	N	NA	NA	1.55E+00	N	NA	NA	
Volatile Organic Compounds										
2-Butanone	2.40E-01	2.86E+04	N	NA	NA	4.66E+03	N	NA	NA	
Acetone	1.80E+00	4.95E+03	N	NA	NA	7.76E+02	N	NA	NA	
p-Cymene	5.30E-02	9.93E+03	N	NA	NA	1.55E+03	N	NA	NA	
Toluene	3.40E-03	9.62E+03	N	NA	NA	1.55E+03	N	NA	NA	
Trichlorofluoromethane	8.30E-03	1.44E+04	N	NA	NA	2.33E+03	N	NA	NA	

SSSL = Site-specific screening level developed as described in the *Installation-Wide Work Plan, Fort McClellan,* Alabama, Draft Revision 2, (IT,2002).
COPC = Chemical of potential concern; mg/kg = milligram per kilogram.
N = Chemical is determined not to be a COPC; Y = Chemical is determined to be COPC; NA = Not applicable.
[a] Surface soil is defined as soil from 0 to 1 foot bgs.
[b] The 95% UCL or maximum concentration, whichever is lower, is selected as the source-term concentration for those chemicals identified as COPCs. The arithmetic mean is the source-term concentration for lead.

Table 6-10

Selection of Chemicals of Potential Concern for Subsurface Soil[a]
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Site-Related Chemical	Maximum Detected Concentration (mg/kg)	Applicable SSSL (mg/kg) Recreational Site User				Applicable SSSL (mg/kg) Venison				Applicable SSSL (mg/kg) Groundskeeper			
		Noncancer	COPC?	Cancer	COPC?	Noncancer	COPC?	Cancer	COPC?	Noncancer	COPC?	Cancer	COPC?
Metals													
Antimony	9.02E+00	2.47E+02	N	NA	NA	5.99E+03	N	NA	NA	4.07E+01	N	NA	NA
Copper	2.69E+02	2.52E+04	N	NA	NA	3.00E+04	N	NA	NA	4.08E+03	N	NA	NA
Lead	4.39E+03	4.00E+02	Y	NA	NA	4.00E+02	Y	NA	NA	8.80E+02	Y	NA	NA
Herbicides													
2,2-Dichloropropanoic Acid	1.40E-02	1.84E+04	N	NA	NA	4.42E+07	N	NA	NA	3.04E+03	N	NA	NA
Pesticides													
4,4'-DDT	6.20E-03	2.95E+02	N	1.22E+02	N	3.19E+03	N	1.31E+03	N	5.02E+01	N	8.11E+00	N
Aldrin	1.50E-03	1.82E+01	N	2.50E+00	N	4.96E+03	N	6.81E+02	N	3.03E+00	N	1.63E-01	N
alpha-BHC	4.20E-04	NA	NA	6.87E+00	N	NA	NA	8.53E+02	N	NA	NA	4.43E-01	N
alpha-Chlordane	1.00E-03	2.84E+02	N	1.14E+02	N	7.08E+03	N	2.83E+03	N	4.74E+01	N	7.80E+00	N
beta-BHC	3.60E-03	NA	NA	2.40E+01	N	NA	NA	2.90E+03	N	NA	NA	1.55E+00	N
delta-BHC	6.40E-04	1.85E+02	N	NA	NA	1.65E+04	N	NA	NA	3.05E+01	N	NA	NA
Endrin	5.10E-03	1.82E+02	N	NA	NA	1.10E+04	N	NA	NA	3.03E+01	N	NA	NA
Endrin aldehyde	1.50E-03	1.82E+01	N	NA	NA	4.00E+02	N	NA	NA	3.03E+00	N	NA	NA
gamma-BHC (Lindane)	2.00E-03	1.86E+02	N	3.33E+01	N	2.49E+04	N	4.47E+03	N	3.05E+01	N	2.19E+00	N
Heptachlor	1.60E-03	3.08E+02	N	9.58E+00	N	2.43E+04	N	7.56E+02	N	5.08E+01	N	6.20E-01	N
Heptachlor epoxide	1.20E-03	8.01E+00	N	4.74E+00	N	2.11E+02	N	1.25E+02	N	1.32E+00	N	3.06E-01	N
Volatile Organic Compounds													
1,2-Dichloroethane	5.20E-03	1.86E+04	N	4.76E+02	N	NA	NA	NA	NA	2.14E+03	N	3.07E+01	N
2-Butanone	9.30E-03	3.70E+05	N	NA	NA	NA	NA	NA	NA	5.86E+04	N	NA	NA
Acetone	5.70E-01	6.16E+04	N	NA	NA	NA	NA	NA	NA	1.02E+04	N	NA	NA
p-Cymene	2.00E-02	1.23E+05	N	NA	NA	NA	NA	NA	NA	2.03E+04	N	NA	NA
Toluene	1.90E-03	1.24E+05	N	NA	NA	NA	NA	NA	NA	1.96E+04	N	NA	NA
Trichlorofluoromethane	1.60E-03	1.85E+05	N	NA	NA	NA	NA	NA	NA	2.96E+04	N	NA	NA

Table 6-10

Selection of Chemicals of Potential Concern for Subsurface Soil[a]
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Site-Related Chemical	Maximum Detected Concentration (mg/kg)	Applicable SSSL (mg/kg) Construction Worker				Applicable SSSL (mg/kg) On-Site Resident				Source-Term Concentration [b] (mg/kg)
		Noncancer	COPC?	Cancer	COPC?	Noncancer	COPC?	Cancer	COPC?	
Metals										
Antimony	9.02E+00	1.99E+01	N	NA	NA	3.11E+00	Y	NA	NA	3.18E+00
Copper	2.69E+02	2.04E+03	N	NA	NA	3.13E+02	N	NA	NA	
Lead	4.39E+03	8.80E+02	Y	NA	NA	4.00E+02	Y	NA	NA	1.91E+02
Herbicides										
2,2-Dichloropropanoic Acid	1.40E-02	1.48E+03	N	NA	NA	2.33E+02	N	NA	NA	
Pesticides										
4,4'-DDT	6.20E-03	2.35E+01	N	9.50E+01	N	3.83E+00	N	1.79E+00	N	
Aldrin	1.50E-03	1.46E+00	N	1.96E+00	N	2.32E-01	N	3.65E-02	N	
alpha-BHC	4.20E-04	NA	NA	5.42E+00	N	NA	NA	1.00E-01	N	
alpha-Chlordane	1.00E-03	2.15E+01	N	8.83E+01	N	3.79E+00	N	1.69E+00	N	
beta-BHC	3.60E-03	NA	NA	1.89E+01	N	NA	NA	3.50E-01	N	
delta-BHC	6.40E-04	1.49E+01	N	NA	NA	2.33E+00	N	NA	NA	
Endrin	5.10E-03	1.46E+01	N	NA	NA	2.32E+00	N	NA	NA	
Endrin aldehyde	1.50E-03	1.46E+00	N	NA	NA	2.32E-01	N	NA	NA	
gamma-BHC (Lindane)	2.00E-03	1.49E+01	N	2.68E+01	N	2.33E+00	N	4.85E-01	N	
Heptachlor	1.60E-03	2.48E+01	N	7.56E+00	N	3.88E+00	N	1.40E-01	N	
Heptachlor epoxide	1.20E-03	6.44E-01	N	3.74E+00	N	1.01E-01	N	6.91E-02	N	
Volatile Organic Compounds										
1,2-Dichloroethane	5.20E-03	1.05E+03	N	3.76E+02	N	2.33E+02	N	6.93E+00	N	
2-Butanone	9.30E-03	2.86E+04	N	NA	NA	4.66E+03	N	NA	NA	
Acetone	5.70E-01	4.95E+03	N	NA	NA	7.76E+02	N	NA	NA	
p-Cymene	2.00E-02	9.93E+03	N	NA	NA	1.55E+03	N	NA	NA	
Toluene	1.90E-03	9.62E+03	N	NA	NA	1.55E+03	N	NA	NA	
Trichlorofluoromethane	1.60E-03	1.44E+04	N	NA	NA	2.33E+03	N	NA	NA	

SSSL = Site-specific screening level developed as described in the *Installation-Wide Work Plan, Fort McClellan,* Alabama, Draft Revision 2, (IT,2002).

COPC = Chemical of potential concern; mg/kg = milligram per kilogram.

N = Chemical is determined not to be a COPC; Y = Chemical is determined to be COPC; NA = Not applicable.

[a] Subsurface soil is defined as soil from 1 to 12 feet bgs.

[b] The 95% UCL or maximum concentration, whichever is lower, is selected as the source-term concentration for those chemicals identified as COPCs. The arithmetic mean is the source-term concentration for lead.

Table 6-11

Selection of Chemicals of Potential Concern for Total Soil[a]
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Chemical	Recreational Site User COPC			Venison COPC			Groundskeeper COPC		
	Surface Soil Source-Term Concentration	Subsurface Soil Source-Term Concentration	Total Soil Source-Term Concentration	Surface Soil Source-Term Concentration	Subsurface Soil Source-Term Concentration	Total Soil Source-Term Concentration	Surface Soil Source-Term Concentration	Subsurface Soil Source-Term Concentration	Total Soil Source-Term Concentration
Metals									
Antimony	NA	NA	NA	NA	NA	NA	1.79E+01	NA	1.79E+01
Copper	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	7.95E+02	1.91E+02	7.95E+02	7.95E+02	1.91E+02	7.95E+02	7.95E+02	1.91E+02	7.95E+02

Table 6-11

Selection of Chemicals of Potential Concern for Total Soil[a]
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Chemical	Construction Worker COPC			On-Site Resident COPC		
	Surface Soil Source-Term Concentration	Subsurface Soil Source-Term Concentration	Total Soil Source-Term Concentration	Surface Soil Source-Term Concentration	Subsurface Soil Source-Term Concentration	Total Soil Source-Term Concentration
Metals						
Antimony	1.79E+01	NA	1.79E+01	1.79E+01	3.18E+00	1.79E+01
Copper	NA	NA	NA	9.17E+01	NA	9.17E+01
Lead	7.95E+02	1.91E+02	7.95E+02	7.95E+02	1.91E+02	7.95E+02

COPC = Chemical of potential concern.
NA = not applicable; the source-term concentration is presented only if the chemical is selected as a COPC.
[a] Total soil is a hypothetical medium that includes all COPCs identified in surface and subsurface soil.

Table 6-12

Selection of Site-Related Chemicals for Surface Water
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Chemical	Detection Frequency	Percent hits	Range of values (mg/L) Detected Concentration Minimum	Detected Concentration Maximum	Method Detection Limits Minimum	Method Detection Limits Maximum	Arithmetic Mean (mg/L)	Background Screening Criterion[a] (mg/L)	Site-Related?[b]
Metals									
Barium	4 / 4	100	2.15E-02	2.37E-02	1.00E-03	1.00E-03	2.26E-02	7.54E-02	N (a)
Calcium	4 / 4	100	3.34E-01	3.83E-01	1.50E-01	1.50E-01	3.60E-01	2.52E+01	N (d)
Iron	3 / 3	100	1.98E-02	5.69E-02	6.00E-03	6.00E-03	3.22E-02	1.96E+01	N (a)
Magnesium	4 / 4	100	4.35E-01	4.77E-01	5.00E-02	5.00E-02	4.56E-01	1.10E+01	N (d)
Manganese	4 / 4	100	9.64E-03	1.14E-02	3.00E-03	3.00E-03	1.06E-02	5.65E-01	N (a)
Sodium	4 / 4	100	7.13E-01	7.87E-01	7.00E-02	7.00E-02	7.57E-01	3.44E+00	N (d)

NA = Not applicable; mg/L = milligrams per liter

N = Chemical is determined not to be site-related; Y = Chemical is determined to be site-related.

[a] Background screening criterion for inorganic constituents is 2 times the mean background concentration for surface water. *(Science Applications International Corporation, 1998, Background Metals Survey Report, Fort McClellan*, Anniston, Alabama, July).

[b] Rationale for exclusion of a chemical as site-related:

N (a) = excluded as a site-related chemical based on the Tier 1 statistical site to background evaluation.

N (b) = excluded as a site-related chemical based on the Tier 2 statistical site to background evaluation.

N (c) = excluded as a site-related chemical based on the Tier 3 geochemical evaluation.

N (d) = essential nutrient.

Table 6-13

Selection of Site-Related Chemicals for Sediment
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Chemical	Detection Frequency	Percent hits	Range of values (mg/kg) Detected Concentration Minimum	Detected Concentration Maximum	Method Detection Limits Minimum	Method Detection Limits Maximum	Arithmetic Mean (mg/kg)	Background Screening Criterion[a] (mg/kg)	Site-Related?[b]
Metals									
Aluminum	4 / 4	100	2.90E+03	4.96E+03	6.16E+00	7.06E+00	3.97E+03	8.59E+03	N (a)
Arsenic	4 / 4	100	1.83E+00	2.35E+00	1.84E-01	2.11E-01	1.99E+00	1.13E+01	N (a)
Barium	4 / 4	100	2.20E+01	5.91E+01	4.14E-01	4.75E-01	3.31E+01	9.89E+01	N (a)
Beryllium	2 / 4	50	4.20E-01	5.85E-01	4.11E-01	4.72E-01	3.55E-01	9.70E-01	N (a)
Calcium	4 / 4	100	7.33E+01	4.34E+03	1.42E+01	1.63E+01	1.14E+03	1.11E+03	N (d)
Chromium	4 / 4	100	4.90E+00	6.53E+00	9.90E-01	1.14E+00	5.87E+00	3.12E+01	N (a)
Cobalt	4 / 4	100	1.67E+00	7.60E+00	1.26E+00	1.44E+00	4.51E+00	1.10E+01	N (a)
Copper	4 / 4	100	3.11E+00	1.07E+01	9.60E-01	1.10E+00	6.20E+00	1.71E+01	N (a)
Iron	4 / 4	100	9.27E+03	1.73E+04	1.22E+01	1.40E+01	1.24E+04	3.53E+04	N (a)
Lead	4 / 4	100	1.26E+01	7.23E+01	2.45E-01	2.81E-01	3.08E+01	3.78E+01	N (c)
Magnesium	4 / 4	100	9.96E+01	2.42E+03	1.92E+01	2.21E+01	6.97E+02	9.06E+02	N (d)
Manganese	4 / 4	100	1.06E+02	5.78E+02	4.76E-01	5.46E-01	3.47E+02	7.12E+02	N (a)
Nickel	4 / 4	100	1.98E+00	3.81E+00	6.73E-01	7.72E-01	2.51E+00	1.30E+01	N (a)
Potassium	2 / 2	100	4.10E+02	5.47E+02	8.77E+01	8.90E+01	4.79E+02	1.01E+03	N (d)
Sodium	2 / 4	50	6.95E+01	8.95E+01	2.20E+01	2.53E+01	4.53E+01	6.92E+02	N (d)
Vanadium	4 / 4	100	9.61E+00	1.15E+01	9.62E-01	1.10E+00	1.02E+01	4.09E+01	N (a)
Zinc	4 / 4	100	7.74E+00	1.43E+01	3.53E-01	4.04E-01	1.01E+01	5.27E+01	N (a)
Pesticides									
alpha-BHC	1 / 4	25	9.10E-04	9.10E-04	2.50E-04	2.70E-04	3.25E-04		Y
Volatile Organic Compounds									
2-Butanone	2 / 4	50	8.70E-03	3.00E-02	2.90E-03	3.90E-03	1.05E-02		Y
Acetone	4 / 4	100	3.20E-02	3.80E-01	2.90E-03	3.80E-03	1.54E-01		Y
p-Cymene	1 / 4	25	1.80E-03	1.80E-03	2.60E-04	1.60E-03	8.70E-04		Y

NA = Not applicable; mg/kg = milligrams per kilogram

N = Chemical is determined not to be site-related; Y = Chemical is determined to be site-related.

[a] Background screening criterion for inorganic constituents is 2 times the mean background concentration for sediment.

(Science Applications International Corporation, 1998, Background Metals Survey Report, Fort McClellan, Anniston, Alabama, July).

[b] Rationale for exclusion of a chemical as site-related:

N (a) = excluded as a site-related chemical based on the Tier 1 statistical site to background evaluation.

N (b) = excluded as a site-related chemical based on the Tier 2 statistical site to background evaluation.

N (c) = excluded as a site-related chemical based on the Tier 3 geochemical evaluation.

N (d) = essential nutrient.

Table 6-14

Selection of Chemicals of Potential Concern for Sediment
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Site-Related Chemical	Maximum Detected Concentration (mg/kg)	Applicable SSSL (mg/kg)								Source-Term Concentration[b] (mg/kg)
		Recreational Site User				On-Site Resident[a]				
		Noncancer	COPC?	Cancer	COPC?	Noncancer	COPC?	Cancer	COPC?	
Pesticides										
alpha-BHC	9.10E-04	NA	NA	1.17E+01	N	NA	NA	1.17E+01	N	
Volatile Organic Compounds										
2-Butanone	3.00E-02	6.23E+05	N	NA	NA	6.23E+05	N	NA	NA	
Acetone	3.80E-01	1.03E+05	N	NA	NA	1.03E+05	N	NA	NA	
p-Cymene	1.80E-03	2.08E+05	N	NA	NA	2.08E+05	N	NA	NA	

SSSL = Site-specific screening level developed as described in the *Draft Revision 2 Installation-Wide Work Plan, Fort McClellan, Alabama* (IT, February 2002).
COPC = Chemical of potential concern; mg/kg = milligrams per kilogram.
N = Chemical is determined not to be a COPC; Y = Chemical is determined to be COPC; NA = Not applicable.
[a] The resident is evaluated using the recreational site-user SSSLs.
[b] The maximum detected concentration is selected as the source-term concentration for those chemicals identified as COPCs.

Table 6-15

Selection of Site-Related Chemicals for Groundwater
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Chemical	Detection Frequency	Percent hits	Range of values (mg/L) Detected Concentration Minimum	Detected Concentration Maximum	Method Detection Limits Minimum	Method Detection Limits Maximum	Arithmetic Mean (mg/L)	Background Screening Criterion[a] (mg/L)	Site-Related?[b]
Metals									
Aluminum	7 / 7	100	1.87E-01	1.02E+01	5.00E-02	5.00E-02	2.67E+00	2.34E+00	N (c)
Arsenic	2 / 6	33	2.00E-03	4.92E-03	1.70E-03	1.70E-03	1.72E-03	1.78E-02	N (a)
Barium	7 / 7	100	9.17E-03	1.26E-01	1.00E-03	1.00E-03	4.20E-02	1.27E-01	N (a)
Calcium	6 / 6	100	1.72E-01	1.85E+00	1.50E-01	1.50E-01	7.59E-01	5.65E+01	N (d)
Chromium	1 / 7	14	1.15E-02	1.15E-02	6.00E-03	6.00E-03	4.21E-03		N (b)
Copper	1 / 7	14	7.29E-03	7.29E-03	5.00E-03	5.00E-03	3.18E-03	2.55E-02	N (a)
Iron	7 / 7	100	8.02E-02	8.29E+00	6.00E-03	6.00E-03	1.61E+00	7.04E+00	N (b)
Lead	1 / 5	20	3.57E-03	3.57E-03	1.30E-03	1.30E-03	1.23E-03	8.00E-03	N (a)
Magnesium	6 / 6	100	1.43E-01	1.79E+00	5.00E-02	5.00E-02	6.58E-01	2.13E+01	N (d)
Manganese	7 / 7	100	6.83E-03	3.60E-01	3.00E-03	3.00E-03	1.07E-01	5.81E-01	N (a)
Potassium	4 / 5	80	3.11E+00	1.19E+01	7.50E-01	7.50E-01	5.13E+00	7.20E+00	N (d)
Sodium	5 / 5	100	7.16E-01	1.75E+00	7.00E-02	7.00E-02	1.06E+00	1.48E+01	N (d)
Vanadium	1 / 7	14	8.10E-03	8.10E-03	5.00E-03	5.00E-03	3.30E-03	1.70E-02	N (a)
Zinc	1 / 7	14	3.80E-02	3.80E-02	2.70E-02	2.70E-02	1.70E-02	2.20E-01	N (a)
Volatile Organic Compounds									
Chloroform	1 / 7	14	2.20E-04	2.20E-04	1.20E-04	1.20E-04	8.29E-05		Y

NA = Not applicable; mg/L = milligrams per liter

N = Chemical is determined not to be site-related; Y = Chemical is determined to be site-related.

[a] Background screening criterion for inorganic constituents is 2 times the mean background concentration for groundwater.
(Science Applications International Corporation, 1998, Background Metals Survey Report, Fort McClellan, Anniston, Alabama, July).

[b] Rationale for exclusion of a chemical as site-related:

N (a) = excluded as a site-related chemical based on the Tier 1 statistical site to background evaluation.
N (b) = excluded as a site-related chemical based on the Tier 2 statistical site to background evaluation.
N (c) = excluded as a site-related chemical based on the Tier 3 geochemical evaluation.
N (d) = essential nutrient.

Table 6-16

Selection of Chemicals of Potential Concern for Groundwater
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Site-Related Chemical	Maximum Detected Concentration (mg/L)	Applicable SSSL (mg/L)												Source-Term Concentration[a] (mg/L)
		Groundskeeper				Construction Worker				On-Site Resident				
		Noncancer	COPC?	Cancer	COPC?	Noncancer	COPC?	Cancer	COPC?	Noncancer	COPC?	Cancer	COPC?	
Volatile Organic Compounds														
Chloroform	2.20E-04	9.86E-02	N	NA	NA	9.86E-02	N	NA	NA	1.54E-02	N	NA	NA	

SSSL = Site-specific screening level developed as described in the *Draft Revision 2 Installation-Wide Work Plan, Fort McClellan, Alabama* (IT, February 2002).
COPC = Chemical of potential concern; mg/L = milligrams per liter
N = Chemical is determined not to be a COPC; Y = Chemical is determined to be COPC; NA = Not applicable.
[a] The maximum detected concentration is selected as the source-term concentration for those chemicals identified as COPCs.

Table 6-17

Cancer Risk and Noncancer Hazard Estimates Across All Media
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Medium	Recreational Site User		Groundskeeper		Construction Worker		On-Site Resident	
	HI	ILCR	HI	ILCR	HI	ILCR	HI	ILCR
Surface Soil[a]	NA	NA	NE	NE	NE	NE	NE	NE
Venison Consumption	NA	NA	NE	NE	NE	NE	NE	NE
Total Soil[b]	NA	NA	4.40E-02	NA	8.99E-02	NA	6.06E-01	NA
Groundwater	NE	NE	NA	NA	NA	NA	NA	NA
Surface Water	NA	NA	NE	NE	NE	NE	NA	NA
Sediment	NA	NA	NE	NE	NE	NE	NA	NA
Total HI / ILCR: Current Site Use	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
Total HI / ILCR: Future Site Use	**NA**	**NA**	**4.40E-02**	**NA**	**8.99E-02**	**NA**	**6.06E-01**	**NA**

HI = Hazard index
ILCR = Incremental lifetime cancer risk
NA = Not applicable; no chemicals of potential concern (with the possible exception of lead) were selected for this receptor in this medium.
NE = Not evaluated; the receptor is not evaluated for exposure to this medium.

[a] Current site use involves exposure to surface soil in its present condition.
[b] Future site use involves exposure to total soil, assuming that excavation and grading may be necessary for site development.

Table 6-18

Cancer Risk and Noncancer Hazard Estimates for the Recreational Site User Exposed to Surface Soil[a]
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

COPC	Source-Term Concentration (mg/kg)	Total Noncancer Hazard / Cancer Risk Recreational Site User HI	ILCR
Metals			
Lead	7.95E+02	NA	NA
Total HI / ILCR		**NA**	**NA**

[a] Surface soil is defined as soil from 0 to 1 foot below ground surface.
COPC = Chemical of potential concern
HI = Hazard index
ILCR = Incremental lifetime cancer risk
mg/kg = Milligrams per kilogram
NA = Not applicable

Table 6-19

Cancer Risk and Noncancer Hazard Estimates for Venison Consumption (Indirect Exposure to Surface Soil)[a]
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

COPC	Source-Term Concentration (mg/kg)	Total Noncancer Hazard / Cancer Risk Venison Consumption HI	ILCR
Metals			
Lead	7.95E+02	NA	NA
Total HI / ILCR		**NA**	**NA**

[a] Surface soil is defined as soil from 0 to 1 foot below ground surface.
COPC = Chemical of potential concern
HI = Hazard index
ILCR = Incremental lifetime cancer risk
mg/kg = Milligrams per kilogram
NA = Not applicable

Table 6-20

Cancer Risk and Noncancer Hazard Estimates for the Recreational Site User Exposed to Total Soil
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

COPC	Source-Term Concentration (mg/kg)	Total Noncancer Hazard / Cancer Risk Recreational Site User HI	ILCR
Metals			
Lead	7.95E+02	NA	NA
Total HI / ILCR		**NA**	**NA**

COPC = Chemical of potential concern
HI = Hazard index
ILCR = Incremental lifetime cancer risk
mg/kg = Milligrams per kilogram
NA = Not applicable

Table 6-21

Cancer Risk and Noncancer Hazard Estimates for the Groundskeeper Exposed to Total Soil
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

COPC	Source-Term Concentration (mg/kg)	Total Noncancer Hazard / Cancer Risk Groundskeeper HI	ILCR
Metals			
Antimony	1.79E+01	4.40E-02	NA
Lead	7.95E+02	NA	NA
Total HI / ILCR		**4.40E-02**	**NA**

COPC = Chemical of potential concern
HI = Hazard index
ILCR = Incremental lifetime cancer risk
mg/kg = Milligrams per kilogram
NA = Not applicable

Table 6-22

Cancer Risk and Noncancer Hazard Estimates for the Construction Worker Exposed to Total Soil
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

COPC	Source-Term Concentration (mg/kg)	Total Noncancer Hazard / Cancer Risk Construction Worker HI	ILCR
Metals			
Antimony	1.79E+01	8.99E-02	NA
Lead	7.95E+02	NA	NA
Total HI / ILCR		**8.99E-02**	**NA**

COPC = Chemical of potential concern
HI = Hazard index
ILCR = Incremental lifetime cancer risk
mg/kg = Milligrams per kilogram
NA = Not applicable

Table 6-23

Cancer Risk and Noncancer Hazard Estimates for the On-Site Resident Exposed to Total Soil
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

COPC	Source-Term Concentration (mg/kg)	Total Noncancer Hazard / Cancer Risk On-Site Resident HI	ILCR
Metals			
Antimony	1.79E+01	5.76E-01	NA
Copper	9.17E+01	2.94E-02	NA
Lead	7.95E+02	NA	NA
Total HI / ILCR		**6.06E-01**	**NA**

COPC = Chemical of potential concern
HI = Hazard index
ILCR = Incremental lifetime cancer risk
mg/kg = Milligrams per kilogram
NA = Not applicable

Table 6-24

Recreational Site User: Comparison of Site Concentrations with Cleanup Level
Former 81 mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Identification		Lead (mg/kg)	
Sample Location	Sample Number	Site Related [a,b]	Cleanup Level [c]
Surface Soil			
HR-137Q-GP17	RH0057	***1.21E+04***	7.60E+03
HR-137Q-GP20	RH0067	7.27E+03	7.60E+03
HR-137Q-GP04	RH0007	3.46E+03	7.60E+03
HR-137Q-MW04	RH0031	2.33E+03	7.60E+03
HR-137Q-GP13	RH0044	2.32E+03	7.60E+03
HR-137Q-GP22	RH0074	1.88E+03	7.60E+03
HR-137Q-MW03	RH0029	1.71E+03	7.60E+03
HR-137Q-GP24	RH0080	1.63E+03	7.60E+03
HR-137Q-GP26	RH0086	1.31E+03	7.60E+03
HR-137Q-GP15	RH0051	1.25E+03	7.60E+03
HR-137Q-GP18	RH0060	8.74E+02	7.60E+03
HR-137Q-MW01	RH0023	7.17E+02	7.60E+03
HR-137Q-GP06	RH0011	6.32E+02	7.60E+03
HR-137Q-GP19	RH0063	6.22E+02	7.60E+03
HR-137Q-GP08	RH0015	5.03E+02	7.60E+03
HR-137Q-GP25	RH0083	4.96E+02	7.60E+03
HR-137Q-MW02	RH0026	3.94E+02	7.60E+03
HR-137Q-GP11	RH0021	3.82E+02	7.60E+03
HR-137Q-GP09	RH0017	3.80E+02	7.60E+03
HR-137Q-GP07	RH0013	3.34E+02	7.60E+03
HR-137Q-GP14	RH0048	2.50E+02	7.60E+03
HR-137Q-GP30	RH0093	2.15E+02	7.60E+03
HR-137Q-GP03	RH0005	1.94E+02	7.60E+03
HR-137Q-GP33	RH0109	1.72E+02	7.60E+03
HR-137Q-GP12	RH0041	1.33E+02	7.60E+03
HR-137Q-GP34	RH0110	1.31E+02	7.60E+03
HR-137Q-GP10	RH0019	6.14E+01	7.60E+03
Subsurface Soil			
HR-137Q-GP04	RH0008	4.39E+03	7.60E+03
HR-137Q-GP24	RH0082	3.37E+02	7.60E+03
HR-137Q-GP24	RH0081	3.19E+02	7.60E+03
HR-137Q-GP19	RH0064	2.11E+02	7.60E+03
HR-137Q-GP18	RH0061	2.08E+02	7.60E+03
HR-137Q-GP26	RH0088	1.71E+02	7.60E+03
HR-137Q-GP22	RH0075	1.45E+02	7.60E+03
HR-137Q-GP11	RH0022	1.40E+02	7.60E+03
HR-137Q-GP14	RH0049	1.22E+02	7.60E+03
HR-137Q-GP06	RH0012	1.06E+02	7.60E+03
HR-137Q-GP25	RH0084	1.04E+02	7.60E+03
HR-137Q-MW04	RH0032	1.04E+02	7.60E+03
HR-137Q-GP20	RH0068	1.00E+02	7.60E+03
HR-137Q-GP10	RH0020	9.91E+01	7.60E+03
HR-137Q-MW03	RH0030	9.78E+01	7.60E+03
HR-137Q-GP17	RH0058	8.89E+01	7.60E+03
HR-137Q-GP14	RH0050	7.69E+01	7.60E+03
HR-137Q-GP13	RH0045	5.75E+01	7.60E+03
HR-137Q-GP22	RH0076	5.32E+01	7.60E+03

mg/kg = Milligrams per kilogram

[a] Concentration is presented only if metal was determined to be site related in this sample (Appendix H).

[b] Concentrations in bold italic font exceed the cleanup level.

[c] See text.

Table 6-25

Groundskeeper: Comparison of Site Concentrations with Cleanup Levels
Former 81 mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Identification		Lead (mg/kg)		Antimony (mg/kg)	
Sample Location	Sample Number	Site Related [a,b]	Cleanup Level [c]	Site Related [a,b]	Cleanup Level [c]
Surface Soil					
HR-137Q-GP17	RH0057	***1.21E+04***	8.80E+02	1.08E+02	6.06E+02
HR-137Q-GP20	RH0067	***7.27E+03***	8.80E+02	2.38E+01	6.06E+02
HR-137Q-GP04	RH0007	***3.46E+03***	8.80E+02	5.69E+00	6.06E+02
HR-137Q-MW04	RH0031	***2.33E+03***	8.80E+02	NA	NA
HR-137Q-GP13	RH0044	***2.32E+03***	8.80E+02	NA	NA
HR-137Q-GP22	RH0074	***1.88E+03***	8.80E+02	NA	NA
HR-137Q-MW03	RH0029	***1.71E+03***	8.80E+02	NA	NA
HR-137Q-GP24	RH0080	***1.63E+03***	8.80E+02	6.13E+00	6.06E+02
HR-137Q-GP26	RH0086	***1.31E+03***	8.80E+02	NA	NA
HR-137Q-GP15	RH0051	***1.25E+03***	8.80E+02	1.20E+01	6.06E+02
HR-137Q-GP18	RH0060	8.74E+02	8.80E+02	NA	NA
HR-137Q-MW01	RH0023	7.17E+02	8.80E+02	5.21E+00	6.06E+02
HR-137Q-GP06	RH0011	6.32E+02	8.80E+02	NA	NA
HR-137Q-GP19	RH0063	6.22E+02	8.80E+02	NA	NA
HR-137Q-GP08	RH0015	5.03E+02	8.80E+02	NA	NA
HR-137Q-GP25	RH0083	4.96E+02	8.80E+02	NA	NA
HR-137Q-MW02	RH0026	3.94E+02	8.80E+02	NA	NA
HR-137Q-GP11	RH0021	3.82E+02	8.80E+02	NA	NA
HR-137Q-GP09	RH0017	3.80E+02	8.80E+02	NA	NA
HR-137Q-GP07	RH0013	3.34E+02	8.80E+02	NA	NA
HR-137Q-GP14	RH0048	2.50E+02	8.80E+02	NA	NA
HR-137Q-GP30	RH0093	2.15E+02	8.80E+02	NA	NA
HR-137Q-GP03	RH0005	1.94E+02	8.80E+02	NA	NA
HR-137Q-GP33	RH0109	1.72E+02	8.80E+02	NA	NA
HR-137Q-GP12	RH0041	1.33E+02	8.80E+02	NA	NA
HR-137Q-GP34	RH0110	1.31E+02	8.80E+02	NA	NA
HR-137Q-GP10	RH0019	6.14E+01	8.80E+02	NA	NA
Subsurface Soil					
HR-137Q-GP04	RH0008	***4.39E+03***	8.80E+02	NA	NA
HR-137Q-GP24	RH0082	3.37E+02	8.80E+02	NA	NA
HR-137Q-GP24	RH0081	3.19E+02	8.80E+02	NA	NA
HR-137Q-GP19	RH0064	2.11E+02	8.80E+02	NA	NA
HR-137Q-GP18	RH0061	2.08E+02	8.80E+02	NA	NA
HR-137Q-GP26	RH0088	1.71E+02	8.80E+02	NA	NA
HR-137Q-GP22	RH0075	1.45E+02	8.80E+02	NA	NA
HR-137Q-GP11	RH0022	1.40E+02	8.80E+02	NA	NA
HR-137Q-GP14	RH0049	1.22E+02	8.80E+02	NA	NA
HR-137Q-GP06	RH0012	1.06E+02	8.80E+02	NA	NA
HR-137Q-GP25	RH0084	1.04E+02	8.80E+02	NA	NA
HR-137Q-MW04	RH0032	1.04E+02	8.80E+02	NA	NA
HR-137Q-GP20	RH0068	1.00E+02	8.80E+02	NA	NA
HR-137Q-GP10	RH0020	9.91E+01	8.80E+02	NA	NA
HR-137Q-MW03	RH0030	9.78E+01	8.80E+02	NA	NA
HR-137Q-GP17	RH0058	8.89E+01	8.80E+02	NA	NA
HR-137Q-GP14	RH0050	7.69E+01	8.80E+02	NA	NA
HR-137Q-GP13	RH0045	5.75E+01	8.80E+02	NA	NA
HR-137Q-GP22	RH0076	5.32E+01	8.80E+02	NA	NA

mg/kg = Milligrams per kilogram

[a] Concentration is presented only if metal was determined to be site related in this sample (Appendix H).

[b] Concentrations in bold italic font exceed the cleanup level.

[c] See text.

Table 6-26

Construction Worker: Comparison of Site Concentrations with Cleanup Levels
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Identification		Lead (mg/kg)		Antimony (mg/kg)	
Sample Location	Sample Number	Site Related [a,b]	Cleanup Level [c]	Site Related [a,b]	Cleanup Level [c]
Surface Soil					
HR-137Q-GP17	RH0057	***1.21E+04***	8.80E+02	1.08E+02	2.96E+02
HR-137Q-GP20	RH0067	***7.27E+03***	8.80E+02	2.38E+01	2.96E+02
HR-137Q-GP04	RH0007	***3.46E+03***	8.80E+02	5.69E+00	2.96E+02
HR-137Q-MW04	RH0031	***2.33E+03***	8.80E+02	NA	NA
HR-137Q-GP13	RH0044	***2.32E+03***	8.80E+02	NA	NA
HR-137Q-GP22	RH0074	***1.88E+03***	8.80E+02	NA	NA
HR-137Q-MW03	RH0029	***1.71E+03***	8.80E+02	NA	NA
HR-137Q-GP24	RH0080	***1.63E+03***	8.80E+02	6.13E+00	2.96E+02
HR-137Q-GP26	RH0086	***1.31E+03***	8.80E+02	NA	NA
HR-137Q-GP15	RH0051	***1.25E+03***	8.80E+02	1.20E+01	2.96E+02
HR-137Q-GP18	RH0060	8.74E+02	8.80E+02	NA	NA
HR-137Q-MW01	RH0023	7.17E+02	8.80E+02	5.21E+00	2.96E+02
HR-137Q-GP06	RH0011	6.32E+02	8.80E+02	NA	NA
HR-137Q-GP19	RH0063	6.22E+02	8.80E+02	NA	NA
HR-137Q-GP08	RH0015	5.03E+02	8.80E+02	NA	NA
HR-137Q-GP25	RH0083	4.96E+02	8.80E+02	NA	NA
HR-137Q-MW02	RH0026	3.94E+02	8.80E+02	NA	NA
HR-137Q-GP11	RH0021	3.82E+02	8.80E+02	NA	NA
HR-137Q-GP09	RH0017	3.80E+02	8.80E+02	NA	NA
HR-137Q-GP07	RH0013	3.34E+02	8.80E+02	NA	NA
HR-137Q-GP14	RH0048	2.50E+02	8.80E+02	NA	NA
HR-137Q-GP30	RH0093	2.15E+02	8.80E+02	NA	NA
HR-137Q-GP03	RH0005	1.94E+02	8.80E+02	NA	NA
HR-137Q-GP33	RH0109	1.72E+02	8.80E+02	NA	NA
HR-137Q-GP12	RH0041	1.33E+02	8.80E+02	NA	NA
HR-137Q-GP34	RH0110	1.31E+02	8.80E+02	NA	NA
HR-137Q-GP10	RH0019	6.14E+01	8.80E+02	NA	NA
Subsurface Soil					
HR-137Q-GP04	RH0008	***4.39E+03***	8.80E+02	NA	NA
HR-137Q-GP24	RH0082	3.37E+02	8.80E+02	NA	NA
HR-137Q-GP24	RH0081	3.19E+02	8.80E+02	NA	NA
HR-137Q-GP19	RH0064	2.11E+02	8.80E+02	NA	NA
HR-137Q-GP18	RH0061	2.08E+02	8.80E+02	NA	NA
HR-137Q-GP26	RH0088	1.71E+02	8.80E+02	NA	NA
HR-137Q-GP22	RH0075	1.45E+02	8.80E+02	NA	NA
HR-137Q-GP11	RH0022	1.40E+02	8.80E+02	NA	NA
HR-137Q-GP14	RH0049	1.22E+02	8.80E+02	NA	NA
HR-137Q-GP06	RH0012	1.06E+02	8.80E+02	NA	NA
HR-137Q-GP25	RH0084	1.04E+02	8.80E+02	NA	NA
HR-137Q-MW04	RH0032	1.04E+02	8.80E+02	NA	NA
HR-137Q-GP20	RH0068	1.00E+02	8.80E+02	NA	NA
HR-137Q-GP10	RH0020	9.91E+01	8.80E+02	NA	NA
HR-137Q-MW03	RH0030	9.78E+01	8.80E+02	NA	NA
HR-137Q-GP17	RH0058	8.89E+01	8.80E+02	NA	NA
HR-137Q-GP14	RH0050	7.69E+01	8.80E+02	NA	NA
HR-137Q-GP13	RH0045	5.75E+01	8.80E+02	NA	NA
HR-137Q-GP22	RH0076	5.32E+01	8.80E+02	NA	NA

mg/kg = Milligrams per kilogram

NA = Not applicable

[a] Concentration is presented only if metal was determined to be site related in this sample (Appendix H).

[b] Concentrations in bold italic font exceed the cleanup level.

[c] See text.

Table 6-27

On-Site Resident: Comparison of Site Concentrations with Cleanup Levels
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Sample Identification		Lead (mg/kg)		Antimony (mg/kg)		Copper (mg/kg)	
Sample Location	Sample Number	Site Related [a,b]	Cleanup Level [c]	Site Related [a,b]	Cleanup Level [c]	Site Related [a,b]	Cleanup Level [c]
Surface Soil							
HR-137Q-GP17	RH0057	***1.21E+04***	4.00E+02	***1.08E+02***	4.63E+01	1.15E+02	4.67E+03
HR-137Q-GP20	RH0067	***7.27E+03***	4.00E+02	2.38E+01	4.63E+01	3.25E+02	4.67E+03
HR-137Q-GP04	RH0007	***3.46E+03***	4.00E+02	5.69E+00	4.63E+01	1.78E+02	4.67E+03
HR-137Q-MW04	RH0031	***2.33E+03***	4.00E+02	NA	NA	1.44E+02	4.67E+03
HR-137Q-GP13	RH0044	***2.32E+03***	4.00E+02	NA	NA	2.04E+02	4.67E+03
HR-137Q-GP22	RH0074	***1.88E+03***	4.00E+02	NA	NA	7.48E+01	4.67E+03
HR-137Q-MW03	RH0029	***1.71E+03***	4.00E+02	NA	NA	1.34E+02	4.67E+03
HR-137Q-GP24	RH0080	***1.63E+03***	4.00E+02	6.13E+00	4.63E+01	1.32E+02	4.67E+03
HR-137Q-GP26	RH0086	***1.31E+03***	4.00E+02	NA	NA	6.76E+01	4.67E+03
HR-137Q-GP15	RH0051	***1.25E+03***	4.00E+02	1.20E+01	4.63E+01	5.71E+01	4.67E+03
HR-137Q-GP18	RH0060	***8.74E+02***	4.00E+02	NA	NA	4.12E+01	4.67E+03
HR-137Q-MW01	RH0023	***7.17E+02***	4.00E+02	5.21E+00	4.63E+01	3.15E+01	4.67E+03
HR-137Q-GP06	RH0011	***6.32E+02***	4.00E+02	NA	NA	5.40E+01	4.67E+03
HR-137Q-GP19	RH0063	***6.22E+02***	4.00E+02	NA	NA	5.84E+01	4.67E+03
HR-137Q-GP08	RH0015	***5.03E+02***	4.00E+02	NA	NA	4.02E+01	4.67E+03
HR-137Q-GP25	RH0083	***4.96E+02***	4.00E+02	NA	NA	5.61E+01	4.67E+03
HR-137Q-MW02	RH0026	3.94E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP11	RH0021	3.82E+02	4.00E+02	NA	NA	3.48E+01	4.67E+03
HR-137Q-GP09	RH0017	3.80E+02	4.00E+02	NA	NA	2.33E+01	4.67E+03
HR-137Q-GP07	RH0013	3.34E+02	4.00E+02	NA	NA	1.39E+01	4.67E+03
HR-137Q-GP14	RH0048	2.50E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP30	RH0093	2.15E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP03	RH0005	1.94E+02	4.00E+02	NA	NA	1.90E+01	4.67E+03
HR-137Q-GP33	RH0109	1.72E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP12	RH0041	1.33E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP34	RH0110	1.31E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP10	RH0019	6.14E+01	4.00E+02	NA	NA	NA	NA
HR-137Q-DEP07	RH0115	NA	NA	NA	NA	5.52E+01	4.67E+03
HR-137Q-DEP05	RH0039	NA	NA	NA	NA	4.84E+01	4.67E+03
Subsurface Soil							
HR-137Q-GP04	RH0008	***4.39E+03***	4.00E+02	9.02E+00	4.63E+01	NA	NA
HR-137Q-GP24	RH0082	3.37E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP24	RH0081	3.19E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP19	RH0064	2.11E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP18	RH0061	2.08E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP26	RH0088	1.71E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP22	RH0075	1.45E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP11	RH0022	1.40E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP14	RH0049	1.22E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP06	RH0012	1.06E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP25	RH0084	1.04E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-MW04	RH0032	1.04E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP20	RH0068	1.00E+02	4.00E+02	NA	NA	NA	NA
HR-137Q-GP10	RH0020	9.91E+01	4.00E+02	NA	NA	NA	NA
HR-137Q-MW03	RH0030	9.78E+01	4.00E+02	NA	NA	NA	NA
HR-137Q-GP17	RH0058	8.89E+01	4.00E+02	NA	NA	NA	NA
HR-137Q-GP14	RH0050	7.69E+01	4.00E+02	NA	NA	NA	NA
HR-137Q-GP13	RH0045	5.75E+01	4.00E+02	NA	NA	NA	NA
HR-137Q-GP22	RH0076	5.32E+01	4.00E+02	NA	NA	NA	NA

mg/kg = Milligrams per kilogram
NA = Not applicable
[a] Concentration is presented only if metal was determined to be site related in this sample (Appendix H).
[b] Concentrations in bold italic font exceed the cleanup level.
[c] See text.

Table 6-28

Risk Summary by Sample Medium and Receptor[a]
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Risk Endpoint	Surface Soil	Subsurface Soil	Surface Water	Sediment	Groundwater
Current Recreational Site User					
Cancer risk[b]	Acceptable	NE	Acceptable	Acceptable	NE
Noncancer hazard[c]	Acceptable[d]	NE	Acceptable	Acceptable	NE
Future Recreational Site User					
Cancer risk[b]	Acceptable	Acceptable	Acceptable	Acceptable	NE
Noncancer hazard[c]	Acceptable[d]	Acceptable	Acceptable	Acceptable	NE
Future Groundskeeper					
Cancer risk[b]	Acceptable	Acceptable	NE	NE	Acceptable
Noncancer hazard[c]	Lead	Acceptable	NE	NE	Acceptable
Future Construction Worker					
Cancer risk[b]	Acceptable	Acceptable	NE	NE	Acceptable
Noncancer hazard[c]	Lead	Acceptable	NE	NE	Acceptable
Future On Site Resident					
Cancer risk[b]	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable
Noncancer hazard[c]	Lead	Acceptable	Acceptable	Acceptable	Acceptable

NE = Not evaluated: receptor not exposed to this medium on this range.
[a]Cancer risk and noncancer hazard are presented as "acceptable" (see footnotes b and c), or the chemicals of concern for unacceptable results are listed.
[b]Cancer risk is termed "acceptable" if the total ILCR summed across all relevant media rounded to one significant figure does not exceed 1E-4.
[c]Noncancer hazard is termed "acceptable" if the total HI for all target organs summed across all relevant media rounded to one significant figure does not exceed the threshold level of 1, and the average concentration of lead in an appropriately sized exposure unit does not exceed its cleanup level.
[d]The concentration of lead in one surface soil sample exceeds the cleanup level. Exposure is deemed acceptable because the likelihood of prolonged exposure to the small area represented by this sample is small.

Table 7-1

Feeding Guilds and Exposure Pathways
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Trophic Level	Feeding Guild	Exposure Pathways
1	Primary Producers (terrestrial plants)	Direct uptake from soil
2	Terrestrial Invertebrates	Ingestion of soil Direct contact with soil
	Benthic Invertebrates	Ingestion of sediment Direct contact with sediment
	Herbivorous Birds	Ingestion of soil Ingestion of terrestrial plants
	Herbivorous Mammals	Ingestion of soil Ingestion of terrestrial plants
3	Omnivorous Birds	Ingestion of soil Ingestion of terrestrial plants Ingestion of terrestrial invertebrates
	Omnivorous Mammals	Ingestion of soil Ingestion of terrestrial plants Ingestion of terrestrial invertebrates Ingestion of prey
	Invertivorous Birds	Ingestion of soil Ingestion of terrestrial invertebrates
	Invertivorous Mammals	Ingestion of soil Ingestion of terrestrial invertebrates
	Amphibians & Reptiles	Ingestion of soil and sediment Ingestion of terrestrial plants Ingestion of terrestrial invertebrates Ingestion of benthic invertebrates
4	Carnivorous Birds (raptors)	Ingestion of soil Ingestion of prey
	Carnivorous Mammals	Ingestion of soil Ingestion of prey

Table 7-2

Constituents of Potential Ecological Concern in Surface Soil
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Constituents	Background Threshold Value[a] (mg/kg)	Ecological Screening Value[b] (mg/kg)	Maximum Detected Conc. (mg/kg)	Minimum Detected Conc. (mg/kg)	Mean Detected Conc. (mg/kg)	Frequency of Detection	Maximum Hazard Quotient	Mean Hazard Quotient	Constituent Of Potential Ecological Concern[c]
Metals									
Aluminum	1.63E+04	5.00E+01	1.91E+04	1.99E+03	8.86E+03	44 / 44	382.00	177.11	5
Antimony	1.99E+00	3.50E+00	1.08E+02	5.21E+00	5.91E+00	6 / 40	30.86	1.69	**YES**
Arsenic	1.37E+01	1.00E+01	5.31E+00	1.14E+00	2.56E+00	43 / 43	0.53	0.26	1,3
Barium	1.24E+02	1.65E+02	1.57E+02	1.51E+01	4.91E+01	44 / 44	0.95	0.30	1,4
Beryllium	8.00E-01	1.10E+00	1.14E+00	3.64E-01	2.90E-01	10 / 44	1.04	0.26	1,4
Calcium	1.72E+03	NA	1.11E+03	5.06E+01	2.06E+02	44 / 44	ND	ND	2,3
Chromium	3.70E+01	4.00E-01	1.92E+01	2.48E+00	7.29E+00	44 / 44	48.00	18.22	3
Cobalt	1.52E+01	2.00E+01	2.17E+01	1.29E+00	3.23E+00	30 / 42	1.09	0.16	1,4
Copper	1.27E+01	4.00E+01	3.25E+02	2.63E+00	4.74E+01	44 / 44	8.13	1.18	**YES**
Iron	3.42E+04	2.00E+02	1.61E+04	2.58E+03	7.27E+03	44 / 44	80.50	36.33	3
Lead	4.01E+01	5.00E+01	1.21E+04	7.51E+00	7.95E+02	55 / 55	242.00	15.89	**YES**
Magnesium	1.03E+03	4.40E+05	7.33E+02	7.25E+01	3.16E+02	44 / 44	0.0017	0.0007	1,2,3,5
Manganese	1.58E+03	1.00E+02	9.79E+02	1.01E+01	1.75E+02	44 / 44	9.79	1.75	3
Mercury	8.00E-02	1.00E-01	1.02E-01	2.80E-02	3.57E-02	26 / 42	1.02	0.36	1,4
Nickel	1.03E+01	3.00E+01	5.83E+00	7.44E-01	3.08E+00	36 / 36	0.19	0.10	1,3
Potassium	8.00E+02	NA	9.62E+02	1.02E+02	3.41E+02	24 / 24	ND	ND	2,5
Selenium	4.80E-01	8.10E-01	1.21E+00	5.25E-01	4.75E-01	17 / 38	1.49	0.59	1,5
Sodium	6.34E+02	NA	9.93E+01	1.87E+01	3.74E+01	32 / 44	ND	ND	2,3
Thallium	3.43E+00	1.00E+00	6.60E-01	6.60E-01	3.48E-01	1 / 44	0.66	0.35	1,3
Vanadium	5.88E+01	2.00E+00	2.16E+01	4.69E+00	1.19E+01	44 / 44	10.80	5.96	3
Zinc	4.06E+01	5.00E+01	7.26E+01	4.19E+00	2.02E+01	44 / 44	1.45	0.40	1,5
Volatile Organic Compounds									
2-Butanone	NA	8.96E+01	2.40E-01	1.60E-02	4.11E-02	9 / 16	0.0027	0.0005	1
Acetone	NA	2.50E+00	1.80E+00	1.50E-01	5.23E-01	21 / 24	0.72	0.21	1
p-Cymene	NA	NA	5.30E-02	4.40E-03	4.70E-03	6 / 24	ND	ND	6
Toluene	NA	5.00E-02	3.40E-03	1.40E-03	2.01E-03	5 / 24	0.068	0.040	1
Trichlorofluoromethane	NA	1.00E-01	8.30E-03	5.10E-03	1.30E-03	2 / 24	0.083	0.013	1
Semivolatile Organic Compounds									
Bis(2-Ethylhexyl)phthalate	NA	9.26E-01	2.40E-01	2.40E-01	4.05E-02	1 / 24	0.26	0.04	1
Pesticides									
4,4'-DDD	NA	2.50E-03	8.30E-03	1.30E-03	1.71E-03	8 / 24	3.32	0.68	7
4,4'-DDE	NA	2.50E-03	1.10E-02	1.20E-03	2.38E-03	14 / 24	4.40	0.95	7
4,4'-DDT	NA	2.50E-03	6.00E-03	1.70E-03	1.34E-03	7 / 24	2.40	0.54	7
Aldrin	NA	2.50E-03	1.50E-03	1.30E-03	5.15E-04	4 / 24	0.60	0.21	1
alpha-BHC	NA	2.50E-03	1.90E-03	2.60E-04	4.84E-04	10 / 24	0.76	0.19	1
alpha-Chlordane	NA	1.00E-01	4.80E-03	2.70E-04	3.94E-04	4 / 24	0.0480	0.0039	1

Table 7-2

Constituents of Potential Ecological Concern in Surface Soil
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Constituents	Background Threshold Value[a] (mg/kg)	Ecological Screening Value[b] (mg/kg)	Maximum Detected Conc. (mg/kg)	Minimum Detected Conc. (mg/kg)	Mean Detected Conc. (mg/kg)	Frequency of Detection	Maximum Hazard Quotient	Mean Hazard Quotient	Constituent Of Potential Ecological Concern[c]
Pesticides (con't)									
beta-BHC	NA	1.00E-03	1.20E-02	7.60E-04	1.19E-03	7 / 24	12.00	1.19	7
delta-BHC	NA	9.94E+00	8.80E-03	3.20E-04	9.50E-04	5 / 24	0.00089	0.00010	1
Dieldrin	NA	5.00E-04	3.60E-03	8.40E-04	5.23E-04	5 / 24	7.20	1.05	7
Endosulfan I	NA	1.19E-01	2.00E-03	2.00E-03	4.80E-04	1 / 24	0.0168	0.0040	1
Endosulfan II	NA	1.19E-01	4.00E-03	7.50E-04	7.26E-04	5 / 24	0.0336	0.0061	1
Endosulfan sulfate	NA	3.58E-02	8.20E-04	8.20E-04	2.86E-04	1 / 24	0.0229	0.0080	1
Endrin	NA	1.00E-03	3.20E-03	1.10E-03	9.25E-04	10 / 24	3.20	0.93	7
Endrin aldehyde	NA	1.05E-02	7.00E-03	6.30E-04	1.02E-03	7 / 24	0.67	0.10	1
Endrin ketone	NA	1.05E-02	1.00E-02	2.80E-03	7.62E-04	2 / 24	0.95	0.07	1
gamma-BHC (Lindane)	NA	5.00E-05	4.50E-03	6.00E-04	4.66E-04	6 / 24	90.00	9.31	7
gamma-Chlordane	NA	1.00E-01	1.40E-03	3.00E-04	2.38E-04	4 / 24	0.0140	0.0024	1
Heptachlor	NA	1.00E-01	1.90E-03	5.70E-04	3.75E-04	5 / 24	0.0190	0.0038	1
Heptachlor epoxide	NA	1.52E-01	1.30E-03	2.30E-04	2.29E-04	5 / 24	0.0086	0.0015	1
Methoxychlor	NA	1.99E-02	6.00E-03	4.30E-03	2.08E-03	2 / 24	0.302	0.104	1
Herbicides									
2,2-Dichloropropanoic Acid	NA	1.00E-01	9.50E-03	6.60E-03	4.84E-03	2 / 24	0.10	0.05	1
2,4-D	NA	1.00E-01	1.30E-02	1.20E-02	3.32E-03	2 / 24	0.13	0.03	1
Dichloroprop	NA	1.00E-01	6.20E-03	6.20E-03	2.69E-03	1 / 24	0.062	0.027	1
MCPA	NA	1.00E-01	1.40E+00	9.90E-01	2.49E-01	2 / 24	14.00	2.49	7
MCPP	NA	1.00E-01	1.90E+00	8.60E-01	4.40E-01	6 / 24	19.00	4.40	7
Nitroaromatics									
1,3,5-Trinitrobenzene	NA	3.76E-01	1.00E+00	1.00E+00	5.06E-02	1 / 44	2.66	0.13	7
4-Amino-2,6-dinitrotoluene	NA	NA	7.30E-02	7.30E-02	3.39E-02	1 / 44	ND	ND	7

[a] Background threshold value is two times (2x) the arithmetic mean of background metals (SAIC, 1998).

[b] Ecological Screening Values (ESV) are presented in *Human Health and Ecological Screening Values and PAH Background Summary Report* (IT, 2000).

[c] Rationale for exclusion as a COPEC:

1 - Maximum detected concentration is less than ESV
2 - Essential macro-nutrient, only toxic at extremely high concentrations (i.e. 10-times naturally-occurring background concentrations).
3 - Maximum detected concentration is less than the background threshold value (BTV).
4 - Slippage Test and Wilcoxon Rank Sum Test indicate the concentration of this constituent is statistically similar to background concentrations.
5 - Geochemical evaluation of the data indicate that this constituent is naturally occurring.
6 - No ESV available; however, maximum detected concentration of this constituent is less than ESV for similar compounds.
7 - Additional lines of evidence indicate that this constituent should not be considered a COPEC (see text).

NA - Not available.
ND - Not determined.

Table 7-3

Constituents of Potential Ecological Concern in Surface Water
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Constituent	Background Threshold Value [a] (mg/L)	Ecological Screening Value [b] (mg/L)	Maximum Detected Conc. (mg/L)	Minimum Detected Conc. (mg/L)	Mean Detected Conc. (mg/L)	Frequency of Detection	Maximum Hazard Quotient	Mean Hazard Quotient	Constituent of Potential Ecological Concern[c]
Metals									
Barium	7.54E-02	3.90E-03	2.37E-02	2.15E-02	2.26E-02	4 / 4	6.08	5.78	3
Calcium	2.52E+01	NA	3.83E-01	3.34E-01	3.60E-01	4 / 4	ND	ND	2,3
Iron	1.96E+01	1.00E+00	5.69E-02	1.98E-02	3.22E-02	3 / 3	0.057	0.032	1,3
Magnesium	1.10E+01	NA	4.77E-01	4.35E-01	4.56E-01	4 / 4	ND	ND	2,3
Manganese	5.65E-01	8.00E-02	1.14E-02	9.64E-03	1.06E-02	4 / 4	0.14	0.13	1,3
Sodium	3.44E+00	NA	7.87E-01	7.13E-01	7.57E-01	4 / 4	ND	ND	2,3

[a] Background threshold value is two times (2x) the arithmetic mean of background metals (SAIC, 1998).

[b] Ecological Screening Values (ESV) are presented in *Human Health and Ecological Screening Values and PAH Background Summary Report* (IT, 2000).

[c] Rationale for exclusion as a COPEC:

1 - Maximum detected concentration is less than ESV.

2 - Essential macro-nutrient, only toxic at extremely high concentrations (i.e. 10-times naturally-occurring background concentrations).

3 - Maximum detected concentration is less than the background threshold value (BTV).

NA - Not available.

ND - Not determined.

Table 7-4

Constituents of Potential Ecological Concern in Sediment
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Alabama

Constituent	Background Threshold Value [a] (mg/kg)	Ecological Screening Value [b] (mg/kg)	Maximum Detected Conc. (mg/kg)	Minimum Detected Conc. (mg/kg)	Mean Detected Conc. (mg/kg)	Frequency of Detection	Maximum Hazard Quotient	Mean Hazard Quotient	Constituent of Potential Ecological Concern[c]
Metals									
Aluminum	8.59E+03	NA	4.96E+03	2.90E+03	3.97E+03	4 / 4	ND	ND	3
Arsenic	1.13E+01	7.24E+00	2.35E+00	1.83E+00	1.99E+00	4 / 4	0.32	0.27	1,3
Barium	9.89E+01	NA	5.91E+01	2.20E+01	3.31E+01	4 / 4	ND	ND	3
Beryllium	9.70E-01	NA	5.85E-01	4.20E-01	3.55E-01	2 / 4	ND	ND	3
Calcium	1.11E+03	NA	4.34E+03	7.33E+01	1.14E+03	4 / 4	ND	ND	2,4
Chromium	3.12E+01	5.23E+01	6.53E+00	4.90E+00	5.87E+00	4 / 4	0.12	0.11	1,3
Cobalt	1.10E+01	5.00E+01	7.60E+00	1.67E+00	4.51E+00	4 / 4	0.15	0.09	1,3
Copper	1.71E+01	1.87E+01	1.07E+01	3.11E+00	6.20E+00	4 / 4	0.57	0.33	1,3
Iron	3.53E+04	NA	1.73E+04	9.27E+03	1.24E+04	4 / 4	ND	ND	3
Lead	3.78E+01	3.02E+01	7.23E+01	1.26E+01	3.08E+01	4 / 4	2.39	1.02	5
Magnesium	9.06E+02	NA	2.42E+03	9.96E+01	6.97E+02	4 / 4	ND	ND	2,4
Manganese	7.12E+02	NA	5.78E+02	1.06E+02	3.47E+02	4 / 4	ND	ND	3
Nickel	1.30E+01	1.59E+01	3.81E+00	1.98E+00	2.51E+00	4 / 4	0.24	0.16	1,3
Potassium	1.01E+03	NA	5.47E+02	4.10E+02	4.79E+02	2 / 2	ND	ND	2,3
Sodium	6.92E+02	NA	8.95E+01	6.95E+01	4.53E+01	2 / 4	ND	ND	2,3
Vanadium	4.09E+01	NA	1.15E+01	9.61E+00	1.02E+01	4 / 4	ND	ND	3
Zinc	5.27E+01	1.24E+02	1.43E+01	7.74E+00	1.01E+01	4 / 4	0.12	0.08	1,3
Volatile Organic Compounds									
2-Butanone	NA	1.37E-01	3.00E-02	8.70E-03	1.05E-02	2 / 4	0.22	0.08	1
Acetone	NA	4.53E-01	3.80E-01	3.20E-02	1.54E-01	4 / 4	0.84	0.34	1
p-Cymene	NA	NA	1.80E-03	1.80E-03	8.70E-04	1 / 4	ND	ND	6
Pesticides									
alpha-BHC	NA	6.00E-03	9.10E-04	9.10E-04	3.25E-04	1 / 4	0.15	0.05	1

[a] Background threshold value is two times (2x) the arithmetic mean of background metals (SAIC, 1998).

[b] Ecological Screening Values (ESV) are presented in *Human Health and Ecological Screening Values and PAH Background Summary Report* (IT, 2000).

[c] Rationale for exclusion as a COPEC:

1 - Maximum detected concentration is less than ESV.

2 - Essential macro-nutrient, only toxic at extremely high concentrations (i.e. 10-times naturally-occurring background concentrations).

3 - Maximum detected concentration is less than the background threshold value (BTV).

4 - Slippage Test and Wilcoxon Rank Sum Test indicate the concentration of this constituent is statistically similar to background concentrations.

5 - Geochemical evaluation of the data indicate that this constituent is naturally occurring.

6 - No ESV available; however, maximum detected concentration of this constituent is less than ESV for similar compounds.

NA - Not available. ND - Not determined.

Table 7-5

Constituents of Potential Ecological Concern in Groundwater
Former 81mm Mortar Range, Parcel 137Q-X
Fort McClellan, Calhoun County, Alabama

Constituent	Background Threshold Value [a] (mg/L)	Ecological Screening Value [b] (mg/L)	Maximum Detected Conc. (mg/L)	Minimum Detected Conc. (mg/L)	Mean Detected Conc. (mg/L)	Frequency of Detection	Maximum Hazard Quotient	Mean Hazard Quotient	Constituent of Potential Ecological Concern[c]
Metals									
Aluminum	2.34E+00	8.70E-02	1.02E+01	1.87E-01	2.67E+00	7 / 7	117.24	30.72	5
Arsenic	1.78E-02	1.90E-01	4.92E-03	2.00E-03	1.72E-03	2 / 6	0.026	0.009	1,3
Barium	1.27E-01	3.90E-03	1.26E-01	9.17E-03	4.20E-02	7 / 7	32.31	10.78	3
Calcium	5.65E+01	1.16E+02	1.85E+00	1.72E-01	7.59E-01	6 / 6	0.016	0.007	1,2,3
Chromium	1.11E-02	1.10E-02	1.15E-02	1.15E-02	4.21E-03	1 / 7	1.05	0.38	4
Copper	2.55E-02	6.54E-03	7.29E-03	7.29E-03	3.18E-03	1 / 7	1.11	0.49	3
Iron	7.04E+00	1.00E+00	8.29E+00	8.02E-02	1.61E+00	7 / 7	8.29	1.61	4
Lead	8.00E-03	1.32E-03	3.57E-03	3.57E-03	1.23E-03	1 / 5	2.70	0.93	3
Magnesium	2.13E+01	8.20E+01	1.79E+00	1.43E-01	6.58E-01	6 / 6	0.022	0.008	1,2,3
Manganese	5.81E-01	8.00E-02	3.60E-01	6.83E-03	1.07E-01	7 / 7	4.50	1.33	3
Potassium	7.20E+00	5.30E+01	1.19E+01	3.11E+00	5.13E+00	4 / 5	0.225	0.097	1,2,5
Sodium	1.48E+01	6.80E+02	1.75E+00	7.16E-01	1.06E+00	5 / 5	0.0026	0.0016	1,2,3
Vanadium	1.70E-02	1.90E-02	8.10E-03	8.10E-03	3.30E-03	1 / 7	0.43	0.17	1,3
Zinc	2.20E-01	5.89E-02	3.80E-02	3.80E-02	1.70E-02	1 / 7	0.65	0.29	1,3
Volatile Organic Compounds									
Chloroform	NA	2.89E-01	2.20E-04	2.20E-04	8.29E-05	1 / 7	0.00076	0.00029	1

[a] Background threshold value is two times (2x) the arithmetic mean of background metals (SAIC, 1998).

[b] Ecological Screening Values (ESV) are presented in *Human Health and Ecological Screening Values and PAH Background Summary Report* (IT, 2000).

[c] Rationale for exclusion as a COPEC:

1 - Maximum detected concentration is less than ESV.
2 - Essential macro-nutrient, only toxic at extremely high concentrations (i.e. 10-times naturally-occurring background concentrations).
3 - Maximum detected concentration is less than the background threshold value (BTV).
4 - Slippage Test and Wilcoxon Rank Sum Test indicate the concentration of this constituent is statistically similar to background concentrations.
5 - Geochemical evaluation of the data indicate that this constituent is naturally occurring.

NA - Not available.
ND - Not determined.