

Draft
Site-Specific Unexploded Ordnance Safety Plan Attachment
Training Area T-6 (Naylor Field), Parcel 183(6)
Fort McClellan, Calhoun County, Alabama

Prepared for:

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**Site-Specific Unexploded Ordnance Safety Plan Attachment
At Training Area T-6 (Naylor Field), Parcel 183(6)**

I have read and approve this site-specific unexploded ordnance (UXO) safety plan attachment for Training Area T-6 (Naylor Field), Parcel 183(6) at Fort McClellan, Alabama, with respect to project hazards, regulatory requirements, and IT Corporation UXO procedures.



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26 Sep 02

Date



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Date

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List of Acronyms

See Attachment 1, List of Abbreviations and Acronyms, of the Site-Specific Field Sampling Plan Attachment contained in this binder.

1.0 Introduction

This document defines anomaly avoidance procedures for activities to be performed by IT Corporation (IT) unexploded ordnance (UXO) personnel in conjunction with the site investigation at Training Area T-6 (Naylor Field), Parcel 183(6), at Fort McClellan (FTMC), Calhoun County, Alabama. This document is not a stand-alone document; it must be used in conjunction with the *Fort McClellan Unexploded Ordnance Supplementary Procedures* (IT, 2001), attached as Attachment 1.

IT UXO personnel will perform visual surveys, assisted by hand-held magnetometers and metal detectors, to support the collection of surface soil, subsurface soil, groundwater, surface water, sediment samples and/or other types of samples for chemical analysis at the Training Area T-6 (Naylor Field), Parcel 183(6). The purpose is to avoid any ordnance and explosives (OE) during hazardous, toxic, and radioactive waste (HTRW) sampling activities. Intrusive anomaly investigation is not authorized for this site work.

Training Area T-6 (Naylor Field), Parcel 183(6), is a heavily wooded area located at the base of the eastern slope of Howitzer Hill, about 300 feet southwest of the intersection of Derby Street and Town Center Drive, and west of South Branch of Cane Creek. Training Area T-6 was used from an unknown date prior to 1954 until 1973. Historically, it was called the Howitzer Hill Decontamination Area or the Former Agent Decontamination Training Area. The site encompasses about 10 acres. The area was fenced and posted; however, the site is accessible due to breaks in the fence because of age and lack of maintenance. The area contained eight training sites that consisted of concrete pads on which equipment was parked and a network of drainage ditches that may have drained to a shallow pond. Only four concrete pads were located during a February 1999 site visit by Parsons Engineering Science, Inc. (Parsons). Numerous drainage ditches were also located in the area surrounding the pads and were believed to have been used to drain liquids from the pads to a shallow open pond. The pond area was not visible during Parsons' site visit. There was no evidence of burial sites at the time of Parsons' site visit. A site visit by IT in August 2000 also did not reveal any evidence of burial sites.

The training activities conducted reportedly involved the decontamination of various chemical warfare material (CWM), including distilled mustard (HD), lewisite, and Sarin (GB), using the decontamination solutions supertropical bleach (STB), decontamination agent, noncorrosive (DANC), and Decontamination Solution Number 2 (DS2) (Roy F. Weston, Inc., 1990; Science

1 Applications International Corporation, 1993; Environmental Science and Engineering, Inc
2 1998). It has been reported that not more than 40 milliliters of HD was typically used during
3 each exercise. However, personnel interviewed during the environmental baseline survey site
4 visit stated that training aids were intentionally contaminated with up to 2 gallons of HD during
5 each exercise. The training aids consisted of surplus vehicles that had been taken out of service
6 and dedicated to these decontamination training exercises. After being intentionally
7 contaminated with chemical warfare agent, the training aid was decontaminated using volumes
8 of decontaminant (STB, DS2, or DANC) well in excess of the volume actually required to effect
9 complete decontamination. One report indicated that both agents mustard and HD were used and
10 that most training occurred in the northern half of the area. Reportedly, personnel
11 decontamination was also conducted here before trainees left the site; expended protective mask
12 canisters were collected and sent to the on-site landfill, presumably to Landfill No. 3.

13
14 Vehicles used as training aids are clearly visible at Training Area T-6 on aerial photographs
15 (December 9, 1954, and March 10, 1973). The training aids were located in the northern portion
16 of the site and aligned northeast-southwest in 1954. The training aids were located in the same
17 area in 1973, but were realigned to a northwest-southeast orientation.

18
19 CWM was not detected in surface soil samples collected and analyzed by the Army in 1973. The
20 area was authorized by the U.S. Army Toxic and Hazardous Material Agency and the U. S.
21 Army Chemical School for surface use only because subsurface soil sampling had not been
22 conducted. The site investigation completed in 1993 included six soil samples collected from
23 three locations at depths between 1 foot and 5 feet. Of these three locations, two were adjacent
24 to the decontamination pads in the central-western portion of the site and one was near the pad at
25 the southern end of the site near the gate. The samples were screened for HD using the Miniature
26 Continuous Air Monitoring System (MINICAMS®) and nothing was detected above background
27 readings. Laboratory analysis for agent degradation products was also negative.

28
29 An analysis of historical aerial photographs shows open areas and objects possibly used for
30 decontamination training. Nearly all of the activity occurred on the northern half of this site.
31 One cleared area at the end of a north/south trail near the center of the fenced area appears in the
32 1954 aerial photograph and is suspected of being a possible burial site (Parsons, 1999).
33 However, a site visit by IT in August 2000 did not reveal any burial sites. Activity at the site
34 diminished or ceased dramatically sometime after 1969, since the area had become largely re-
35 vegetated in the subsequent photograph taken in 1982 (Parsons, 1999). This timeframe coincides

1 with the reported dates of use for the area, with activities stopping in 1973 when the Chemical
2 School left FTMC.

3
4 The U.S. Army Corps of Engineers-Huntsville requires that work conducted at potential CWM
5 sites use UXO anomaly avoidance techniques. Surface sweeps and downhole surveys will be
6 conducted to identify anomalies for the purpose of UXO avoidance.

7 8 **2.0 UXO Team Composition** _____

9
10 UXO team and personnel requirements will be in accordance with EP 75-1-2 (USACE, 2000)
11 and the installation-wide sampling and analysis plan (IT, 2002) for FTMC. A UXO team will be
12 on site during all sampling or intrusive activities where OE is suspected.

13 14 15 **3.0 Responsibilities** _____

16
17 The UXO team leader is responsible for ensuring that personnel performing UXO tasks at FTMC
18 have the required qualifications. The UXO team leader supervises and coordinates UXO work
19 activities.

20
21 The UXO team member(s) will provide UXO avoidance, explosive ordnance recognition,
22 location, and safety functions for IT employees and any subcontractors during sampling
23 activities. Additionally, the UXO team will survey sample points and safe access and egress to
24 and from the site in support of HTRW operations.

25 26 27 **4.0 Authority** _____

28
29 UXO personnel are authorized to perform UXO avoidance activities only. UXO personnel are
30 not permitted to initiate OE investigative or disposal activities.

5.0 UXO Avoidance Procedures to Support HTRW Sampling Activities at FTMC

The scope of work for site investigation activities at Training Area T-6 (Naylor Field), Parcel 183(6), includes the following UXO tasks:

- Provide UXO avoidance support during the installation of 14 groundwater monitoring wells, the collection of 14 groundwater samples, 11 surface soil samples, 11 subsurface soil samples, 2 surface water samples, 2 sediment samples, and six depositional soil samples. Sample locations are defined in Section 4.6 of the site-specific field sampling plan contained in this binder.
- Provide downhole UXO support for all intrusive drilling to determine buried downhole hazards.
- Provide surveys for all intrusive field activities (e.g., digging, fence post driving, grading, or excavation).

Since these areas may contain OE contamination, the UXO team must conduct a surface access survey for UXO before any type of activities commence. This includes foot and vehicular traffic. UXO avoidance activities at Cane Creek Training Area, Parcel 510(7), will include:

a) Access Corridors and Sampling Sites

- (1) An access survey is defined as a UXO sweep performed to allow entry to and exit from sampling sites. In cases where hand auger sampling is required, the UXO team may consist of a UXO technician and sampling personnel. The UXO technician will sweep ahead of the non-UXO technician team member and mark a clear route. Access surveys will begin in a known clear area and proceed by the most direct route to the sampling site. The boundaries of the access route, whether for vehicle or personnel traffic, and the area of the sampling site, will be marked with white tape or white pin flags.
- (2) If an OE item is found during the survey, the location will be conspicuously marked with a red pin flag and avoided by altering the route. Subsurface anomalies will be marked with a yellow flag and avoided by altering the route. Additionally, UXO personnel will complete the IT FTMC “Unexploded Ordnance Report Form.”

- 1 (3) The boundaries of the access route and sampling site will be recorded in
2 the IT FTMC "UXO Sketch Log" by the UXO technician. Additionally,
3 anomaly locations will be recorded on this form.
4
- 5 (4) Instrumentation used at this site will include the Schonstedt GA 72, the
6 CST Corporation Magna-Trak 102, or the Whites Spectrum XLT Metal
7 Detector. Additionally, the Schonstedt MG-220 or MG-230 will be set up
8 for downhole monitoring. All equipment will be operated as specified in
9 the appropriate operator's manual. All equipment will be function tested
10 prior to use following the procedure in paragraph 3.2, *FTMC UXO*
11 *Supplementary Procedures* (IT, 2001) and the operator's instructions. The
12 Whites Metal Detector will be used in conjunction with hand-held
13 magnetometers in areas of high concentrations of rocks with a magnetic
14 signature to assist in eliminating anomalies created by "hot rocks."
15
- 16 (5) The access route will be twice as wide as the widest vehicle that will use
17 the route. Footpath lanes will be a minimum of three feet wide.
18
- 19 (6) If surface OE or subsurface anomalies are encountered that cannot be
20 avoided, the access route must be diverted to avoid contact. No personnel
21 will be allowed outside of the surveyed areas without a UXO escort. No
22 unescorted access is permitted inside the corridor area until a survey has
23 been completed and boundaries established.
24
- 25 (7) At the actual investigation site, the UXO team must also complete a
26 survey of an area sufficient to support mechanical excavation equipment
27 maneuverability, parking of support vehicles, and establishment of
28 decontamination stations. At a minimum, the surveyed area should have a
29 dimension in all directions equal to twice the length of the largest vehicle
30 or piece of equipment to be brought on site. White pin flags or tape will
31 be used to mark the boundaries of the surveyed site.
32
- 33 (8) Surface soil samples are normally collected at depths of 0 to 12 inches
34 below ground surface. The UXO team will survey the area of the soil
35 sampling site for any indication of OE. Sampling is not permitted at any
36 location where an anomaly has been detected.
37
- 38 (9) Tracked or other vehicles whose movement would disturb the soil are
39 authorized for use only in areas that have been surveyed and in which no
40 anomalies have been detected.
41
- 42 (10) If grading or soil movement is required to support access corridor
43 development or a sampling location, UXO personnel will perform a
44 survey. After an area has been surveyed and no anomalies have been
45 detected, soil can be removed at a rate of no more than one foot per cut. If

1 additional grading is required, another survey will be performed after each
2 one foot of soil has been removed.

3
4 (11) Erosion and weathering will typically cause some OE items to leach to the
5 surface or otherwise be uncovered. In cases where access corridors or
6 sampling sites have not been surveyed or traversed for a period of time,
7 additional surveys may be required. The decision regarding the
8 performance of follow-on surveys will be made by the site superintendent
9 with input provided by the FTMC UXO safety officer and FTMC UXO
10 team leader. The decision will be based on such factors as: the amount of
11 time since the last survey was performed, the weather during this period,
12 the terrain in the area of concern, the former use of the area, and the type
13 of quantity and OE found during initial surveys.

14
15 (12) Incremental geophysical surveys at drill hole locations will be initially
16 accomplished using a hand auger to install a pilot hole. An access survey
17 of the immediate vicinity of the pilot hole location will precede the
18 installation of the pilot hole. The UXO team will use a manual or
19 mechanical portable auger to install the pilot hole. The augered hole will
20 be inspected for anomalies with a geophysical instrument (configured for
21 downhole utilization) in two-foot increments as the hole is advanced
22 below ground surface. Hand augering of a hole will not proceed if an
23 anomaly is detected that cannot be positively identified as inert material.
24 If a suspect OE item is encountered, the sampling personnel must select a
25 new drill hole location. The pilot hole will also be inspected with the
26 geophysical instrument upon reaching the final depth of the hand augered
27 hole, providing a total clearance depth equal to pilot hole depth plus two
28 feet. If the proposed site is still free of magnetic anomalies, the drilling
29 equipment may be brought on site and utilized. The UXO team will
30 continue to inspect the drill hole for anomalies at two-foot increments as
31 the drilling is advanced from the clearance depth of the pilot hole until a
32 depth of 12 feet is reached.

33
34 b) Vegetation Removal

35
36 In cases where removal of large trees or other vegetation is required to support
37 access or sampling operations, the procedures in paragraph 4.2, *FTMC UXO*
38 *Supplementary Procedures* (IT, 2001) will be followed.

39
40 c) Magnetometer/Metal Detector Checkout and Field Procedures

41
42 The procedures in paragraph 3.0, *FTMC UXO Supplementary Procedures* (IT,
43 2001) will be followed. Since previous UXO usage of Training Area T-6,
44 Parcel 183(6), is unknown, the function test will utilize the function test
45 ordnance that most closely approximates the 75 mm projectile. The UXO team

1 leader may designate another function test item if other types of ordnance are
2 discovered.

3
4 d) UXO Logbooks and Documentation

5
6 All UXO personnel identified in paragraph 5.0, *FTMC UXO Supplementary*
7 *Procedures* (IT, 2001) will maintain a logbook in accordance with that
8 procedure.
9

10
11 **6.0 Safety**

12
13 In addition to the requirements of the site-specific safety and health plan prepared for this site,
14 the UXO personnel will ensure the following:

- 15
- 16 a) During the access and subsurface surveys conducted with a geophysical
17 instrument, the UXO team members will not wear safety shoes or other
18 footwear that would cause the instrument to present a false response.
19
 - 20 b) The UXO team will not be required to wear protective helmets unless an
21 overhead hazard is present.
22
 - 23 c) The FTMC UXO safety officer will monitor UXO activities to ensure
24 compliance with applicable safety requirements.
25
 - 26 d) The FTMC UXO safety officer will certify that all FTMC UXO workers are
27 capable of performing UXO activities at FTMC based on observation of work
28 performance.
29
 - 30 e) The FTMC UXO safety officer is responsible for all site-specific UXO training.
31
 - 32 f) The UXO technician on site will advise project personnel regarding all
33 evacuation and/or exclusion zones as appropriate. The UXO technician will
34 monitor all sampling site activities to ensure that only the minimum number of
35 personnel are present on site.
36

37
38 **7.0 Quality**

39
40 The IT FTMC UXO quality control officer will follow quality control instructions and
41 procedures listed in Section 9.0 of the installation-wide OE management plan contained in

1 Volume IV of the installation-wide sampling and analysis plan (IT, 2002) appropriate to this task
2 and the FTMC *UXO Supplementary Procedures*. The IT FTMC UXO quality control officer will
3 also utilize the “UXO Avoidance Quality Control Report” to document his activities. Copies of
4 this form will be provided to the IT quality assurance representative upon request.
5
6

7 **8.0 References**

8
9 Environmental Science and Engineering, Inc., 1998, *Final Environmental Baseline Survey,*
10 *Fort McClellan, Alabama*, prepared for U.S. Army Environmental Center, Aberdeen Proving
11 Ground, Maryland, January.
12

13 IT Corporation (IT), 2002, *Draft Revision 3, Installation-Wide Sampling and Analysis Plan,*
14 *Fort McClellan, Calhoun County, Alabama*, February.
15

16 IT Corporation (IT), 2001, *Fort McClellan Unexploded Ordnance Supplementary Procedures,*
17 June.
18

19 Parsons Engineering Science, Inc. (Parsons), 2002, *Final Chemical Warfare Materiel (CWM)*
20 *Engineering Evaluation/Cost Analysis (EE/CA), Fort McClellan, Alabama*, June.
21

22 Science Application International Corporation (SAIC), 1993, *Site Investigation Report*, prepared
23 for the U.S. Army Environmental Center, Aberdeen Proving Grounds, Maryland, August.
24

25 U. S. Army Corps of Engineers (USACE), 2000, *Engineering Publication, EP 75-1-2,*
26 *Unexploded Ordnance (UXO) Support During Hazardous, Toxic, and Radiological (HTRW)*
27 *and Construction Activities*, 20 November.
28
29

ATTACHMENT 1

1
2
3
4

**FORT MCCLELLAN UNEXPLODED ORDNANCE SUPPLEMENTARY
PROCEDURES**



Procedure No.	OE001
Revision No.	0
Date of Revision	6/6/01
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FTMC UXO SUPPLEMENTARY PROCEDURES

Subject: Ordnance and Explosives

1.0 INTRODUCTION

IT Corporation (IT) has been retained by the U.S. Army Corps of Engineers-Mobile District, under Contract Number DACA21-96-D-0018, to provide environmental services related to Base realignment and closure (BRAC) of Fort McClellan, Alabama. The Installation-Wide Ordnance and Explosives (OE) Management Plan for Fort McClellan (FTMC) was prepared by IT Corporation and submitted as a final document in March 2000. The Installation-Wide OE Management Plan was prepared to provide general guidance for conducting unexploded ordnance (UXO) work associated with hazardous, toxic, and radiological waste (HTRW) investigations and remedial activities currently in progress at FTMC. IT Corporation prepares site-specific field sampling, health and safety, and UXO safety plans for sites where fieldwork will occur that may potentially contain OE. A UXO Safety Plan is not prepared for sites that are not reported to be in areas containing OE.

1.1 Purpose

This document is intended to provide procedures to the field staff that outline UXO operations and clarify activities currently permitted under "anomaly avoidance." The document is not intended to replace any of the project documents currently approved; rather, it is intended to complement those documents with additional information that allows successful completion of the job.

2.0 FTMC EMPLOYEE ORIENTATION/TRAINING AND CERTIFICATION

The IT FTMC orientation program is designed to:

- Indoctrinate new employees to FTMC-unique procedures
- Verify compliance with regulatory certification requirements
- Provide continuing instruction and updating in UXO fundamentals to sustain readiness to safely perform UXO tasks

These standard policies and procedures are applicable to all members of The IT Group, Inc. except where superceded or modified by the member Company.



2.1 Responsibilities

The IT OE Service Center Operations Manager will oversee the training programs and maintain a master record of UXO employee training and certification status.

The UXO person designated as the senior IT UXO individual at FTMC will schedule the orientation listed below.

The FTMC UXO Safety Officer will:

- Conduct all UXO-specific orientation and training at FTMC
- Certify that each new UXO employee is capable of performing UXO work activities at FTMC
- Maintain FTMC training files and records on each UXO technician on site reflecting his or her current training status.

2.2 UXO Employee Orientation

Every UXO employee assigned to FTMC will receive a site-specific UXO orientation in addition to training required by the Occupational Health and Safety Administration (OSHA). This orientation will include, as a minimum, the following topics:

- Local emergency response drills and procedures
- Personal protective equipment (PPE) and personnel decontamination procedures
- Ordnance recognition/UXO expected to be encountered at FTMC
- Equipment safety
- FTMC site orientation
- Chemical warfare material (CWM) awareness and procedures
- Communications procedures
- FTMC Logbook/data recording procedures
- IT administrative policies and procedures
- Magnetometer checkout procedures.

Upon completion of the UXO employee orientation, the FTMC UXO Safety Officer will monitor the performance of the new hire for at least three workdays while conducting typical UXO activities. The FTMC UXO Safety Officer will then certify that the individual is capable of performing UXO activities at FTMC

These standard policies and procedures are applicable to all members of The IT Group, Inc. except where superseded or modified by the member Company.

based upon satisfactory performance of the three-day period. A copy of this certification will be maintained in the individual's site FTMC training file (see example at Attachment 1).

2.3 UXO Sustainment Training

All UXO technicians have had the OSHA 40-hour hazardous waste operations and emergency response (HAZWOPER) course in order to be initially certified at FTMC. They are also required to maintain the certification with an 8-hour OSHA refresher course on an annual basis. Additionally, all IT FTMC UXO personnel will have 8 hours of site-specific annual UXO sustainment training. This training can be performed incrementally (2 hours every quarter) at the discretion of the site superintendent in coordination with the FTMC IT UXO Safety Officer. Topics will include, but are not limited to, the following subjects:

- Site-specific environmental hazards
- Site-specific UXO hazards, ordnance fuzing, functioning and precautions
- Topics which the IT UXO Team Leader or IT Safety UXO Officer determines necessary to support FTMC UXO activities

Sustainment training will be conducted for a period of no less than 8 hours. Daily safety briefings, tailgate safety meetings, and other required site-specific training are not a substitute for this training. The purpose of this training is to provide each UXO employee with site-specific UXO training over and above OSHA requirements. The site-specific UXO training will be recorded in the project file and the UXO employee's personnel file.

3.0 FTMC MAGNETOMETER/METAL DETECTOR FUNCTION TEST AND FIELD PROCEDURES

This section provides FTMC magnetometer/metal detector function tests and operating procedures to be employed at all work sites that have been identified as requiring avoidance support.

3.1 Geophysical Test Plot

The purpose of a test plot is to provide a consistent environment where the equipment can be evaluated. The location of the geophysical test plot will be inside the IT compound. It will be established as follows

- The test plot will consist of an area approximately 20 x 20 feet and clear of vegetation and magnetic anomalies, located in the IT compound next to the southeast end of the office trailers.
- Five metal test objects will be buried at depths varying from 6 inches to 24 inches. The objects will approximate the weight, diameter, and length of an MK 2 grenade, a 60mm mortar, a 2.36-inch rocket warhead, a 75mm projectile, and a 37mm projectile. Additionally, three non-ferrous test objects will be buried at a depth of 2 inches to 8 inches. A 6-inch length of 1/2-inch reinforcing rod will be placed on the surface for use as a surface check source. Items with greater mass will be buried at greater depths. Each burial location will be marked with a wooden stake located about 6 inches to the north of the object. Each stake will be assigned a reference number and will be tagged or marked to denote the depth, type of item and orientation of the item. The site will utilize native soils; no fill material will be brought in from another area. Sand will be used to cover the area to mitigate the effects of wet weather.
- For downhole magnetometer testing, a length of 2-inch PVC pipe will be buried to a depth of 36 inches. The pipe should be of sufficient length to allow at least another 24 inches to extend above the surface of the ground. A metal object will be buried at a depth of 24 inches and 24 inches from the side of the pipe. The location of the item, similar in size and mass to a 75mm projectile, will be marked with a wooden stake tagged to denote the depth, type of item, orientation, and reference number assigned.

3.2 Magnetometer/Metal Detector Check-Out Procedures

- Prior to field use, all magnetometers and metal detectors will be set up following the guidelines in the manufacturer's operating manual for the specific instrument used. Instrumentation used at this site will include the Schonstedt GA 72, the CST Corporation Magna-Trak 102, or White's Spectrum XLT Metal Detector. Additionally, the Schonstedt MG-220 or MG-230 will be set up for downhole monitoring. All equipment will be operated in a manner consistent with instructions contained in the appropriate operator's manual. All equipment will be function-tested prior to use. The White's Metal Detector will be used in conjunction with hand-held magnetometers in areas of high concentrations of rocks with a magnetic signature, to assist in eliminating anomalies created by "hot

rocks.” The operating manual for each of the instruments used at FTMC will be available for use with the equipment.

- Once the instrument has been determined to be working according to the manufacturer’s operating manual, the operator will perform a function test on the FTMC geophysical test plot using the detection methods described in the manual. A function test will consist of using the instrument over a minimum of three test sources. The same sources will be used during each function test to ensure consistency. The instrument detection indicator, as described in the operator’s manual, will be noted in the instrument logbook. For site checks, a 6-inch length of 1/2-inch steel reinforcing rod will be available to each operator at the work site.
- Instruments that fail to reproduce a detection indication consistent with previous tests will be checked to ensure that the power supply or batteries are sufficient. If the power supply is determined to be sufficient and the operator cannot find a fault in accordance with the operator’s manual, the instrument will be tagged and removed from service.
- Function tests will be performed each morning before the equipment is put into service.
- If an instrument is determined to be working improperly, the FTMC UXO Team Leader and the site superintendent will be immediately notified. Any activities performed using that instrument since its last positive test procedure will be considered invalid and will require reevaluation.
- Upon completion of the function test, the “Magnetometer/Metal Detector Functions Test Data Sheet” (Attachment 2) and the equipment logbook will be filled out.
- After an instrument has been function-tested at the beginning of each day, the instrument will be checked at least once during every hour of use or each time the instrument is turned on after having been turned off. This check will consist of dropping the 6-inch length of 1/2-inch reinforcing rod in a clear area and passing the detector over the rod in a manner consistent with the operator’s instructions. The instrument indication will be compared to the indication produced during the morning function test.

Instruments that fail to produce a consistent indication will be checked and removed from service as required.

3.3 **Equipment Documentation**

Each piece of equipment will be assigned a logbook noting the make, model, manufacturer, and serial number of the equipment. The logbook and manufacturer's operating manual will be present when the equipment is tested. The following information will be recorded:

- Date and time
- The test plot object used (assigned stake number)
- The reading or indication at each test site
- Whether or not the reading or indication was satisfactory
- The name of the individual performing the test.

The IT FTMC Quality Control (QC) Officer will observe the daily testing of all equipment and will record the results of each test in his field logbook.

3.4 **Magnetometer/Metal Detector Field Procedures**

All intrusive field activities in potential OE areas (e.g., digging, fence post driving, grading, well installation or excavation) will be preceded by a UXO sweep. Each hole made in areas where OE may potentially be found will have a check immediately over the spot of the intrusion. Magnetometer operations at FTMC will assume a detection depth of one foot when surveying an area for excavation.

All magnetometers and metal detectors will be operated in accordance with the manufacturers specifications and procedures.

When surveying a potential area for a sampling well, an area of sufficient size will be surveyed to allow for installation of required pads and bollards. After the well is installed, the location of bollards will be adjusted as required if an anomaly is detected during the bollard installation process.

The White's Metal Detector will be used to augment the magnetometers on sites where "hot rocks" are suspected. The purpose of using the metal detector in addition to the magnetometers is to eliminate the probability of "hot rocks."



4.0 FTMC ACCESS CLEARANCES, VEGETATION REMOVAL, AND ROAD MAINTENANCE

This section is designed to provide specific procedures regarding activities associated with the building of access corridors, vegetation removal, and road maintenance in support of FTMC operations.

4.1 Access Corridors

The purpose of access corridors is to enable IT personnel access to well and/or other types of sampling sites within FTMC. Access corridors will be created by marking the route, both length and width, in which a UXO survey has been performed. The marking method will be defined in each site-specific UXO safety plan. No unescorted access is permitted until a corridor has been established. If an anomaly is detected during the survey or during a subsequent excavation, it must be avoided, since investigation is not authorized. The route will be altered to avoid the anomaly for FTMC activities. A magnetometer is considered to reliably detect anomalies to a depth of one foot.

The size of each area to be surveyed is dependent on the type and quantity of equipment expected to be used on that site. The UXO survey crew will follow the procedures outlined in the site-specific UXO safety plan to determine the dimensions of the area to be surveyed. Normally, the width of the access route will be at least twice as wide as the widest vehicle that will use the route; footpaths will be a minimum of 3 feet wide.

Tracked or other vehicles, that disturb the soil are authorized for use only in areas that have been surveyed and no anomalies have been detected.

Erosion and weathering will typically cause some UXO items to leach to the surface or otherwise be uncovered. In cases where access corridors or sampling sites have not been surveyed or traversed for a period of time, additional UXO surveys may be required. The decision regarding the performance of additional surveys will be made by the FTMC UXO team leader and the IT FTMC UXO Safety Officer. The site superintendent will be notified of this decision. This decision will be based on, but not limited to, such factors as: the amount of time since the last survey was performed; the weather during this period; the terrain in the area of concern; and the type and quantity of UXO found during initial surveys.

4.2 Vegetation Removal

In cases where removal of large trees or other types of vegetation is required, the following procedures will be followed:

- The UXO technician will survey around the base of the tree or vegetation, and, if no anomaly is detected, direct the bulldozer or other equipment to proceed. If an anomaly is detected, the location will be recorded and marked and another route will be selected. The size of the area to be surveyed will depend on the size of the suspected root system of the tree to be removed.
- Once the tree has been pushed over, the UXO technician will survey around the root ball and the area in and around the hole. If an anomaly is detected, the anomaly will be recorded and marked and an alternate route will be selected. If no anomaly is detected, the UXO technician will direct the equipment operator to proceed with the excavation.

4.3 Road Maintenance

Remote range roads and trails frequently require a certain amount of repair to remain passable. This section describes authorized actions regarding the maintenance of dirt or gravel range roads by IT UXO personnel.

- Bulldozers or grader-type equipment is authorized to repair roads and trails as long as a UXO survey has been performed and no anomalies have been detected.
- The UXO technician will observe the blade of the equipment as the earth is moved. If a potential UXO is uncovered, the UXO technician will signal the equipment operator to immediately stop the equipment. The UXO technician will then attempt to visually identify the object. If the object cannot be positively identified as a non-hazardous item, the equipment will be moved, the location of the object marked and recorded on the IT FTMC Unexploded Ordnance Report Form (Attachment 3), and the route changed to avoid the object. If no suspicious objects are detected, the equipment will continue to move earth at a rate of no more than one foot of depth at a time. If, more grading is required after the first pass is complete the UXO technician will perform another survey. If no anomalies are detected, the equipment can repeat the grading process. If an anomaly is detected, the operation will be halted and the route changed.



- After an area has been surveyed and no anomalies have been detected, soil can be removed at a rate of no more than one foot per lift. If additional grading is required, a survey will be performed after each one-foot increment the soil has been removed.
- Earth may not, at any time, be moved at a rate of more than one foot in each lift.

5.0 FTMC UXO LOG BOOKS

All UXO team leaders or UXO technicians supporting HTRW operations will maintain a logbook. The purpose of the logbook is to record UXO actions and activities taken at each work site.

5.1 Responsibilities

UXO personnel will maintain an individual daily logbook of work activities.

The logbooks will be routinely inspected weekly by the UXO QC Officer and will be made available to the FTMC site superintendent upon request. Copies will be made daily and filed in the IT Field Project office.

Logbooks will contain bound and numbered pages. Entries will be on successive pages as work is performed. The individual using the logbook will sign the page after the last entry for that page has been made. Logbooks are part of the project legal file and will be filed with the project files upon completion of each investigation.



5.2 Data Requirements

As a minimum, individual logbooks will contain the following information:

- Date, time and location of UXO activities
- Personnel involved in the activities
- UXO activities performed, including UXO/anomalies found
- A description of areas swept
- A record of the magnetometer or other equipment used, including instrument serial number
- Weather conditions.

The IT FTMC QC Officer will utilize the IT FTMC “UXO Avoidance Quality Control Report” (Attachment 4) to document checks of field activities.

Additionally, UXO personnel will complete IT FTMC Form “UXO Sketch Log” (Attachment 5) and IT FTMC Unexploded Ordnance Report Form. The “UXO Sketch Log” will contain a description of activities, including the dimensions of the area surveyed. A description of the length and width will be recorded, as well as the manner in which the survey was performed. These forms will be completed as required and presented to the site superintendent.

ATTACHMENT 1

FTMC Employee Certification (Example)

I certify that (name of individual) has fulfilled all UXO orientation requirements and has been observed by me for a period of 3 work days and is therefore eligible to perform UXO activities at FTMC.

Talmadge Bohannon
FTMC UXO Safety Officer



ATTACHMENT 3

Unexploded Ordnance Report Form

Report Tracking Number:													
Discovery and Reporting Time													
<table border="1" style="margin: auto;"> <tr><th colspan="2">Time of Discovery</th></tr> <tr><td style="width: 50%;">Date</td><td style="width: 50%;">Time</td></tr> <tr><td> </td><td> </td></tr> </table>	Time of Discovery		Date	Time			<table border="1" style="margin: auto;"> <tr><th colspan="2">Time Reported to Base Transition Force</th></tr> <tr><td style="width: 50%;">Date</td><td style="width: 50%;">Time</td></tr> <tr><td> </td><td> </td></tr> </table>	Time Reported to Base Transition Force		Date	Time		
Time of Discovery													
Date	Time												
Time Reported to Base Transition Force													
Date	Time												
Employee Name: _____	Reported to FTMC Transitional Force Personnel Name: _____												
Location of Ordnance													
Location, Description, and Parcel Number:													
Coordinates of Ordnance:	<table border="1" style="margin: auto;"> <tr><th colspan="2">State Plane Coordinates</th></tr> <tr><td style="width: 50%;">Northing</td><td style="width: 50%;">Easting</td></tr> <tr><td> </td><td> </td></tr> </table>	State Plane Coordinates		Northing	Easting								
State Plane Coordinates													
Northing	Easting												
<table border="1" style="margin: auto;"> <tr><th colspan="4">Picture Taken of Ordnance</th></tr> <tr><td style="width: 25%;">Yes</td><td style="width: 25%;">No</td><td style="width: 25%;">Date</td><td style="width: 25%;">Time</td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table>		Picture Taken of Ordnance				Yes	No	Date	Time				
Picture Taken of Ordnance													
Yes	No	Date	Time										
Written Description and/or Sketch of Ordnance:													
Corrective Action Taken by Fort McClellan Transition Force													
Date													

ATTACHMENT 4

These standard policies and procedures are applicable to all members of The IT Group, Inc. except where superseded or modified by the member Company.



UXO Quality Control Report

Project Location: _____

Date: _____

Work Site Location: _____

Day: _____

1. Personnel Involved:

2. Description of Work Being Performed:

3. Equipment Utilized:

4. Comments:

Completed By

Printed Name & Title

Signature

Date

These standard policies and procedures are applicable to all members of The IT Group, Inc. except where superseded or modified by the member Company.



ATTACHMENT 5

UXO Sketch Location Log

District: _____ **Hole Number:** _____ **Date:** _____

Company Name: IT Corporation

Subcontractor: _____

Parcel Location: _____ **Well Location:** _____ **Date Started:** _____ **Date Completed:** _____

Type of UXO Work Being Performed:

Most Probable Munition:	_____
Down-Hole Depth Achieved for UXO Avoidance:	_____
Total Number of Surface UXO Marked:	_____
Total Number of Anomalies Marked:	_____

Location Sketch/Comments:	Not to Scale
Signature of UXO Technician:	Date:

These standard policies and procedures are applicable to all members of The IT Group, Inc. except where superceded or modified by the member Company.