DAIM-BD-H-MC 12 September 2006

MEMORANDUM FOR RECORD

SUBJECT: Draft Site Investigation Report, Impact Area South of Prisoner-of-War Training Facility, Former Rifle/Machine Gun Ranges, Parcels 100Q and 101Q, September 2003

1. Subject draft report will not be finalized by the U.S. Army. It is maintained in the Administrative Record and Information Repositories to provide information collected by the Army prior to implementation of the Environmental Services Cooperative Agreement (ESCA) between the Army and the Anniston-Calhoun County Fort McClellan Development Joint Powers Authority (JPA) executed on 15 September 2003, and as modified on 30 September 2005. The JPA will complete environmental services and achieve site closeout in accordance with the requirements of the ESCA.

2. Point of contact for this action is Lisa Holstein, Transition Force, Fort McClellan, AL, at 256-848-7455.

Shaw Environmental & Infrastructure, Inc.

312 Directors Drive
Knoxville, TN 37923-4799
865.690.3211
Fax 865.690.3626

Shaw The Shaw Group Inc.™

September 4, 2003

SHAW-MC-CK10-0373
Project No. 796887

Mr. Lee Coker
U.S. Army Corps of Engineers, Mobile District
Attn: EN-GE/Lee Coker
109 St. Joseph Street
Mobile, Alabama 36602

Contract: **Contract No. DACA21-96-D-0018/CK10**
Fort McClellan, Alabama

Subject: **Draft Site Investigation Report, Impact Area South of Prisoner-of-War Training Facility, Former Rifle/Machine Gun Ranges, Parcels 100Q and 101Q**

Dear Mr. Coker:

I am enclosing one copy of the subject document for your review. The results of this site investigation were most recently discussed by the BCT at the February 2003 project team meeting. Following your review, please provide either a letter of concurrence or written comments with suggested changes.

At your request, I have distributed copies of this document as indicated below. If you have questions, or need further information, please contact me at (770) 663-1429 or Steve Moran at (865) 694-7361.

Sincerely,

Jeanne A. Yacoub, P.E.
Project Manager

Attachments

Distribution: Lisa Holstein, FTMC (7 copies)
Philip Stroud, ADEM (2 copies)
Doyle Brittain, EPA Region 4 (3 copies)
Hugh Vick, Gannett Flemming (3 copies)
Miki Schneider, JPA (1 copy)

DRAFT – WORKING DOCUMENTS SUBJECT TO CHANGE.
NOT FOR RELEASE TO PUBLIC, NOT TO BE QUOTED OR REFERENCED
PROPERTY OF U.S. ARMY AND MUST BE RETURNED UPON REQUEST

This document is a draft of a proposed report for U.S. Army and was prepared by Shaw Environmental, Inc. as a basis for obtaining advance review by those having responsibilities concerning the subjects discussed in the draft. It has not been fully reviewed within the Fort McClellan BRAC Cleanup Team or other Army agencies and is, therefore, subject to revision.

Recipients of this draft must not show or release its contents under any circumstances for purposes other than official review and comment. At all times, it must be safeguarded to prevent publication or improper disclosure of the information contained herein. This draft and all copies thereof remain the property of, and must be returned on demand to, the U.S. Army Fort McClellan Transition Force, Fort McClellan, Alabama.

The Army is not responsible for nor liable for any decisions or actions the recipient, its employees or its agents make or take as a result of the use of this information.

Draft

Site Investigation Report

Impact Area South of Prisoner-of-War Training Facility
Former Rifle/Machine Gun Ranges
Parcels 100Q and 101Q

Fort McClellan
Calhoun County, Alabama

Prepared for:

U.S. Army Corps of Engineers, Mobile District
109 St. Joseph Street
Mobile, Alabama 36602

Prepared by:

Shaw Environmental, Inc.
312 Directors Drive
Knoxville, Tennessee 37923

Task Order CK10
Contract No. DACA21-96-D-0018
Shaw Project No. 796887

September 2003

Revision 0

Table of Contents

Page

Table of Contents *(Continued)*

Page

List of Appendices

List of Tables

List of Figures

Executive Summary

In accordance with Contract Number DACA21-96-D-0018, Task Order CK10, Shaw Environmental, Inc. completed a site investigation (SI) at the Impact Area South of the Prisoner-of-War Training Facility (IASPOW), Former Rifle/Machine Gun Ranges, Parcels 100Q and 101Q, at Fort McClellan in Calhoun County, Alabama. The SI was conducted to determine whether chemical constituents are present at the site at concentrations that pose an unacceptable risk to human health or the environment. The SI consisted of the collection and analysis of 22 surface soil samples, 20 subsurface soil samples, and 4 groundwater samples. In addition, two permanent monitoring wells were installed at the site to facilitate groundwater sample collection and to provide site-specific geological and hydrogeological characterization information.

Chemical analysis of samples collected at the IASPOW indicates that metals, explosives, volatile organic compounds (VOC), pesticides, and herbicides were detected in the various site media. To evaluate whether the detected constituents pose an unacceptable risk to human health or the environment, the analytical results were compared to site-specific screening levels (SSSL), ecological screening values (ESV), and background screening values for FTMC. Site metals data were further evaluated using statistical and geochemical methods to determine if the metals were site related. A preliminary risk assessment (PRA) and preliminary ecological risk assessment (PERA) were also performed to further characterize the potential threat to human health and the environment.

The PRA identified three metals (antimony, arsenic, and lead) as chemicals of potential concern (COPC) in soil. The metals are known to be constituents of bullets, and expended bullets and bullet fragments were observed on the surface over a substantial portion of the site. Groundwater COPCs were four organochlorine pesticides (aldrin, dieldrin, heptachlor epoxide, and beta-hexachlorocyclohexane), and one explosive compound (4-amino-2,6-dinitrotoluene). The PRA concluded that the IASPOW in its current state can be released for its intended industrial use, but not for residential (or unrestricted) use.

The PERA identified two metals (lead and copper) and one VOC (trichloroethene) as chemicals of potential ecological concern in surface soil. Exposures to subsurface soil and groundwater were considered unlikely for ecological receptors at this site. The PERA concluded that the metals have the potential to pose ecological risk. The trichloroethene is unlikely to pose ecological risk because of its isolated nature and relatively low detected concentration. The site

is not expected to provide viable ecological habitat in the projected industrial reuse scenario. Therefore, the potential future threat to ecological receptors is considered low.

Based on the results of the SI, past operations at the IASPOW have impacted the environment. The site is unsuitable for unrestricted reuse (i.e., residential). However, the site does not pose an unacceptable risk to human health or the environment in the projected (industrial) land reuse scenario. Therefore, Shaw Environmental, Inc. recommends restricting future site activities and land reuse to industrial use only at the IASPOW.

1.0 Introduction

The U.S. Army has selected Fort McClellan (FTMC) located in Calhoun County, Alabama, for closure by the Base Realignment and Closure (BRAC) Commission under Public Laws 100-526 and 101-510. The 1990 Base Closure Act, Public Law 101-510, established the process by which U.S. Department of Defense (DOD) installations would be closed or realigned. The BRAC Environmental Restoration Program requires investigation and cleanup of federal properties prior to transfer to the public domain. The U.S. Army is conducting environmental studies of the impact of suspected contaminants at parcels at FTMC under the management of the U.S. Army Corps of Engineers (USACE), Mobile District. The USACE contracted Shaw Environmental, Inc. (Shaw), formerly IT Corporation (IT), to perform the site investigation (SI) at the Impact Area South of Prisoner-of-War (POW) Training Facility (IASPOW), Former Rifle/Machine Gun Ranges, Parcels 100Q and 101Q, under Contract Number DACA21-96-D-0018, Task Order CK10.

This report presents specific information and results compiled from the SI, including field sampling and analysis and monitoring well installation activities conducted at the IASPOW.

1.1 Project Description

Parcels 100Q and 101Q were identified as areas to be investigated prior to property transfer. The parcels were classified as Category 1 Qualified parcels in the environmental baseline survey (EBS) (Environmental Science and Engineering, Inc. [ESE], 1998). Category 1 Qualified parcels are areas that have no evidence of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-related hazardous substances or petroleum product storage, release, or disposal but that do have other environmental or safety concerns. Parcels 100Q and 101Q were qualified because of their use as weapons ranges.

A site-specific field sampling plan (SFSP) and a site-specific safety and health plan (SSHP) were finalized in January 2002 (IT, 2002a). The SFSP and SSHP were prepared to provide technical guidance for sample collection and analysis at the Former Rifle/Machine Gun Ranges, Parcels 100Q and 101Q. The SFSP was used in conjunction with the SSHP as attachments to the installation-wide work plan (IT, 1998), and the installation-wide sampling and analysis plan (SAP) (IT, 2000a; IT, 2002b). The SAP includes the installation-wide safety and health plan and quality assurance plan.

The SI included fieldwork to collect 22 surface soil samples, 20 subsurface soil samples, and 4 groundwater samples. Data from the field investigation were used to determine whether potential site-specific chemicals are present at the IASPOW.

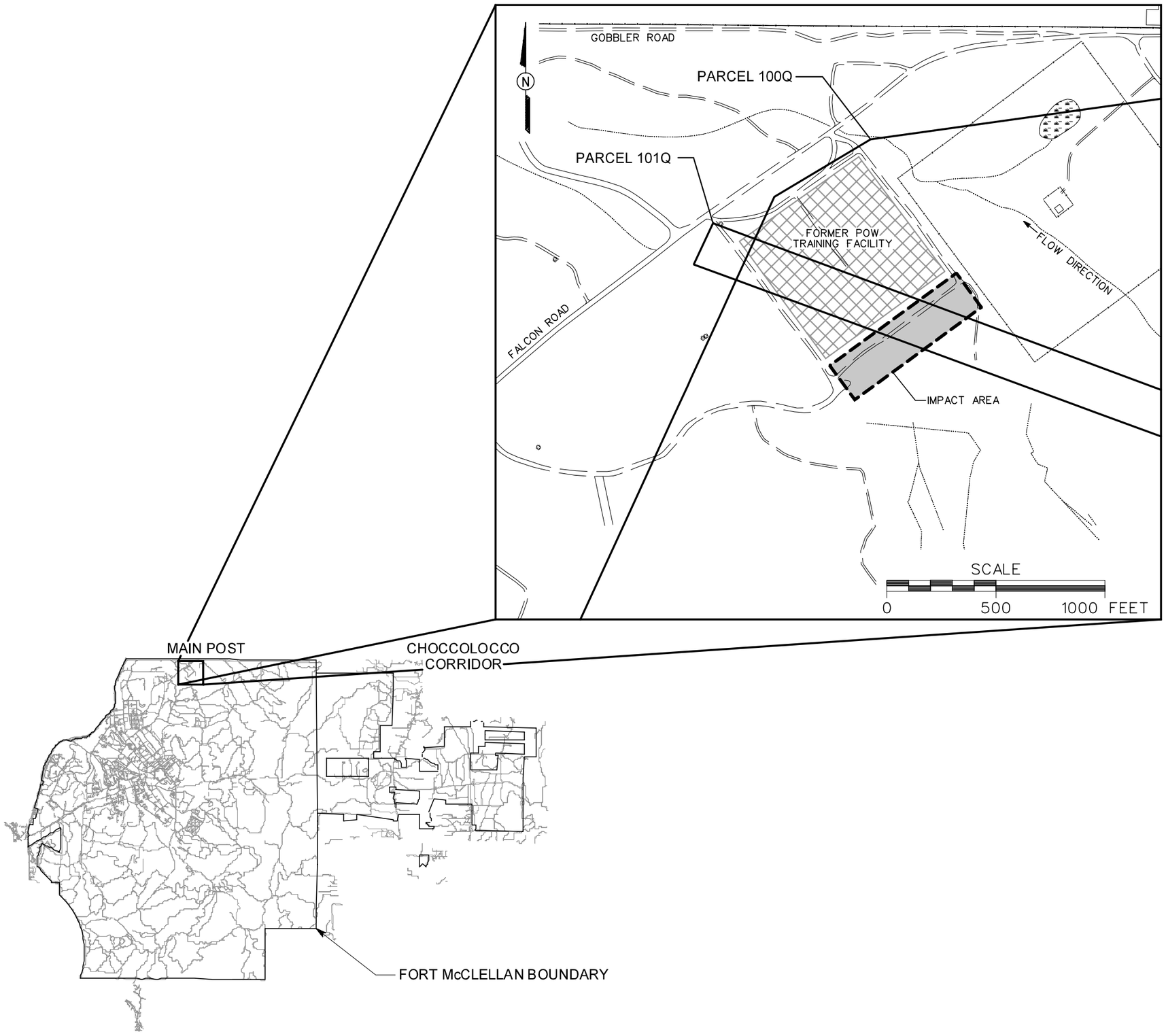
1.2 Purpose and Objectives

The SI program was designed to collect data from site media and provide a level of defensible data and information in sufficient detail to determine whether chemical constituents are present at IASPOW at concentrations that present an unacceptable risk to human health or the environment. The conclusions of the SI in Chapter 6.0 are based on the comparison of the analytical results to human health site-specific screening levels (SSSL), ecological screening values (ESV), and background screening values for FTMC. The SSSLs and ESVs were developed by Shaw as part of the human health and ecological risk evaluations associated with SIs being performed under the BRAC Environmental Restoration Program at FTMC. The SSSLs and ESVs are presented in the *Final Human Health and Ecological Screening Values and PAH Background Summary Report* (IT, 2000b). Background metals screening values are presented in the *Final Background Metals Survey Report, Fort McClellan, Alabama* (Science Applications International Corporation [SAIC], 1998). Site metals data were further evaluated using statistical and geochemical methods to determine if the metals were site related. A preliminary risk assessment (PRA) and a preliminary ecological risk assessment (PERA) were also performed to further characterize human health and ecological risks.

Based on the conclusions presented in this SI report, the BRAC Cleanup Team will decide either to propose "No Further Action" at the site or to conduct additional work at the site.

1.3 Site Description and History

The IASPOW is located in the north-central portion of the Main Post of FTMC, south of Falcon Road and Gobbler Road (Figure 1-1). The impact area was identified during a site walk conducted by Shaw personnel in October 2001. The area of investigation is an approximately 3.3-acre rectangular area with expended bullets and bullet fragments present on the surface, a possible target berm, and some disturbed areas identified from aerial photographs (Figure 1-2). According to the EBS, the range was identified by the Environmental Photographic Interpretation Center (EPIC) (U.S. Environmental Protection Agency [EPA], 1990). Presently, the area is mostly covered with trees and brush; however, grass is found along the northern portion of the site. The topography in the area of investigation gently slopes to the northwest. Site elevation ranges from approximately 775 to 800 feet above mean sea level.



LEGEND

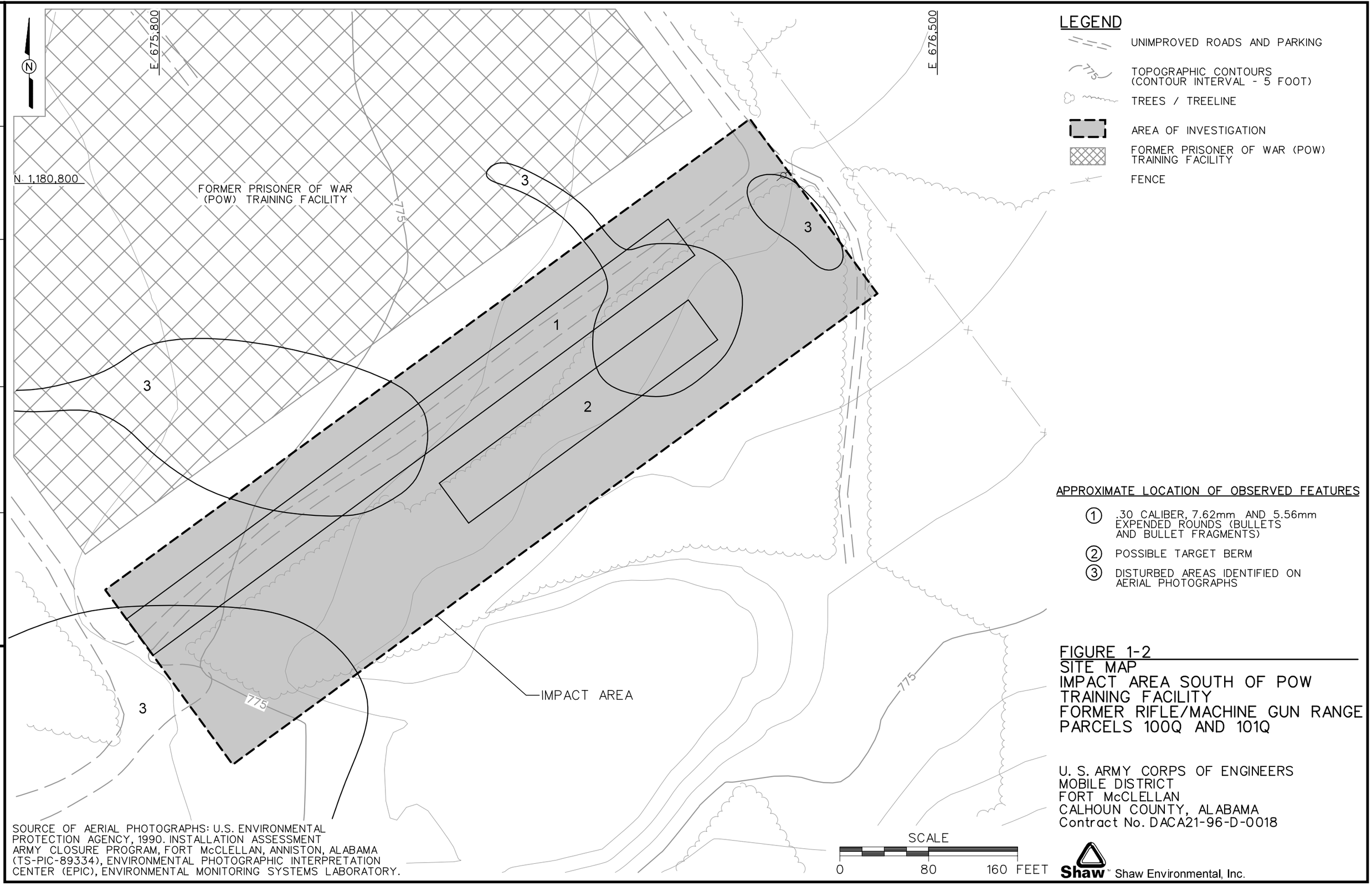
- UNIMPROVED ROADS AND PARKING
- PAVED ROADS AND PARKING
- BUILDING
- MARSH / WETLANDS
- AREA OF INVESTIGATION
- PARCEL BOUNDARY
- FORMER PRISONER OF WAR (POW) TRAINING FACILITY
- SURFACE DRAINAGE / CREEK
- FENCE
- TREES / TREELINE

FIGURE 1-1
SITE LOCATION MAP
IMPACT AREA SOUTH OF POW
TRAINING FACILITY
FORMER RIFLE/MACHINE GUN RANGE
PARCELS 100Q AND 101Q

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

Shaw™ Shaw Environmental, Inc.

DATE LAST REV.: 07/22/2003
DRAWN BY: dbomar
STARTING DATE: 01/08/03
DRAWN BY: D. BOMAR
PROJ. MGR.: J. YACOUB
ENGR. CHCK. BY: S. MORAN
DRAFT. CHCK. BY:
INITIATOR: G. SISCO
PROJ. NO.: 796887
DWG. NO.: ...\796887es.666
10:17:59 AM
c:\cadd\design\796887es.666



SOURCE OF AERIAL PHOTOGRAPHS: U.S. ENVIRONMENTAL PROTECTION AGENCY, 1990. INSTALLATION ASSESSMENT ARMY CLOSURE PROGRAM, FORT McCLELLAN, ANNISTON, ALABAMA (TS-PIC-89334), ENVIRONMENTAL PHOTOGRAPHIC INTERPRETATION CENTER (EPIC), ENVIRONMENTAL MONITORING SYSTEMS LABORATORY.

FIGURE 1-2
SITE MAP
IMPACT AREA SOUTH OF POW TRAINING FACILITY
FORMER RIFLE/MACHINE GUN RANGE
PARCELS 100Q AND 101Q

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

Shaw™ Shaw Environmental, Inc.

DWG. NO.: ...\796887es.667 | PROJ. NO.: 796887
INITIATOR: G. SISCO | PROJ. MGR.: J. YACOUB
DRAFT. CHCK. BY: | ENGR. CHCK. BY: S. MORAN
DATE LAST REV.: | DRAWN BY:
STARTING DATE: 01/08/03 | DRAWN BY: D. BOMAR
08/25/2003 08:47:46 AM
dbomar c:\cadd\design\796887es.667

The IASPOW is located within the range fans for the Former Rifle/Machine Gun Ranges, Parcels 100Q and 101Q. According to the EBS, Parcels 100Q and 101Q are two of seven former rifle/machine gun ranges that were identified on the northern Main Post. The dates of operation and types of specific ordnance fired at these ranges are unknown. According to historical maps, four of these ranges were in use in 1917 and three of the ranges appeared on maps from 1959 and 1966 (ESE, 1998). Based on the presence of .30-caliber, 5.56-millimeter (mm), and 7.62-mm bullets observed during the October 2001 site walk, it is assumed that small-arms weapons were used most recently at these ranges.

Impact areas for Parcels 100Q and 101Q were not identified in the EBS. However, based on the orientation of the range fans and firing lines presented in the EBS, the direction of fire for the Former Rifle/Machine Gun Ranges, Parcels 100Q and 101Q, was to the southeast toward the area of this investigation. This SI will address only the area identified as the IASPOW. The firing line areas for Parcels 100Q and 101Q, including the former POW training facility, were investigated and reported separately (IT, 2002c). Other areas within the range fans for Parcels 100Q and 101Q will be addressed separately.

Available aerial photographs were reviewed to reveal any land-use activity in the area of investigation, as summarized below.

1937. The 1937 photograph shows the area of investigation as densely wooded.

1940 and 1944. The 1940 and 1944 photographs show ground disturbance within and around the area of investigation. Many of the trees within the area of investigation have been removed.

1954 and 1961. Throughout this period, an increase in vegetation was noted within the area of investigation, suggesting decreased activity. However, significant activity was noted outside the area of investigation within Parcels 100Q and 101Q. A new road was identified on the 1961 photograph running from Falcon Road along the western boundary of the area of investigation.

1964. The 1964 aerial photograph (Figure 1-3) show a decrease in vegetation in the central portion of Parcel 100Q and most of the area of investigation. A new loop road was observed overlapping a section of the area of investigation. A cleared/disturbed area, possibly representing a target area, was also noted near the central portion of the area of investigation.

Figure 1-3

1964 Aerial Photograph

Impact Area South of Former POW Training Facility, Former Rifle/Machine Gun Ranges, Parcels 100Q and 101Q
Fort McClellan, Alabama

Legend

- Area of Investigation
- Fort McClellan Boundary

300 0 300 Feet

NAD83 State Plane Coordinates

N

Shaw™ Shaw Environmental, Inc.

U.S. Army Corps of Engineers Mobile District

Contract No. DACA21-96-D-0018

1969. The 1969 photograph shows a continued increase in range activity within the area of investigation and at Parcel 100Q.

1973. The 1973 photograph (Figure 1-4) shows a distinct circular area of disturbance, probably a target area, within the northeastern portion of the area of investigation. The photograph shows continued range activity along firing lines for Parcel 100Q.

1976. The 1976 photograph shows the two disturbed areas identified in the 1973 aerial photograph. However, an increase in ground cover was present across the area of investigation and Parcel 100Q, suggesting a decline in range use.

1982, 1994, and 1998. The 1982 photograph (Figure 1-5) reveals the POW training facility. The facility was also observed on the 1994 and 1998 photographs. The POW training facility was located along the northwestern site boundary and within the range fans for Parcels 100Q and 101Q. Therefore, the ranges were abandoned by the year 1982. The POW training facility was removed in 1999.

Review of the available aerial photographs suggests that range activity occurred at the IASPOW primarily from about 1954 to sometime between 1973 and 1982, when the POW training facility was built.

Figure 1-4

1973 Aerial Photograph

Impact Area South of Former POW Training Facility, Former Rifle/Machine Gun Ranges, Parcels 100Q and 101Q
Fort McClellan, Alabama

Legend

- Area of Investigation
- Fort McClellan Boundary

300 0 300 Feet

NAD83 State Plane Coordinates

N

Shaw™ Shaw Environmental, Inc.

U.S. Army Corps of Engineers Mobile District

Contract No. DACA21-96-D-0018

Figure 1-5

1982 Aerial Photograph

Impact Area South of Former POW Training Facility, Former Rifle/Machine Gun Ranges, Parcels 100Q and 101Q
Fort McClellan, Alabama

Legend

- Area of Investigation
- Fort McClellan Boundary

300 0 300 Feet

NAD83 State Plane Coordinates

N

Shaw™ Shaw Environmental, Inc.

U.S. Army Corps of Engineers Mobile District

Contract No. DACA21-96-D-0018

2.0 Previous Investigations

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

1. Areas where no storage, release, or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).

2. Areas where only release or disposal of petroleum products has occurred.

3. Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response.

4. Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions to protect human health and the environment have been taken.

5. Areas where release, disposal, and/or migration of hazardous substances has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken.

6. Areas where release, disposal, and/or migration of hazardous substances has occurred, but required actions have not yet been implemented.

7. Areas that are not evaluated or requite additional evaluation.

For non-CERCLA environmental or safety issues, the parcel label includes the following components: a unique non-CERCLA issue number, the letter "Q" designating the parcel as a Community Environmental Response Facilitation Act (CERFA) Category 1 Qualified parcel, and the code for the specific non-CERCLA issue(s) present (ESE, 1998). The non-CERCLA issue codes used are:

- A = Asbestos (in buildings)
- L = Lead-based paint (in buildings)
- P = Polychlorinated biphenyls
- R = Radon (in buildings)
- RD = Radionuclides/radiological issues

- X = Unexploded ordnance
- CWM = Chemical warfare material.

The EBS was conducted in accordance with CERFA protocols (CERFA-Public Law 102-426) and DOD policy regarding contamination assessment. Record searches and reviews were performed on all reasonably available documents from FTMC, the Alabama Department of Environmental Management (ADEM), the U.S. Environmental Protection Agency (EPA) Region 4, and Calhoun County, as well as a database search of CERCLA-regulated substances, petroleum products, and Resource Conservation and Recovery Act-regulated facilities. Available historical maps and aerial photographs were reviewed to document historical land uses. Personal and telephone interviews of past and present FTMC employees and military personnel were conducted. In addition, visual site inspections were conducted to verify conditions of specific property parcels.

Parcels 100Q and 101Q were identified as CERFA Category 1 Qualified parcels in the EBS. Category 1 Qualified parcels are areas where no known or recorded storage, release, or disposal (including migration) of hazardous substances or petroleum products has occurred but which have other environmental or safety concerns. Parcels 100Q and 101Q were qualified because chemicals of potential concern (COPC) may be present at the site as a result of historical range activities. Therefore, the parcels required additional evaluation to determine their environmental condition.