



August 17, 2010

SHAW-MC-CK10-1194
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: DACA21-96-D-0018, Task Order CK10
Fort McClellan, Alabama**

**Subject: Letter Work Plan for XRF Delineation Sampling on Portions of Range 29 Located on U.S.
Fish & Wildlife Service Property**

Dear Mr. Coker:

Based upon discussions during a teleconference with the Army on August 5, 2010, Shaw will perform x-ray fluorescence (XRF) soil sampling around existing sample location HR-87Q-MW21 at Range 29. The objective of this sampling is to delineate the horizontal and vertical extent of arsenic contaminated soil identified during the site investigation recently performed on USFWS property at Range 29. The goal of this effort is to delineate arsenic concentrations in soil to established background levels for Fort McClellan presented in the *Background Metals Survey Report, Fort McClellan, Alabama*. The background values for arsenic in soil are listed below:

- Surface soil – 13.7 milligrams per kilogram (mg/kg)
- Subsurface soil – 18.3 mg/kg.

Shaw will establish a 60-foot by 60-foot sampling grid (with 10-foot by 10-foot grid squares) centered on HR-87Q-MW21 (Figure 1). Shaw will collect surface soil samples for XRF analysis at the grid node locations shown on Figure 1. The surface soil samples will be collected at a depth of 0 to 1 foot below ground surface. Additionally, subsurface soil samples will be collected at 12 locations (Figure 1) to confirm that the arsenic contamination is limited to the upper foot of soil at Range 29. The subsurface sampling depth is planned for 1 to 2 feet below ground surface but may extend deeper than 2 feet bgs if contamination is present at a given location. Also, the horizontal extent of the grid will be expanded as necessary if contamination is encountered beyond the proposed sampling area.

A calibrated, field-portable XRF instrument will be used to analyze the soil samples. The XRF instrument will be operated in accordance with the manufacturer's guidelines and Shaw's standard operating procedure. To improve the accuracy and comparability of the results, the XRF soil samples will be "prepared" by passing the soil samples through a No. 10 sieve (to remove coarse soils and other non-soil items) and drying any samples that are excessively moist. Daily function checks and instrument calibration will be performed, including the analysis of a silica sand blank and three National Institute of Standards and Technology standard reference materials (SRM) of prepared soil with certified metals concentrations.

Twenty percent of the XRF soil samples will be selected for confirmation analysis at an offsite analytical laboratory. The confirmation samples will be analyzed for arsenic and other select metals (see Table 1) using the U.S. Environmental Protection Agency's *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846) analytical methods. The additional metals analyses will facilitate subsequent geochemical evaluation of the laboratory confirmation data if required. Table 1 summarizes the offsite confirmation sample designations and analytical parameters.

All XRF field screening and other soil sampling activities, including sample documentation, sample packaging/shipping, and chain of custody, will follow the procedures in the FTMC Installation-Wide Sampling and Analysis Plan (SAP) (IT, 2002). The SAP addresses the supplies and equipment to be used and procedures for field personnel. Health and safety requirements will conform to the FTMC Installation-Wide Safety and Health Plan (Appendix A of the SAP) and the existing Site-Specific Health and Safety Plan (Appendix A of the Site-Specific Work Plan). Shaw will also conduct UXO avoidance procedures during all field activities as outlined in the Installation-Wide Ordnance and Explosives Management Plan (Appendix E of the SAP) and the existing Site-Specific Munitions and Explosives of Concern (MEC) Safety Plan (Appendix A of the Site-Specific Work Plan).

Sampling locations will be marked with pin flags or stakes and surveyed using either global positioning system (GPS) or conventional civil survey techniques, as necessary to obtain the required level of accuracy. Procedures to be used for surveying are described in the SAP.

At your request, I have distributed copies of this work plan as indicated below. Shaw is prepared to complete the field activities during the week of August 23-27, 2010. If you have any questions, or need further information, please contact me as indicated below.

Sincerely,



J. Troy Winton
Project Manager
Shaw Environmental, Inc.

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Enclosure

Distribution: Lisa Holstein, Army TF (4 hardcopies; 1 CD)
Brandi Little, ADEM (2 hardcopies; 1 CD)
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Peter Tuttle, USFWS (1 hardcopy; 1 CD)
Steve Miller, USFWS (1 hardcopy; 1 CD)
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Table 1

**Confirmation Soil Sample Designations and Analytical Parameters
Range 29 XRF Delineation Sampling
Fort McClellan, Alabama**

Sample Location	Sample Designation	Sample Depth (ft bgs)	QA/QC Samples		Analytical Parameters*
			FD	MS/MSD	
HR-87Q-XRF##	HR-87Q-XRF##-CS-HL0096-REG	TDB			Arsenic, aluminum, iron, manganese
HR-87Q-XRF##	HR-87Q-XRF##-CS-HL0097-REG	TDB			Arsenic, aluminum, iron, manganese
HR-87Q-XRF##	HR-87Q-XRF##-CS-HL0098-REG	TDB	HR-87Q-XRF##-CS-HL0099-FD		Arsenic, aluminum, iron, manganese
HR-87Q-XRF##	HR-87Q-XRF##-CS-HL0100-REG	TDB		HR-87Q-XRF##-CS-AF0004-MS HR-87Q-XRF##-CS-AF0004-MSD	Arsenic, aluminum, iron, manganese
HR-87Q-XRF##	HR-87Q-XRF##-CS-HL0101-REG	TDB			Arsenic, aluminum, iron, manganese
HR-87Q-XRF##	HR-87Q-XRF##-CS-HL0102-REG	TDB			Arsenic, aluminum, iron, manganese
HR-87Q-XRF##	HR-87Q-XRF##-CS-HL0103-REG	TDB			Arsenic, aluminum, iron, manganese
HR-87Q-XRF##	HR-87Q-XRF##-CS-HL0104-REG	TDB	HR-87Q-XRF##-CS-HL0105-FD		Arsenic, aluminum, iron, manganese
HR-87Q-XRF##	HR-87Q-XRF##-CS-HL0106-REG	TDB			Arsenic, aluminum, iron, manganese
HR-87Q-XRF##	HR-87Q-XRF##-CS-HL0107-REG	TDB			Arsenic, aluminum, iron, manganese
HR-87Q-XRF##	HR-87Q-XRF##-CS-HL0108-REG	TDB			Arsenic, aluminum, iron, manganese
HR-87Q-XRF##	HR-87Q-XRF##-CS-HL0109-REG	TDB			Arsenic, aluminum, iron, manganese

* Samples to be analyzed using EPA SW-846 methods.

- XRF location for offsite confirmation analysis to be selected at discretion of analyst in the field.

CS - Confirmation sample.

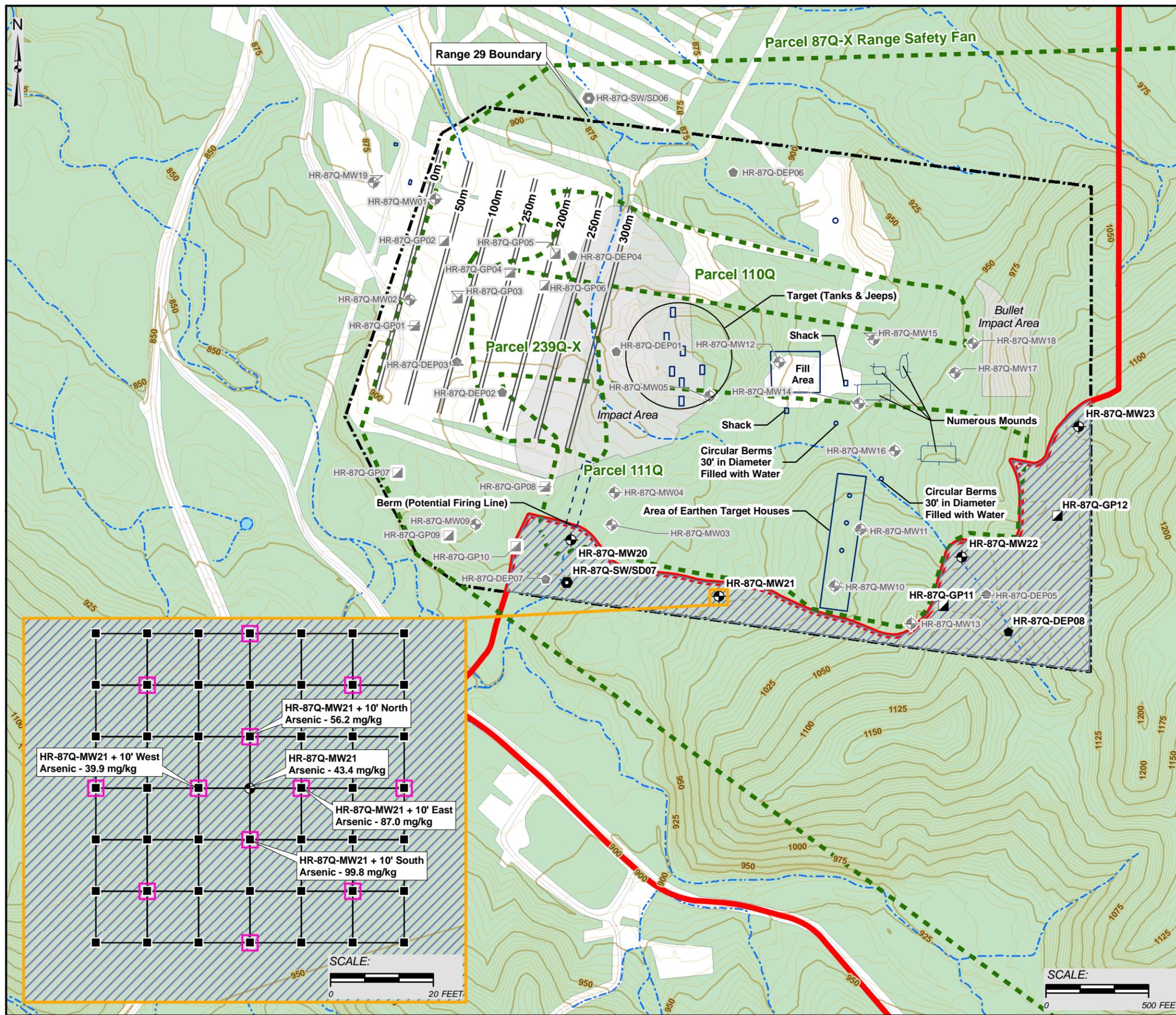
FD - Field duplicate.

ft bgs - Feet below ground surface.

MS/MSD - Matrix spike/matrix spike duplicate.

QA/QC - Quality assurance/quality control.

REG - Field sample.



LEGEND

Recently Installed Locations

- Monitoring Well
- Surface & Subsurface Soil Sample Location
- Surface Water/Sediment Sample Location
- Depositional Soil Sample Location
- Proposed XRF Surface Soil Sample Location (0-1 ft bgs)
- Proposed XRF Surface and Subsurface Soil Sample Location (0-1 ft bgs and 1-2 ft bgs)

Sample Locations from Previous SI at Range 29

- Monitoring Well
- Surface & Subsurface Soil Sample Location
- Surface Water/Sediment Sample Location
- Surface Water/Sediment Sample Location
- Streams (dashed where intermittent)
- Roads
- Topographic Contour (5-ft Interval)
- Range 29 Firing Lines
- Parcel Boundary/Range Safety Fan
- Parcel 87Q-X, Range 29 Boundary
- USFWS SI Study Area
- U.S. Fish & Wildlife Service (USFWS) Property Boundary
- Impact Area
- Wooded
- 10'x10' Sampling Grid

FIGURE

PROPOSED XRF SAMPLING LOCATIONS
 Range 29 SI on U.S. Fish & Wildlife Service Property

U.S. ARMY CORPS OF ENGINEERS
 MOBILE DISTRICT
 FORT McCLELLAN
 CALHOUN COUNTY, AL
 CONTRACT NO. DACA21-96-D-0018

