

# WORK PLAN AND SAMPLING AND ANALYSIS PLAN ADDENDUM

## SOLID WASTE MANAGEMENT UNIT B-4



*Prepared for:*

## Camp Stanley Storage Activity Boerne, Texas

*Prepared for:*

**PARSONS**

Austin, Tx

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## **ADDENDUM TO WORK PLAN AND SAMPLING AND ANALYSIS PLAN WASTE MANAGEMENT INVESTIGATION FOR SWMU B-4**

Parsons is currently under contract to provide an investigation at Solid Waste Management Unit (SWMU) B-4, Camp Stanley Storage Activity (CSSA), Boerne, Texas. This document serves as an addendum to the existing CSSA Work Plan (see CSSA Environmental Encyclopedia ([www.stanley.army.mil](http://www.stanley.army.mil)), Volume 1-1: *Work Plan*, February, 1996), and work plan addenda contained herein.

An investigation will be performed to remove impacted media and waste located at SWMU B-4. The investigation will remove potential sources of contamination including metal and assorted debris and all soils with contamination levels that exceed the identified Texas Risk Reduction Program (TRRP) protective concentration limits (PCLs) (see Section 2.3). This Addendum describes additional activities to be conducted as part of this investigation. Work will be performed in accordance with requirements of the Resource Conservation and Recovery Act (RCRA) 3008(h) Order in effect for CSSA and in accordance with 30 Texas Administrative Code (TAC) §350, the Texas Risk Reduction Program (TRRP) administered by the Texas Commission on Environmental Quality (TCEQ).

Additional specific activities associated with this investigation are described in the *Storm Water Pollution Prevention Plan for SWMU B-4*, February, 2012, and the *RCRA Facility Investigations (RFI) Interim Measures Waste Management Plan (IM WMP)*, Parsons 2006 and the *RFI IM/WMP Addendum for SWMU B-4*, February, 2012.

### **1.0 SITE DESCRIPTION AND BACKGROUND**

#### **1.1 Description**

SWMU B-4 is located in the inner cantonment area northeast of the main compound near Well 16 and adjacent to area of concern 64 (AOC-64) (Figure 1). The area was used for the disposal of classified documents, trash, and ordnance-related materiel for an indeterminate period prior to the 1990s. The original site boundary, which encompassed a total of four trenches, covers approximately two acres (Figure 2). This investigation involves the excavation of an additional trench discovered during the sorting of previously excavated trench material (Figure 2). Additional background information on SWMU B-4 can be found in CSSA Environmental Encyclopedia, Volume 3-1.

#### **1.2 Previous Investigations**

Previous investigations at SWMU B-4 included two geophysical surveys (1995) that were used to delineate the trench locations; two soil gas surveys (1995); and surface and subsurface soil sampling for volatile organic compounds (VOCs), metals and explosives (2000).

In February 2011, the four identified trenches were excavated. The excavated soils were sifted to remove debris and rock greater than 3-inches in diameter. A total of approximately 9,110 cubic yards (CYs) of soil was removed from the site for management at the east pasture berm.

Approximately 3,000 CY of remaining excavated media was sorted and managed in September 2011. The media contained a mix of munitions debris (MD), munitions and explosives of concern (MEC), metal scrap, rocks, and other miscellaneous debris. While scraping the surface of the site in September 2011, additional partially-buried guns and magazines were discovered in an area between two of the previously-excavated trenches. A Schonstedt hand-held magnetometer was used by the unexploded ordnance (UXO) team to help delineate the boundaries of a new trench.

## **2.0 INVESTIGATION PROCEDURES**

This investigation involves the excavation of the new trench area as shown in Figure 2, appropriate management of all associated debris and soils, and confirmation soil sampling to ensure the success of the excavation.

All work will be performed in Level D personal protective equipment and under the health and safety protocol outlined in the Health and Safety Plan (HASP) (*Health and Safety Plan*, December, 2010). Because MEC may be encountered during the investigation, all activities will be supervised by UXO technicians. The technicians will provide an ESS (see Section 2.1.4) that delineates munitions and explosives of concern (MEC) avoidance, identification, clearance certification of the excavated media, and will be on site to address any MEC safety issues associated with the excavation process.

### **2.1 Excavation Effort**

The identified new trench area shown in Figure 2 will be excavated to a depth where confirmation samples indicate the concentrations of contaminants of concern are below the criteria described in Section 2.3.

The excavated soil material will be stockpiled along and adjacent to the excavation to allow for UXO Technicians to inspect and manually sift through the excavated material. Once the UXO technician has completed their inspection of the excavated material, the material will then be moved to the staging area shown in Figure 2 and placed into 500 CY piles. During the sifting operations, all material that is not native soil/rock, will be sorted and managed as appropriate in coordination with CSSA. Munitions, gun and gun related items will be segregated for demilitarization. The remaining excavated soil media will be characterized for management as described below.

### **2.2 Waste Management**

It is anticipated that as much as 2,100 CY of excavated materials will require some form of management. All excavated soils will be managed in accordance with CSSA's

*RFI Interim Measures Waste Management Plan*, Parsons, 2006 and the *RFI/IM Addendum for SWMU B-4*, Parsons, 2012.

For presumed impacted soil media, waste characterization sampling will occur at a frequency rate of 1 sample per 500 CY. Waste characterization samples will be analyzed by the toxicity characteristic leaching procedure (TCLP) for RCRA 8 metals, total analysis for CSSA 9 metals, in addition to other analysis, as appropriate. All non-impacted soil, as per the results of the total analysis for CSSA 9 metals and other analysis conducted, will be reused on site. All impacted soil media that meets non-hazardous criteria, and CSSA standards for berm reuse (e.g. no pieces of metal greater than six inches, materials identified as MEC items, etc.), will be transported to the East Pasture berm for reuse.

Any soil media identified above characteristic hazardous criteria (40 Code of Federal Regulations [CFR] 261.24) may be treated (i.e. with use of PIMS, etc.) in accordance with the *RFI/Interim Measures Waste Management Plan* to non-hazardous levels and managed at the East Pasture berm or off-post as appropriate.

Parsons will coordinate the transportation of the soils to the East Pasture berm with CSSA personnel. Erosion control will follow the *Storm Water Pollution Prevention Plan for SWMU B-4 Investigation*, February, 2012.

### **2.3 Soil Sampling**

Tier 2 PCLs were developed by Weston<sup>®</sup> during the excavation of the original four trenches for cadmium and mercury. All other analyte PCLs will be based on TRRP Tier 1 standards. The TRRP Tier 1 PCL identified for this investigation is defined as the lowest value among following: 1) the TRRP Tier 1 Residential 30-acre PCL for total soil combined ( $^{Tot}Soil_{Comb}$ ); 2) the TRRP Tier 1 Residential 30-acre PCL for groundwater protection ( $^{GW}Soil_{Ing}$ ); and 3) the TCEQ Ecological Benchmark for Soil. If the lowest of these three values is less than the CSSA soil background value or the Texas-specific background value, the soil background value becomes the Tier 1 PCL. Table 1 outlines these values and the identifies PCLs for the CSSA 9 metal analytes. The TRRP Human Health PCLs for VOCs and SVOCs can be found at <http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html>. The identified PCLs may be modified based on investigation findings, if necessary.

Soil samples for laboratory analysis will be collected during and post-excavation, as necessary, to confirm the successful removal of the contaminated soils. Based on previous findings and results from the investigation, confirmation samples may be collected analyzed for CSSA 9 metals, VOCs, SVOCs, and/or explosives. Soil samples with results lower than the identified PCLs will be used to confirm contamination removal at a rate of approximately 1 sample per 50 feet along the horizontal excavation boundary, and 1 sample per 10,000 square feet to confirm the vertical excavation boundary. If any results indicate contamination above the identified PCLs, the

excavation of soils will be expanded in that direction until confirmation samples show no indication of metal contamination above PCLs. The number and location of confirmation samples will be dependent on the extent of excavation.

Soil samples will be discrete grab samples and will be collected as prescribed in the *CSSA SAP*, February, 1996. The collection and analysis of quality assurance/quality control (QA/QC) samples is described in the *CSSA Base-wide Quality Assurance Project Plan, Version 1.0*, January, 2003 (see CSSA Environmental Encyclopedia, Volume 1-4). The QA/QC samples and their collection frequency are as follows:

- One Field Duplicate (FD) per 10 samples
- One Matrix Spike (MS) and one Matrix Spike Duplicate (MSD) per 20 samples
- One Equipment Blank (EB) per site.

Full QA/QC will be performed on these samples and 100% of the results will be validated/verified by a chemist.

The necessary turnaround time (TAT) for the samples will be based on the current timeframe of the excavation and may range from expedited (3-day) to the standard TAT (21-day).

#### **2.4 Site-Specific Explosive Safety Submission**

An ESS annex for this site was developed in accordance with Department of Defense Instruction 6055.9F. The SUXOS will coordinate the ESS with CSSA's Safety and Environmental Office. The ESS outlines site-specific requirements and incorporates all health and safety protocol included in the *Health and Safety Plan*, December, 2011. All personnel entering the site will sign a daily entry log. Routine safety briefings will be conducted. In the event that MEC is encountered, the call down tree found in the ESS will be activated and all operations will halt until the SUXOS or the supporting Explosive Ordinance Disposal (EOD) authorizes the project to continue.

#### **2.5 Erosion Control Measures and Site Rehabilitation**

Erosion control will follow the *Storm Water Pollution Prevention Plan (SWPPP) for SWMU B-4*, February, 2012.

### **3.0 SCHEDULE**

The investigation is proposed to begin February 6, 2012. It is projected to take approximately 15 weeks. Confirmation and waste characterization sampling will be conducted, as appropriate, throughout the excavation procedure.

Table 1. Assessment Levels for Chemicals of Potential Concern  
 CSSA 9 Metals  
 SWMU B-4

Chemical of Potential Concern	Residential Tier 1 <sup>Tot</sup> Soil <sub>Comb</sub> (mg/kg) <sup>1</sup>	Residential <sup>GW</sup> Soil <sub>Ing</sub>		CSSA Soil Background (mg/kg) <sup>3</sup>	Texas-Specific Soil Background (mg/kg) <sup>4</sup>	EcoBenchmark (mg/kg) <sup>5</sup>
		(mg/kg) <sup>2</sup>	Tier			
Arsenic	24	2.5	1	<b>19.6</b>	5.9	18
Barium	8100	220	1	186	<b>300</b>	330
Cadmium	52	<b>296</b>	2	3	NA	32
Chromium	27000	<b>1200</b>	1	40.2	30	0.4
Copper	550	<b>520</b>	1	23.2	15	61
Lead	500	1.5	1	<b>84.5</b>	15	120
Mercury	2.1	<b>5.5</b>	2	0.77	0.04	0.1
Nickel	830	<b>79</b>	1	35.5	NA	30
Zinc	9900	<b>1200</b>	1	73.2	30	120

1) Texas Risk Reduction Program Rule Tier 1 Protective Concentration Levels (PCLs) <sup>Tot</sup>Soil<sub>Comb</sub>, for 30 acre source area, May 2011 (<http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html>).

2) Texas Risk Reduction Program Rule Protective Concentration Levels (PCLs) <sup>GW</sup>Soil<sub>Ing</sub>, for 30 acre source area, May 2011 (<http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html>).

3) Second Revision to Evaluation of Background Metals Concentrations in Soils and Bedrock, February 2002.

4) Background Geochemistry of Some Rocks, Soils, Plants, and Vegetables in the Conterminous United States”, by Jon J. Connor, Hansford T. Shacklette, et al., Geological Survey Professional Paper 574-F, US Geological Survey.

5) TCEQ Ecological Benchmark for Soil as stated in Update to Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas, Regulatory Guidance (RG)-263, Revised (January 2006) (<http://www.tceq.state.tx.us/assets/public/remediation/eco/0106eragupdate.pdf>).

Identified PCLs are shown in **bold**.



Aerial Photo Date: 2008



2,500 1,250 0 2,500 Feet

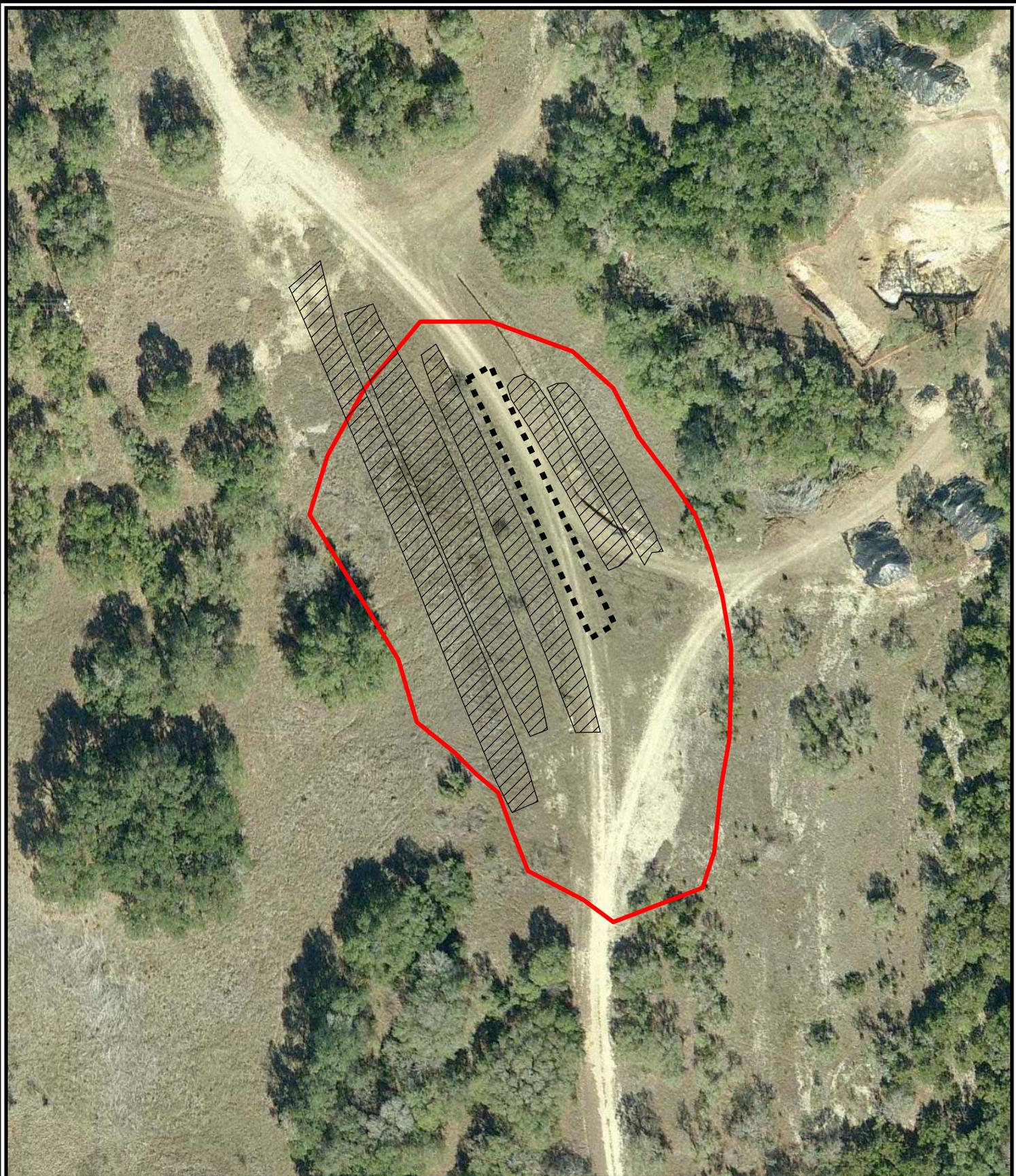


- CSSA Boundary
- SWMU B-4 Boundary

Figure 1

SWMU B-4  
Site Location Map  
Camp Stanley Storage Activity

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-  Excavated Area
-  Proposed Excavation Area
-  SWMU B-4 Site Boundary

0 37.5 75 150  
Feet

Figure 2

SWMU B-4  
Site Map  
Camp Stanley Storage Activity

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