

**Appendix B**

**RRAD Phase I Sampling and  
Analysis Plan**

# DRAFT

SDSRR-WE

20 Jan 94

MEMORANDUM THRU Chief, Industrial Risk Management Office

FOR Chief, Hazardous and Solid Waste Management Team

SUBJECT: Phase 1 Sampling at Camp Stanley Storage Activity (CSSA)  
B-20 Detonation Field

1. GENERAL. Red River Army Depot (RRAD) personnel will collect surface and subsurface soil samples at the CSSA B-20 Detonation Field during the week of January 24-28, 1994. The RRAD employees identified to collect the samples are Mr. Ron Williams and Mr. Mike Lockard who have a total of 15 years experience in chemical analysis and sample collection. Samples will be analyzed for volatile organics, semi-volatile organics, metals (total and TCLP) and explosives. During this phase of the investigation, the site will be physically screened to determine what portions may be classified as directly impacted by detonation activities, directly affected by aerial expulsion (kick-out), and areas at the maximum radius where scrap metal was superficially deposited from past detonation activities. Through the field screening and analytical results, areas requiring further study will be identified.
2. SITE OBSERVATIONS. Currently, nine open craters have been identified as areas directly affected by detonation activities. Currently, one contains ponding water approximately 18 to 24 inches deep. Visual observation at this point in time reveals small fragments of limestone within a radius of approximately 30 feet around each crater. This area is characterized as being directly affected by kick-out. Scrap metal has been found at a distance of approximately 100 feet past the boundary of the detonation area on the north and east side. Wildlife is flourishing in the detonation area (i.e., deer, coyotes, and horses) as evident from the observance of tracks, droppings and actual sightings as well as the observance of waterfowl in the livestock pond northeast of the detonation area. No disturbed vegetation was observed during the screening of the field.
3. SAMPLING. The soil samples will be collected in the field with a 3 inch diamet. stainless steel hand auger and placed in glass jars fitted with teflon lined caps. Sample material will be extruded from the hand auger, placed in sample containers, preserved (if required) in accordance with Table 1, and then placed in coolers and stored at 4 degrees Celsius. All sample jars will be labeled with the location, date, depth, sample number, and sampler's identification. In the event that the soil being sampled is too hard for collection by way of the hand auger,

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a properly decontaminated shovel will be utilized to extrude an adequate volume of soil from the predetermined depth. Soil samples will be collected from a depth of 0-12 inches. Composite samples will be blended in a stainless steel mixing bowl. In addition, liquid samples will be collected from the one crater mentioned above containing ponding water as well as the livestock pond northeast of the detonation area.

## 4. PROPOSED FIELD SCREENING SAMPLING.

### - DETONATION CRATERS

To confirm the level of residual contamination within the detonation craters, one grab sample will be collected from the center of the crater and three grab samples from the wall of the craters will be blended and composited as one sample. The grab samples will be surface samples (0-12 inches deep).

### - KICK OUT ZONE

To assess the impact of historical open detonation activities at the site, quadrants, approximately 900 square feet in size, will be generated in the kick out zone. One grab sample per quadrant will be collected. The location of the sample will be the approximate center of the quadrant or at an area of visually observed potential significance (i.e., surface staining, stressed vegetation, ponding water, etc.).

### - LIVESTOCK POND

To assess the impact of potentially contaminated sediments that may have been carried by stormwater runoff into the pond, one sediment sample will be collected at the point where runoff enters the pond and one surface water sample will be collected from the pond itself. The sediment sample will be taken from 0-12 inches in depth.

5. QA/QC AND RINSATE SAMPLES. QA/QC samples will be collected at a ratio of 1 per every 10 samples collected. Immediately after collection of each QA/QC sample, the sampling instrument will be decontaminated and a rinsate sample will be collected. QA/QC samples will be analyzed for volatile organics, semi-volatile organics, metals (total and TCLP), and explosives. The rinsate samples shall be analyzed for total metals and explosives.

6. LABELING AND PRESERVATION. All samples will be labeled, containerized, and preserved in accordance with Table 1. The labels will be signed at the time of sample collection by the sampling personnel. All chemical preservatives shall be of reagent grade quality. Preservatives shall be added in order to

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achieve proper pH. Each sample container will be sealed and stored on ice until delivery to an appropriate laboratory.

7. CHAIN OF CUSTODY. A chain of custody form will be filled out for each sample collected. A sample chain of custody form is attached as Table 3. There will be only one set of water samples included on each chain of custody form. Therefore, if two different sets of soil or water samples are shipped in the same storage cooler, two distinct custody forms will accompany the samples. The chain of custody form will be signed by sampling personnel, copied, and a copy of the chain of custody placed in the cooler to be shipped with the samples. The laboratory will also sign the chain of custody form upon receipt and submit a copy of the chain of custody to the sampler along with the sample results.

8. DECONTAMINATION. All sampling equipment will be decontaminated before sample collection in the following manner:

- a. Wash with a mild non-phosphatic soap;
- b. Rinse with tap water;
- c. Air dry;
- d. Rinse with distilled water;
- e. Air dry.

9. MISCELLANEOUS. A stake will be driven in the ground at the point where each sample is collected with the exception of the livestock pond. The sample number will be written on each stake with indelible ink. The location of the sample will also be recorded on a site map.

Mike Lockard  
Hazardous and Solid Waste  
Management Team

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TABLE 1

## SAMPLE CONTAINERS AND PRESERVATION

PARAMETER	CONTAINER	PRESERVATION	HOLDING TIME
Total Ba, Cd, Pb, Ni, Ag, Cr (rinsate)	1 - 1L Glass	HNO <sub>3</sub> to pH < 2 (3 ml)	6 Mo.
Total Ba, Cd, Pb, Ni, Ag, Cr, CN Semi-volatile organics	1 - 1/2L jar	Ice to 4 C	14 Days
Volatile organics	1 - 1/2L jar	Ice to 4 C	14 Days
TCLP Cd, Cr, Pb, Ag, Ba	1 - 1/2L jar	Ice to 4 C	6 Mo.

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TABLE 2

## ANALYTICAL METHODS

Volatile Organics	EPA Method 8240
Semi-volatile Organics	EPA Method 8270
Explosives	EPA Method 8330
Metals	EPA Method 6010

TABLE 3  
CHAIN OF CUSTODY

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RED RIVER ARMY DEPOT  
ATTN: SDSRR-WE (BLDG. 303-B)  
TEXARKANA, TEXAS 75507-5000  
(903) 334-4148/3559

SAMPLE/PROFILE NO: CS- - 94

SAMPLE IDENTIFICATION

SAMPLE COLLECTOR: *Lockard/Williams* BLDG. NO: TIME:  
SAMPLE POINT: *OB/OD Grounds (Camp Stanley)* DATE:  
NOUN: *Soil Samples*  
WASTE STREAM SUPERVISOR: EXT: 0 CC:  
PROCESS NAME:

MATERIAL CHARACTERIZATION

SOLID:  SEMI SOLID: COLOR:  
LIQUID: ODOR:

PARAMETERS FOR ANALYSES

pH:	FLASHPOINT:	PAINT FILTER TEST:
<u>METALS:</u>	<u>TCLP</u> <u>TOTAL</u>	<u>VOLATILES:</u> <u>TCLP</u> <u>TOTAL</u>
CADMIUM		BENZENE
CHROMIUM		CARBON TETRACHLORIDE
LEAD		CHLOROBENZENE
SILVER		CHLOROFORM
MERCURY		ETHYLBENZENE
		METHYL ETHYL KETONE
<u>PETROLEUM PRODUCTS:</u>		METHYLENE CHLORIDE
TOTAL PETROLEUM HYDROCARBONS		TOLUENE
BTU/LB		1,1,1, TRICHLOROETHANE
DENSITY RANGE		VINYL CHLORIDE
ASH CONTENT		XYLENE

<u>OTHER PARAMETERS:</u>	<u>TCLP</u>	<u>TOTAL</u>
TOTAL METALS		X
TCLP METALS	X	
EXPLOSIVES		X
TCL VOA		X
TCL SVOA		X

NOTES:

ANALYST INFORMATION

DATE RECEIVED: ANALYST NAME:  
DATE COMPLETED: SIGNATURE: