Building 40 Container Storage Area
Closure Report
Texas Commission on Environmental Quality 001

Prepared for:

Camp Stanley Storage Activity
Texas Commission on Environmental Quality Solid
Waste Registration Number 69026
Boerne, Texas

SEPTEMBER 2003

PARTIAL FACILITY CLOSURE CERTIFICATION
BUILDING 40 CONTAINER STORAGE AREA
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY 001

Department of the Army
Camp Stanley Storage Activity
Texas Commission on Environmental Quality Solid Waste Registration
Number 69026
Boerne, Texas

I hereby certify that the closure of Building 40, a less than 90-day accumulation container storage area (designated on Camp Stanley Storage Activity's [CSSA's] Notice of Registration as Texas Commission on Environmental Quality [TCEQ] Unit 001) on the CSSA installation in Boerne, Texas was performed under my direction in accordance with the specifications of the closure plan submitted to the Texas Natural Resource Conservation Commission (TNRCC) by letter dated December 17, 1996, approved by the TCEQ in a letter dated January 13, 1997, and as described in the attached report, and that, to the best of my knowledge and belief, said closure has been accomplished as described in the attached report.

Jason D. Shirley — 23 Sep 03

Jason D. Shirley
Installation Manager
U.S. Army

Date

Kirk W. Lawson — 9/17/2003

Kirk W. Lawson, P.E.
State of Texas Registration No. 79204
Parsons, Inc.

Date

9/17/2003
Kirk W. Lawson

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CLOSURE REPORT FOR THE BUILDING 40 CONTAINER STORAGE AREA TCEQ 001

CAMP STANLEY STORAGE ACTIVITY BOERNE, TEXAS

INTRODUCTION

The Building 40, a less-than 90-day accumulation container storage area (Texas Commission on Environmental Quality [TCEQ] Notice of Registration [NOR] Unit 001), was used for the collection of containerized hazardous wastes from operations at the installation prior to transfer to another Army agency or contractor for appropriate disposal. The Building 40 concrete foundation measures 12 feet by 20 feet and was constructed over an existing foundation. The container storage area was operated as a less-than-90-day accumulation container storage area, and is therefore exempt from permitting requirements under 40 Code of Federal Regulations (CFR) §262.34. Building 40 operated from approximately 1993 to 1996, until Building 86 was built and Building 86 has been operating as the designated less-than-90-day storage facility for CSSA.

Closure activities were conducted, except as noted in this report, in accordance with the Building 40 Container Storage Area Closure Work Plan dated June 2000. This closure report represents the last required step in closure activities for Building 40.

CLOSURE ACTIVITIES

The closure was conducted in accordance with 40 CFR §265.111 and 30 Texas Administrative Code (TAC) 335.553 Subchapter S, as described in the closure plan (provided in **Volume 1-2** behind the Solid Waste Management Unit [SWMU] Bldg 40 tab), except as noted in this report. Photographs depicting the exterior of Building 40 and the interior floor of Building 40 are provided in **Appendix A**.

Prior to closure activities, accumulated waste was removed and placed in a new less than 90-day storage facility, Building 86, designated as the CSSA waste management unit TCEQ 002. The floor of Building 40 was inspected to ensure there were no cracks in the concrete slab. Because no cracks were observed, wipe samples of the concrete floor were considered more appropriate than soil or groundwater samples surrounding the building for verifying that no contamination is present above closure criteria. The closure plan therefore specified collection of concrete floor wipe samples.

In September 2002, verification swipe samples were taken in a grid pattern; ten swipe samples were taken for each group of constituents for a total of 30 samples. Samples were shipped to APPL Laboratory in Fresno, California for analysis. Based upon historic storage records for Building 40, there is evidence that both organic and inorganic materials in solid and

liquid form were stored at the Building. A more detailed list of the stored materials is provided in the Building 40 Container Storage Area Closure Work Plan dated June 2000. From this list of stored materials, various metals, PCBs and SVOCs were considered as possible contaminants that may be present on the concrete floor inside the building. If VOCs were left on the floor after the storage containers had been removed six years prior to the September 2002 sampling event, the likelihood of any VOCs being detected is greatly reduced due to the highly volatile nature of VOC compounds. The concrete floor is not cracked and therefore the potential for contaminant migration below the concrete floor is also greatly reduced. There is no record of any spills of stored material at Building 40, however if any leaks did occur from the stored containers, the leaks would have been localized at the concrete floor around the storage container. A summary of the laboratory results for the contaminants of concern including pesticides, cadmium, lead, and semivolatile organic compounds (SVOCs) are shown in **Table Building 40-1A**, **Table Building 40-1B**, and **Table Building 40-1C**. Data validation reports are in **Appendix B,** and the complete laboratory analytical data packages are included in **Appendix C**.

The analytical results reported for pesticides and SVOCs from the wipe samples were below reporting limits and indicate that no measurable contaminants remain at closure. Lead was reported at concentrations ranging from 0.25 to 5.8 total milligrams per 100 cm^2 of concrete surface area, and cadmium was reported at concentrations ranging from 0.0001 to 0.0138 total milligrams per 100 cm^2 of concrete surface area. Lacking any comparison criteria for metals concentrations in wipe samples, it was not possible to determine if these wipe samples showed that the building conditions were representative of background for meeting Risk Reduction Standard 1 closure requirements.

In June 2002, based on a request from TCEQ, four concrete chip samples were collected from the interior floor of Building 40 and sent to APPL Laboratory for analysis. These samples were analyzed for lead (SW-7421) and cadmium (SW-7131A) only, since no SVOCs or pesticides were detected in the wipe samples. Detected results are summarized in **Table Building 40-2**. Cadmium concentrations ranged from 0.28 to 5.68 mg/kg, and lead concentrations ranged from 71.36 to 350.1 mg/kg. However, there is no information available regarding metals concentrations of the concrete at the time that the building was constructed. Flyash and slag, which can contain high concentrations of metals, are commonly used to augment concrete and are likely the source of the elevated lead and cadmium concentrations. Therefore, there are no comparison criteria for the Building 40 concrete chip samples.

Finally, in July 2003, the interior of Building 40 was pressure-washed, and a sample of the rinsate water was collected to determine if all waste residues had been removed. The sample was analyzed for cadmium and lead by APPL Laboratory. Cadmium was reported in the rinsate sample at a concentration of 0.0002 milligrams per liter (mg/L) which is below the practical quantitation limit (PQL) of 0.005 mg/L, and lead was reported in the sample at the PQL of 0.005 mg/L. These results demonstrate that all waste and waste residue have been removed from the site, and therefore, clean closure of Building 40 has been achieved.

Table Building 40-1A
Analytical Results for Pesticides
Swipe Samples at the Building 40 Container Storage Area (TNRCC 001)

	Sample ID	Bldg40-A1	Bldg40-A2	Bldg40-A3	Bldg40-A4	Bldg40-A5	Bldg40-A5	Bldg40-A6	Bldg40-A7	Bldg40-A8	Bldg40-A9	Bldg40-A10	Bldg40-Blank A
	Sample Date	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00
		SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
		N	N	N	N	FD	N	N	N	N	N	N	N
	Dilution Factor	1	1	1	1	1	1	1	1	1	1	1	1
	Laboratory ID	R2435	R2436	R2437	R2438	R2440	R2439	R2441	R2442	R2443	R2444	R2445	R2446
	Lab RL	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag
SW8081A (total ug)													
Aldrin	0.5	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
BHC, alpha-	0.5	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U	0.33 U
BHC, beta-	0.5	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
BHC, delta-	0.5	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
BHC, gamma- (Lindane)	0.5	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Chlordane, alpha-	0.5	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Chlordane, gamma-	0.5	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
DDD, p,p'-	1.	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
DDE, 4,4'-	1.	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
DDT, 4,4'-	1.	0.16 U	0.16 U	**0.2** F	**0.2** F	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	**0.2** F	0.16 U
Dieldrin	1.	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
Endosulfan I	0.5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Endosulfan II	1.	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Endosulfan sulfate	1.	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
Endrin	1.	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Endrin aldehyde	1.	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
Heptachlor	0.5	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
Heptachlor epoxide	0.5	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
Methoxychlor	5.	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
Toxaphene	0.5	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U

BOLD >MDL < RL

Data Qualifiers

J The analyte was positively identified, the quantitation is an estimation.

U The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.

F The analyte was positively identified, but the associated numerical value is below the RL.

R The data are unusable due to deficiencies in the ability to analyze the sample and meet the QC criteria.

Table Building 40-1B
Analytical Results for Cadmium and Lead
Swipe Samples at the Building 40 Container Storage Area (TNRCC 001)

	Sample ID	Bldg40-B1	Bldg40-B1	Bldg40-B2	Bldg40-B2	Bldg40-B2	Bldg40-B3	Bldg40-B3	Bldg40-B3	Bldg40-B4	Bldg40-B4
	Sample Date	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00
		SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
		N	N	N	N	N	N	N	N	N	N
	Laboratory ID	R2447	R2447DL	R2448	R2448DL	R2448DL	R2449	R2449DL	R2449DL	R2450	R2450DL
	Dilution Factor	1	200	1	5	1000	1	20	200	1	10
	Lab MDL / Lab RL	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag
SW7131A (total mg)											
Cadmium	0.00002 / 0.0001	0.0001 J		0.00164 R	0.00453 J		0.00332 R	0.0138 J		0.00193 R	0.0086 J
SW7421 (total mg)											
Lead	0.00007 / 0.0005	0.01664 R	0.25 J	0.01725 R		2.19 J	0.01658 R		0.94 J	0.01578 R	

	Sample ID	Bldg40-B4	Bldg40-B5	Bldg40-B5	Bldg40-B5	Bldg40-B5	Bldg40-B5	Bldg40-B5	Bldg40-B6	Bldg40-B6	Bldg40-B6
	Sample Date	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00
		SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
		N	FD	FD	FD	N	N	N	N	N	N
	Laboratory ID	R2450DL	R2452	R2452DL	R2452DL	R2451	R2451DL	R2451DL	R2453	R2453DL	R2453DL
	Dilution Factor	200	1	10	200	1	10	400	1	20	200
	Lab MDL / Lab RL	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag
SW7131A (total mg)											
Cadmium	0.00002 / 0.0001		0.0028 R	0.0056 J		0.00271 R	0.0087 J	0.0087 J	0.00354 R	0.0078 J	
SW7421 (total mg)											
Lead	0.00007 / 0.0005	0.97 J	0.01677 R		0.85 J	0.01644 R		1.11 J	0.02162 R		5.8 J

	Sample ID	Bldg40-B7	Bldg40-B7	Bldg40-B7	Bldg40-B8	Bldg40-B8	Bldg40-B8	Bldg40-B9	Bldg40-B9	Bldg40-B9	Bldg40-B10
	Sample Date	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00
		SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
		N	N	N	N	N	N	N	N	N	N
	Laboratory ID	R2454	R2454DL	R2454DL	R2455	R2455DL	R2455DL	R2456	R2456DL	R2456DL	R2457
	Dilution Factor	1	10	200	1	10	400	1	10	200	1
	Lab MDL / Lab RL	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag
SW7131A (total mg)											
Cadmium	0.00002 / 0.0001	0.00226 R	0.0051 J		0.0024 R	0.0065 J		0.00245 R	0.0087 J		0.00236 R
SW7421 (total mg)											
Lead	0.00007 / 0.0005	0.01601 R		0.9 J	0.01651 R		1.52 J	0.01648 R		0.49 J	0.01519 R

	Sample ID	Bldg40-B10	Bldg40-B10	Bldg40-Blank B
	Sample Date	09/18/00	09/18/00	09/18/00
		SW	SW	SW
		N	N	N
	Laboratory ID	R2457DL	R2457DL	R2458
	Dilution Factor	20	200	1
	Lab MDL / Lab RL	Result Flag	Result Flag	Result Flag
SW7131A (total mg)				
Cadmium	0.00002 / 0.0001	0.0082 J		0.00002 U
SW7421 (total mg)				
Lead	0.00007 / 0.0005		0.64 J	0.00007 U

Data Qualifiers
J The analyte was positively identified, the quantitation is an estimation.
U The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.
F The analyte was positively identified, but the associated numerical value is below the RL.
R The data are unusable due to deficiencies in the ability to analyze the sample and meet the QC criteria.

Table ...ng 40-1C
Analytical Results for Semivolatile Organic Compounds
Swipe Samples at the Building 40 Container Storage Area (TNRCC 001)

Sample ID		Bldg40-C1	Bldg40-C1	Bldg40-C2	Bldg40-C2	Bldg40-C3	Bldg40-C3	Bldg40-C4	Bldg40-C4	Bldg40-C5	Bldg40-C5	Bldg40-C5	Bldg40-C5	Bldg40-C6	Bldg40-C6	Bldg40-C7	Bldg40-C7	Bldg40-C8	Bldg40-C8	Bldg40-C9	Bldg40-C9	Bldg40-C10	Bldg40-C10	Bldg40-Blank	Bldg40-Blank
Sample Date		09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00	09/18/00
		SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
		N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	FD1	FD1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1	N1
Lab ID		R2459	R2459	R2460	R2460	R2461	R2461	R2462	R2462	R2463	R2463	R2464	R2464	R2465	R2465	R2466	R2466	R2467	R2467	R2468	R2468	R2469	R2469	R2470	R2470
Dilution Factor		1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Lab RL		Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag
SVOCs, SW8270C (total ug)																									
Acenaphthene	10.	0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U	
Acenaphthylene	10.	0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U	
Anthracene	10.	0.13 U		0.13 U		0.13 U		0.13 U		0.13 U		0.13 U		0.13 U		0.13 U		0.13 U		0.13 U		0.13 U		0.13 U	
Benzo(a)anthracene	10.	0.05 U		0.05 U		0.05 U		0.05 U		0.05 U		0.05 U		0.05 U		0.05 U		0.05 U		0.05 U		0.05 U		0.05 U	
Benzo(a)pyrene	10.	0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U	
Benzo(b)fluoranthene	10.	0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U	
Benzo(g,h,i)perylene	10.	0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U	
Benzoic acid	50.	4.28 U		4.28 U		4.28 U		4.28 U		4.28 U		4.28 U		4.28 U		4.28 U		4.28 U		4.28 U		4.28 U		4.28 U	
Benzyl alcohol	10.	0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U	
Bis(2-chloroethoxy)methane	10.	0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U	
Bis(2-chloroethyl)ether	10.	0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U	
Bis(2-chloroisopropyl)ether	10.	0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U	
Bis(2-ethylhexyl)phthalate	10.	1.3 F		2.5 F		2.8 F		2.4 F		3. F		2.8 F		3.5 F		1.7 F		1.8 F		1.8 F		1.9 F		2.7 F	
Bromophenyl phenyl ether, 4-	10.	0.14 U		0.14 U		0.14 U		0.14 U		0.14 U		0.14 U		0.14 U		0.14 U		0.14 U		0.14 U		0.14 U		0.14 U	
Butylbenzylphthalate	10.	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U	
Chloro-3-methylphenol, 4-	10.	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U	
Chloroaniline, 4-	10.	0.17 U		0.17 U		0.17 U		0.17 U		0.17 U		0.17 U		0.17 U		0.17 U		0.17 U		0.17 U		0.17 U		0.17 U	
Chloronaphthalene, 2-	10.	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U	
Chlorophenol, 2-	10.	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U	
Chlorophenyl phenyl ether, 4-	10.	0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U	
Chrysene	10.	0.05 U		0.05 U		0.05 U		0.05 U		0.05 U		0.05 U		0.05 U		0.05 U		0.05 U		0.05 U		0.05 U		0.05 U	
Di-n-butylphthalate	10.	0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		1.2 F		1.2 F	
Di-n-octylphthalate	10.	0.35 U		0.35 U		0.35 U		0.35 U		0.35 U		0.35 U		0.35 U		0.35 U		0.35 U		0.35 U		0.35 U		0.35 U	
Dibenz(a,h)anthracene	10.	0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U	
Dibenzofuran	10.	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U	
Dichlorobenzene, 1,3-	10.	0.14 U		0.14 U		0.14 U		0.14 U		0.14 U		0.14 U		0.14 U		0.14 U		0.14 U		0.14 U		0.14 U		0.14 U	
Dichlorobenzene, 1,4-	10.	0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U	
Dichlorobenzidine, 3,3'-	20.	0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U	
Dichlorophenol, 2,4-	50.	0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U		0.07 U	
Diethylphthalate	10.	0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U	
Dimethylphenol, 2,4-	10.	0.17 U		0.17 U		0.17 U		0.17 U		0.17 U		0.17 U		0.17 U		0.17 U		0.17 U		0.17 U		0.17 U		0.17 U	
Dimethylphthalate	10.	1. F		2. F		2.8 F		0.06 U		2.3 F		1.9 F		2.8 F		2.4 F		1.3 F		3.1 F		0.06 U		1.2 F	
Dinitro-2-methylphenol, 4,6-	50.	0.59 U		0.59 U		0.59 U		0.59 U		0.59 U		0.59 U		0.59 U		0.59 U		0.59 U		0.59 U		0.59 U		0.59 U	
Dinitrophenol, 2,4-	50.	2.36 U		2.36 U		2.36 U		2.36 U		2.36 U		2.36 U		2.36 U		2.36 U		2.36 U		2.36 U		2.36 U		2.36 U	
Dinitrotoluene, 2,4-	10.	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U	
Dinitrotoluene, 2,6-	10.	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U	
Fluoranthene	10.	0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U	
Fluorene	10.	0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U	
Hexachlorobenzene	10.	0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U	
Hexachlorobutadiene	10.	0.16 U		0.16 U		0.16 U		0.16 U		0.16 U		0.16 U		0.16 U		0.16 U		0.16 U		0.16 U		0.16 U		0.16 U	
Hexachlorocyclopentadiene	10.	0.32 U		0.32 U		0.32 U		0.32 U		0.32 U		0.32 U		0.32 U		0.32 U		0.32 U		0.32 U		0.32 U		0.32 U	
Hexachloroethane	10.	0.15 U		0.15 U		0.15 U		0.15 U		0.15 U		0.15 U		0.15 U		0.15 U		0.15 U		0.15 U		0.15 U		0.15 U	
Indeno(1,2,3-cd)pyrene	10.	0.06 U		0.06 U		0.06 U		0.06 U		0.06 U		0.06 U		0.06 U		0.06 U		0.06 U		0.06 U		0.06 U		0.06 U	
Isophorone	10.	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U	
Methylnaphthalene, 2-	10.	0.06 U		0.06 U		0.06 U		0.06 U		0.06 U		0.06 U		0.06 U		0.06 U		0.06 U		0.06 U		0.06 U		0.06 U	
Methylphenol, 2- (Cresol, o-)	10.	0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U	
Methylphenol, 4- (Cresol, p-)	10.	0.18 U		0.18 U		0.18 U		0.18 U		0.18 U		0.18 U		0.18 U		0.18 U		0.18 U		0.18 U		0.18 U		0.18 U	
Naphthalene	10.	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U	
Nitroaniline, 2-	50.	0.13 U		0.13 U		0.13 U		0.13 U		0.13 U		0.13 U		0.13 U		0.13 U		0.13 U		0.13 U		0.13 U		0.13 U	
Nitroaniline, 3-	50.	0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U		0.1 U	
Nitroaniline, 4-	50.	0.93 U		0.93 U		0.93 U		0.93 U		0.93 U		0.93 U		0.93 U		0.93 U		0.93 U		0.93 U		0.93 U		0.93 U	
Nitrobenzene	10.	0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U	
Nitrophenol, 2-	10.	0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U	
Nitrophenol, 4-	50.	0.91 U		0.91 U		0.91 U		0.91 U		0.91 U		0.91 U		0.91 U		0.91 U		0.91 U		0.91 U		0.91 U		0.91 U	
Nitroso-di-n-propylamine, N-	10.	0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U	
Nitrosodiphenylamine, N-	10.	0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U	
Pentachlorophenol	50.	2.44 U		2.44 U		2.44 U		2.44 U		2.44 U		2.44 U		2.44 U		2.44 U		2.44 U		2.44 U		2.44 U		2.44 U	
Phenanthrene	10.	0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U		0.08 U	
Phenol	10.	0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U		0.12 U	
Pyrene	10.	0.04 U		0.04 U		0.04 U		0.04 U		0.04 U		0.04 U		0.04 U		0.04 U		0.04 U		0.04 U		0.04 U		0.04 U	
Trichlorobenzene, 1,2,4-	10.	0.16 U		0.16 U		0.16 U		0.16 U		0.16 U		0.16 U		0.16 U		0.16 U		0.16 U		0.16 U		0.16 U		0.16 U	
Trichlorophenol, 2,4,5-	10.	0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U		0.09 U	
PERCENT, TOTAL UG																									
Trichlorophenol, 2,4,5-	50.		91. U		97. U		92. U		89. U		105. U		97. U		95. U		96. U		99. U		99. U		102. U		100. U

Data Qualifiers
J The analyte was positively identified, the quantitation is an estimation.
U The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.
F The analyte was positively identified, but the associated numerical value is below the RL.
R The data are unusable due to deficiencies in the ability to analyze the sample and meet the QC criteria.

Table Building 40-2
Analytical Results for Cadmium and Lead Chip samples at the Building 40 Container Storage Area (TCEQ 001)

	Sample ID	BLDG40-CHIP1					BLDG40-CHIP2					BLDG40-CHIP3					BLDG40-CHIP4					BLDG40-CHIP4				
	Sample Date	06/13/02					06/13/02					06/13/02					06/13/02					06/13/02				
		SO					SO					SO					SO					SO				
		N					N					N					FD					N				
	Laboratory ID	AP34794					AP34796					AP34797					AP34798					AP34799				
		Result	MDL	RL	Flags	Dilution	Result	MDL	RL	Flags	Dilution	Result	MDL	RL	Flags	Dilution	Result	MDL	RL	Flags	Dilution	Result	MDL	RL	Flags	Dilution
D2216	Moisture, Percent	0.90					0.90					0.90					1.20					1.10				
SW7131A	Cadmium (mg/kg)	1.84	0.10	1.00		10	0.28	0.01	0.10	M	1	1.41	0.10	1.00		10	5.68	0.20	2.00		20	4.08	0.20	2.00		20
SW7421	Lead (mg/kg)	209.19	13.00	50.00		100	380.50	13.00	50.00	M	100	71.36	13.00	50.00		100	126.87	13.00	50.00		100	350.10	13.00	50.00		100

Data Qualifiers

J The analyte was positively identified, the quantitation is an estimation.

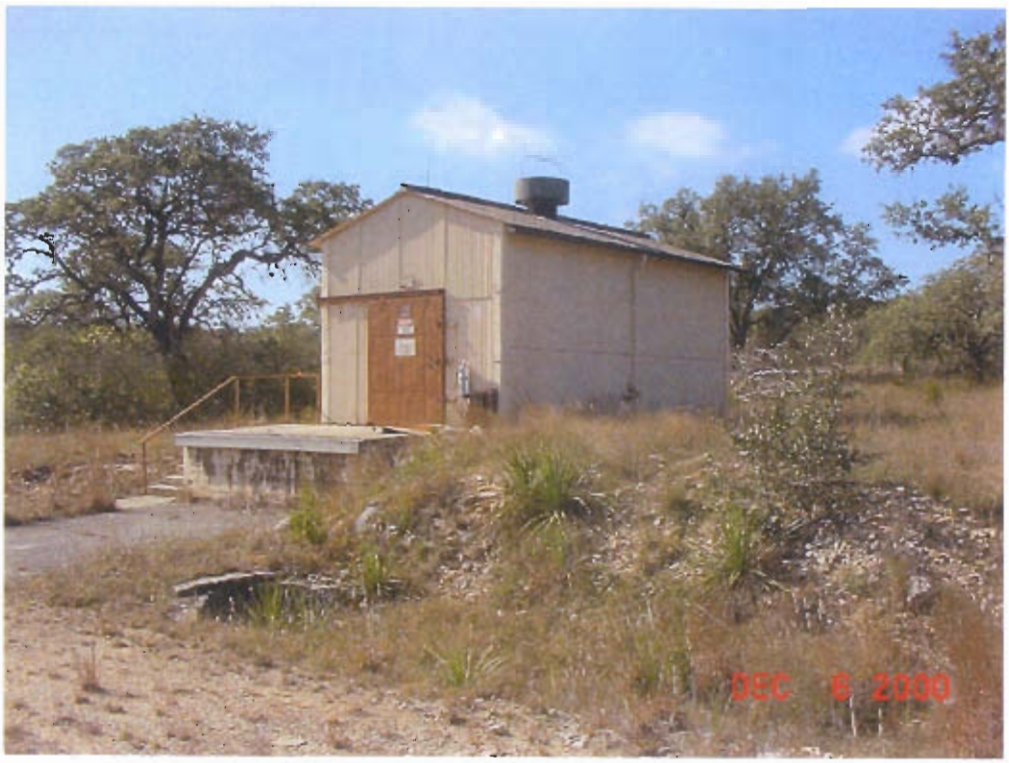
U The analyte was analyzed for, but not detected. The associated numerical value is at or below the MDL.

F The analyte was positively identified, but the associated numerical value is below the RL.

R The data are unusable due to deficiencies in the ability to analyze the sample and meet the QC criteria.

M

APPENDIX A
PHOTOGRAPHS



Building 40 exterior

Interior floor of Building 40 after pressure washing

Interior floor of Building 40 with two of the chip sample locations

APPENDIX B

DATA VALIDATION REPORTS

RL74 DATA VERIFICATION SUMMARY REPORT

for wipe samples collected from Building 40

CAMP STANLEY STORAGE ACTIVITY

BOERNE, TEXAS

Data verification by: Michele Wolfe and Katherine LaPierre

INTRODUCTION

The following data verification summary report covers environmental wipe samples and associated field quality control (QC) samples collected from Camp Stanley Storage Activity under RL74 on September 18, 2000. Samples in the following laboratory Sample Delivery Group (SDG) were analyzed for semivolatile organic compounds (SVOCs), pesticides, and metals (cadmium and lead):

6886

Field quality control samples collected were trip blank and field duplicates. No ambient blanks were collected for this project. During the initiation of this project, it was determined that ambient blanks were not necessary due to the absence of a source at the site. All field quality control samples were analyzed for the same parameters as their associated samples.

All samples were collected by Parsons Engineering Science (Parsons ES) and analyzed by O'Brien & Gere Laboratories, Inc. following the procedures outlined in the AFCEE QAPP, version 3.0.

It should be noted that, due to the unusual matrix of the samples (wipe samples), the samples were extracted and prepared differently by each area of the laboratory. Parsons communicated with OBG during the data review process regarding the inconsistent treatment of the samples. After receiving the laboratory response and thoroughly reviewing the data, Parsons supports the technical quality of the data. For additional details regarding the sample preparation procedures used by the laboratory, please refer to the letter from O'Brien & Gere Laboratories dated January 8, 2001, that is included as an addendum to this report. All corrected pages referred to in the addendum are included in the final data package.

EVALUATION CRITERIA

The data submitted by the laboratory has been reviewed and verified following the guidelines outlined in the AFCEE QAPP, version 3.0. The information reviewed in the data packages included sample results; laboratory quality control results; case narrative; raw data; and chain-of-custody forms. The analyses and findings presented in this report

are based on the reviewed information, and whether guidelines in the AFCEE QAPP were met.

SEMIVOLATILES

General

This SDG consisted of twelve (12) samples, including ten (10) environmental wipe samples, one field duplicate and one wipe blank. The samples were collected on September 18, 2000 and were analyzed for the full AFCEE list of semivolatile organic compounds (SVOCs).

The SVOC analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 8270C. Except as indicated in this report, all samples in this SDG were analyzed following the procedures outlined in the AFCEE QAPP.

Accuracy

Accuracy was evaluated using the percent recovery (%R) results for the LCS samples and surrogate spikes. No MS/MSD was analyzed in association with this SDG.

All LCS and surrogate %Rs were within acceptance criteria.

Precision

Precision was evaluated using the Relative Percent Difference (RPD) results obtained from the field duplicate analyte values. Sample BLDG40-C5 FD was collected and analyzed as a field duplicate of sample BLDG40-C5.

All field duplicate RPDs were within acceptance criteria.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All SVOC results for the samples in this SDG were considered usable. The completeness for the SVOC portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the chain-of-custody procedures to those described in the AFCEE QAPP;
- Comparing actual analytical procedures to those described in the AFCEE QAPP;
- Evaluating holding times; and

- Examining field and laboratory blanks for cross contamination of samples during collection or analysis.

All samples in this SDG were analyzed following chain-of-custody forms (COCs) and analytical procedures described in the AFCEE QAPP. All samples were prepared and analyzed with the holding time required by the method.

- All instrument performance check criteria were met.
- All initial calibration criteria were met.
- All initial and continuing calibration verification criteria were met.
- All second source verification criteria were met.
- All internal standard criteria were met for the continuing calibrations. There were several samples that had non-compliant internal standards. SW846 Method 8270C (section 7.4.7) specifies that the continuing calibration internal standard areas be compared to the initial calibration internal standard data. However, there is no mention of checking the internal standard area counts for samples. Therefore, no corrective action was taken for the samples with non-compliant internal standards.

There was one method blank and one wipe blank associated with the SVOC analyses in this SDG. All blanks were free of SVOCs above the RL.

PESTICIDES

General

This SDG consisted of twelve (12) samples, including ten (10) environmental wipe samples, one field duplicate and one wipe blank. The samples were collected on September 18, 2000 and were analyzed for the full AFCEE list of pesticides.

The pesticide analyses were performed using USEPA SW846 Method 8081. Except as indicated in this report, all samples in this SDG were analyzed following the procedures outlined in the AFCEE QAPP.

Accuracy

Accuracy was evaluated using the %R results for the LCS samples (LCS and LCSD) and surrogate spikes. No MS/MSD was analyzed in association with this SDG.

All LCS %Rs were within acceptance criteria.

All surrogate %Rs were within acceptance criteria except for the following:

Sample ID	Surrogate	%R	QC Criteria

BLDG40-A5 FD	TCMX	188	35-135
	DCB	186	25-143
BLDG40-A6	TCMX	0	35-135
	DCB	0	25-143

O'Brien & Gere Laboratories notified Parsons' chemist when they noticed the non-compliant %Rs for these samples. The laboratory believed that sample BLDG40-A5 FD was mistakenly double spiked with the surrogate solution and sample BLDG40-A6 was not spiked. After investigation of chromatograms before and after these two injections, results of wipe samples taken from near-by areas, results of a second injection of sample BLDG40-A6 extract, comparison between data of BLDG40-A5 FD and its parent sample, and discussion with AFCEE and Informatics, Parsons does believe these spiking mistakes took place and, therefore, no "R" flags were necessary. Data for both samples was considered acceptable and usable for the purposes of this sampling event.

Precision

Precision was evaluated using the Relative Percent Difference (RPD) results obtained from the field duplicate analyte values. Sample BLDG40-A5 FD was collected and analyzed as a field duplicate of sample BLDG40-A5.

All field duplicate RPDs were within acceptance criteria.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All pesticide results for the samples in this SDG were considered usable. The completeness for the pesticide portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the chain-of-custody procedures to those described in the AFCEE QAPP;
- Comparing actual analytical procedures to those described in the AFCEE QAPP;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during collection or analysis.

All samples in this SDG were analyzed following chain-of-custody forms (COCs) and analytical procedures described in the AFCEE QAPP. All samples were prepared and analyzed with the holding time required by the method.

- All instrument performance check criteria were met.
- All initial calibration criteria were met.
- There were sixteen (16) injections between two continuing calibration verifications (CCVs). The AFCEE QAPP requires that no more than ten (10) injections be performed between two CCVs. However, SW846 method 8081 does allow up to twenty (20) injections between CCVs. Approval was received from AFCEE regarding this situation and no corrective action was necessary.
- All second source verification criteria were met.

There was one method blank and one wipe blank associated with the pesticide analyses in this SDG. All blanks were free of pesticides above the RL.

CADMIUM

General

This SDG consisted of twelve (12) samples, including ten (10) environmental wipe samples, one field duplicate and one wipe blank. The samples were collected on September 18, 2000 and were analyzed for cadmium.

The cadmium analyses were performed using USEPA SW846 Method 7131A. Except as indicated in this report, all samples in this SDG were analyzed following the procedures outlined in the AFCEE QAPP.

Accuracy

Accuracy was evaluated using the %R results for the LCS samples (LCS and LCSD). No MS/MSD was analyzed in association with this SDG.

All LCS %Rs were within acceptance criteria.

Precision

Precision was evaluated using the Relative Percent Difference (RPD) results obtained from the field duplicate analyte values. Sample BLDG-B5 FD was collected and analyzed as a field duplicate of sample BLDG-B5.

The field duplicate RPD was within acceptance criteria.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All cadmium results for the samples in this SDG were considered usable. The completeness for the cadmium portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the chain-of-custody procedures to those described in the AFCEE QAPP;
- Comparing actual analytical procedures to those described in the AFCEE QAPP;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during collection or analysis.

All samples in this SDG were analyzed following chain-of-custody forms (COCs) and analytical procedures described in the AFCEE QAPP. All samples were prepared and analyzed with the holding time required by the method.

- All initial calibration criteria were met.
- All initial and continuing calibration verification criteria were met.
- All second source calibration criteria were met.
- The dilution test criteria failed to meet criteria as follows:

Sample ID	Analyte	%D	QC Criteria
Bldg40-B10	Cadmium	15.9	±10%

The cadmium result in the associated samples was considered estimated and flagged "J".

- All recovery test criteria were met.

There was one method blank, one wipe blank and several calibration blanks associated with the cadmium analyses in this SDG. All blanks were free of any cadmium above the RL.

The laboratory MDL study for cadmium was run more than 12 months prior to the date the samples in this SDG were analyzed. The new MDLs, analyzed in February 2001, closely matched the previous MDLs. Per AFCEE's recommendation, the data was considered usable and no qualifiers were applied as a result of the expired MDLs.

LEAD

General

This SDG consisted of twelve (12) samples, including ten (10) environmental wipe samples, one field duplicate and one wipe blank. The samples were collected on September 18, 2000 and were analyzed for lead.

The lead analyses were performed using USEPA SW846 Method 7421. Except as indicated in this report, all samples in this SDG were analyzed following the procedures outlined in the AFCEE QAPP.

Accuracy

Accuracy was evaluated using the %R results for the LCS samples (LCS and LCSD). No MS/MSD was analyzed in association with this SDG.

All LCS %Rs were within acceptance criteria.

Precision

Precision was evaluated using the Relative Percent Difference (RPD) results obtained from the field duplicate analyte values. Sample BLDG40-B5 FD was collected and analyzed as a field duplicate of sample BLDG40-B5.

The field duplicate RPD failed to meet acceptance criteria as follows:

Field Duplicate Pair	Analyte	RPD	QC Criteria
BLDG40-B5 / FD	Lead	26.5%	25%

The lead result in the associated samples was considered estimated and flagged "J".

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All lead results for the samples in this SDG were considered usable. The completeness for the lead portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the chain-of-custody procedures to those described in the AFCEE QAPP;
- Comparing actual analytical procedures to those described in the AFCEE QAPP;
- Evaluating holding times; and
- Examining field and laboratory blanks for cross contamination of samples during collection or analysis.

All samples in this SDG were analyzed following the chain-of-custody forms (COCs) and analytical procedures described in the AFCEE QAPP. All samples were prepared and analyzed with the holding time required by the method.

- All initial calibration criteria were met.
- All continuing calibration criteria were met except for the following:

CCV ID	Analyte	%D	QC Criteria
CCV1	Lead	25.6	±20%

All lead results for the samples associated with this CCV were above calibration range and flagged "R". Therefore, no additional corrective action was necessary.

- All second source calibration criteria were met.
- All dilution test criteria were met.
- All recovery test criteria were met.

There was one method blank, one wipe blank and several calibration blanks associated with the lead analyses in this SDG. All blanks were free of any lead above the RL.

The laboratory MDL study for lead was run more than 12 months prior to the date the samples in this SDG were analyzed. The new MDLs, analyzed in February 2001, closely matched the previous MDLs. Per AFCEE's recommendation, the data was considered usable and no qualifiers were applied as a result of the expired MDLs.

RL74 DATA VERIFICATION SUMMARY REPORT
for concrete chip samples collected from Building 40
CAMP STANLEY STORAGE ACTIVITY
BOERNE, TEXAS

Data Verification by Tammy Chang and Katherine LaPierre
Parsons - Austin

INTRODUCTION

The following data verification summary report covers five concrete chip samples collected from Building 40 at Camp Stanley Storage Activity (CSSA) under RL74 on June 13, 2002. Samples in the following laboratory Sample Delivery Group (SDG) were analyzed for cadmium and lead:

38612

There were no field quality control samples collected in association with this SDG.

All samples were collected by Parsons and analyzed by APPL, Inc. following the procedures outlined in the AFCEE QAPP, version 3.0.

EVALUATION CRITERIA

The data submitted by the laboratory has been reviewed and verified following the guidelines outlined in the AFCEE QAPP, version 3.0. Information reviewed in the data packages includes sample results; laboratory quality control results; case narrative; raw data; and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the AFCEE QAPP were met.

CADMIUM

General

This SDG consisted of seven (7) samples, including five concrete chip samples, one field duplicate and one MS/MSD pair. The samples were collected on June 13, 2002 and were analyzed for cadmium.

The cadmium analyses were performed using United States Environmental Protection Agency (USEPA) SW846 Method 7131A. All samples were analyzed within the holding time required by the method and following the procedures outlined in the AFCEE QAPP, version 3.0.

Accuracy

Accuracy was evaluated using the percent recovery (%R) obtained from the MS/MSD and LCS/LCSD samples. Parsons assigned sample BLDG40-Chip2 as the MS/MSD for this SDG.

The LCS/LCSD %Rs were within acceptance criteria. The MS/MSD %Rs failed to meet acceptance criteria at 53.5% and 306.7% respectively. All cadmium results in this SDG were flagged "M" due to the non-complaint MS/MSD recoveries.

Precision

Precision was evaluated using the Relative Percent Difference (RPD) obtained from the LCS/LCSD and MS/MSD results, and the field duplicate concentrations. Sample BLDG40-Chip4 was collected in duplicate and the second sample was analyzed as a field duplicate.

The LCS/LCSD RPD was within acceptance criteria. The MS/MSD RPD failed to meet acceptance criteria (RPD $\leq$ 25) at 69.1%. The field duplicate failed to meet acceptance criteria (RPD $\leq$ 25) at 93.6%. All cadmium results were previously flagged "M" due to the non-compliant MS/MSD recoveries. No additional corrective action was necessary since the "M" flag supercedes the "J" flag in the AFCEE QAPP flag hierarchy.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the AFCEE QAPP;
- Comparing actual analytical procedures to those described in the AFCEE QAPP;
- Evaluating holding times; and
- Examining laboratory blanks for cross contamination of samples during analysis.

Samples were analyzed following COC and the analytical procedures described in the AFCEE QAPP. Samples were prepared and analyzed within the holding time required by the method.

- All initial calibration criteria were met.

- All calibration verification criteria were met.
- All second source verification criteria were met. The ICV was prepared using a second source standard.
- A dilution test was analyzed on sample BLDG40-Chip2. The dilution test was not applicable because the diluted result was below the RL.
- A recovery test was analyzed on sample BLDG40-Chip2. The recovery test failed to meet criteria (85-115%) with a %R of 69.7%. All cadmium results were previously flagged "M" due to the non-compliant MS/MSD recoveries. No additional corrective action was necessary since the "M" flag supercedes the "J" flag in the AFCEE QAPP flag hierarchy.

There was one method blank and several calibration blanks associated with the cadmium analyses in this SDG. All blanks were free of any cadmium at or above the RL.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All cadmium results for the samples in this SDG were considered usable. The completeness for the cadmium portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

LEAD

General

This SDG consisted of seven (7) samples, including five concrete chip samples, one field duplicate and one MS/MSD pair. The samples were collected on June 13, 2002 and were analyzed for lead.

The lead analyses were performed using USEPA SW846 Method 7421. All samples were analyzed within the holding time required by the method and following the procedures outlined in the AFCEE QAPP, version 3.0.

Accuracy

Accuracy was evaluated using the %R obtained from the MS/MSD and LCS/LCSD samples. Parsons assigned sample BLDG40-Chip2 as the MS/MSD for this SDG.

The LCS/LCSD %Rs were within acceptance criteria. The MS/MSD %Rs failed to meet acceptance criteria at -6592% and -5667% respectively. The non-compliant recoveries were attributed to the relatively low spike amount compared to the native concentration of lead in the parent sample. All lead results for the samples in this SDG were flagged "M" due to the non-compliant MS/MSD recoveries.

Precision

Precision was evaluated using the RPD obtained from the LCS/LCSD and MS/MSD results and the field duplicate concentrations. Sample BLDG40-Chip4 was collected in duplicate and the second sample was analyzed as a field duplicate.

All LCS/LCSD and MS/MSD RPDs were within acceptance criteria. The field duplicate failed to meet acceptance criteria (RPD ≤ 25) at 93.6%. All lead results were previously flagged "M" due to the non-compliant MS/MSD recoveries. No additional corrective action was necessary since the "M" flag supercedes the "J" flag in the AFCEE QAPP flag hierarchy.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the AFCEE QAPP;
- Comparing actual analytical procedures to those described in the AFCEE QAPP;
- Evaluating holding times; and
- Examining laboratory blanks for cross contamination of samples during analysis.

Samples were analyzed following COC and the analytical procedures described in the AFCEE QAPP. Samples were prepared and analyzed within the holding times required for the analysis.

- All initial calibration criteria were met.
- All calibration verification criteria were met.
- All second source verification criteria were met. The ICV was prepared using a second source standard.
- A dilution test was analyzed on sample BLDG40-Chip2, using the 100x dilution. The %D met acceptance criteria at 1.3%.
- A recovery test was not required since the dilution test met criteria.

There was one method blank and several calibration blanks associated with the lead analyses in this SDG. All blanks were free of any lead above the RL.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All lead results for the samples in this SDG were considered usable. The completeness for the lead portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

DATA VERIFICATION SUMMARY REPORT

for rinsate sample collected from Building 40

CAMP STANLEY STORAGE ACTIVITY

BOERNE, TEXAS

Data Verification by: Jim Taylor and Tammy Chang
Parsons - Austin

INTRODUCTION

The following data verification summary report covers an aqueous rinsate sample collected from Camp Stanley Storage Activity (CSSA) Building 40 on July 21, 2003. The sample in the following Sample Delivery Group (SDG) was analyzed for cadmium and lead:

42179

No field quality control (QC) samples were collected in association with this SDG.

The sample was collected by Parsons and analyzed by APPL, Inc. following the procedures outlined in the Statement of Work and AFCEE QAPP, version 3.0. The sample was to be analyzed for lead, cadmium, semivolatile organic compounds (SVOC) and pesticides but insufficient unpreserved sample was collected in the field to perform the SVOC and pesticide analyses causing the analyses to be cancelled. Sample was only analyzed for lead and cadmium.

The cooler associated with this SDG was received by the laboratory at a temperature of 3.0° C which is within the 2-6° C range recommended by the QAPP.

EVALUATION CRITERIA

The data submitted by the laboratory has been reviewed and verified following the guidelines outlined in the AFCEE QAPP, version 3.0. Information reviewed in the data packages included sample results; laboratory control sample and duplicate results; method blanks; calibrations; case narrative; raw data; and chain-of-custody (COC) forms. The analyses and findings presented in this report are based on the reviewed information, and whether guidelines in the AFCEE QAPP, version 3.0, were met.

Graphite Furnace Metals

General

The graphite furnace (GFAA) metals portion of this SDG consisted of one (1) rinsate sample. The sample was collected on July 21, 2003 and was analyzed for cadmium and lead.

The cadmium analysis was performed using USEPA SW846 Method 7131A and the lead analysis was performed using USEPA SW846 Method 7421. The sample in this SDG was analyzed following the procedures outlined in the AFCEE QAPP. The sample was prepared and analyzed within the holding time required by the method.

Accuracy

Accuracy was evaluated using the %Recovery (%R) obtained from the LCS and LCSD samples. Both %Rs were within acceptance criteria for the cadmium and lead analyses.

Precision

Precision was evaluated using the RPD obtained from the LCS/LCSD results.

Both LCS/LCSD RPDs were within acceptance criteria for the cadmium and lead analyses.

Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents actual site conditions. Representativeness has been evaluated by:

- Comparing the COC procedures to those described in the AFCEE QAPP;
- Comparing actual analytical procedures to those described in the AFCEE QAPP;
- Evaluating holding times; and
- Examining laboratory blanks for cross contamination of samples during analysis.

The sample in this SDG was analyzed following the COC and the analytical procedures described in the AFCEE QAPP. The sample was prepared and analyzed within the holding times required by the method.

- All initial calibration criteria were met.
- All initial and continuing calibration verification criteria were met.
- All second source calibration criteria were met. The ICVs were prepared with secondary source standards.

- The dilution test was analyzed on the sample and was not applicable because all metals were below the RL in the diluted run.

The post digestion spike (PDS) was analyzed for cadmium and lead. All recoveries were within acceptance criteria, except for cadmium. The cadmium recovery for the PDS was 75%, which is below the ACFEE QAP criteria of 85-115%. The laboratory prepared the spiked the sample digestate and then analyzed it at a 1:20 dilution. The laboratory ran the diluted the PDS because they suspected the sample as having a concentration of cadmium that would exceed the calibration range of the instrument. Normally the sample would be "J" flagged but the "J" flag was not applied because the result was already flagged with "F" and "F" supercedes the "J" flag in the AFCEE QAPP flag hierarchy.

There was one method blank and several calibration blanks analyzed in association with each of the two GFAA metals analyses in this SDG. All blanks were free of any target metals at or above the RL.

Completeness

Completeness has been evaluated by comparing the total number of samples collected with the total number of samples with valid analytical data.

All GFAA metals results for the samples in this SDG were considered usable. The completeness for the GFAA metals portion of this SDG is 100%, which meets the minimum acceptance criteria of 90%.

PORTAGE

Portage Environmental, Inc.
901 N.E. Loop 410,
Suite 700
San Antonio, TX 78209
Phone: (210) 829-4904
Fax: (210) 805-7478

www.portageenv.com

Native American Owned

8 (a) Certified SDB

2 September 2003

Ms. Tammy Chang
Senior Scientist
Parsons Engineering Science, Inc.
8000 Center Park Drive
Suite 200
Austin, TX 78754-5140

Dear Ms. Chang:

Ms. Dupriest has directed Portage Environmental, Inc. to forward approval letters to Parsons along with technical review comments.

Portage reviewed data package RL74 #17 that contained Lead and Cadmium results for one water sample, Building 40 rinsate. The calibration and quality control parameters are acceptable for both the analyses. The data are acceptable.

If you have any questions, please contact me by telephone at 210-805-7471 or e-mail at jfernando@portageenv.com.

Sincerely,

Joseph Fernando, Ph.D.
Senior Scientist

Enclosure

Ms. Teri Dupriest, AFCEE/ERD (w enclosures)
Mr. Edward Brown, AFCEE/ERC (w enclosures)
Mr. Brian Murphy, Environmental Officer, CSSA (w enclosures)
Portage Files (w enclosures)

CAMP STANLEY STORAGE ACTIVITY
BLDG 40 Rinsate
RL74-#17
21 July 2003

SDG 42179

Prime Contractor: Parsons Engineering
8000 Centre Park Drive, Suite 200
Austin, TX 78754

Laboratory: APPL, Inc.
4955 West Swift
Fresno, CA 93722

Validated by: Willie Sekula Reviewed by: Joe Fernando Date: 2 September 2003

Field Sample:

Field ID	Lab ID	Type	Matrix
BLDG 40 Rinsate 1	AP54332	N	W

The sample was analyzed for cadmium by SW7131 and lead by SW7421.

Chain of Custody (COC)
The COC contained the appropriate signatures. No anomalies were noted.

Data Validation Report (DVR): The Air Force Center for Environmental Excellence (AFCEE) Quality Assurance Project Plan (QAPP) version 3.0 was used by the prime contractor for data validation. It was also used by Portage for the current review. No anomalies were noted in the DVR.

The rinseate sample contained 0.005 mg/L lead and 0.0002 mg/L cadmium. The reporting limit for lead is 0.005 mg/L. The reporting limit for cadmium is 0.001 mg/L.

SW7131 (Cadmium)

1. Case Narrative: No anomalies were noted.

2. Holding Time: Holding time was met.

3. Instrument Calibration:

Initial Calibration: The initial calibration met acceptance criteria.

Second-source Calibration Verification: The second-source calibration verification met acceptance criteria.

Calibration Verification: All calibration verifications met acceptance criteria.

4. Blank Summary

Method Blank: Cadmium was not detected above the reporting limit.

Calibration Blanks: No concentrations were detected above the reporting limit for cadmium.

5. Laboratory Control Sample: LCS/LCSD recoveries were within control limits.

6. Dilution Test/Post-digestion spike: The dilution test was not applicable since cadmium was detected at a concentration below the reporting limit. The post-digestion spike was out of control due to dilution of the spiked digestate. The associated sample result was flagged appropriately.

7. Reporting Limits: The reporting limit for cadmium was met.

8. Data Package Completeness: The data package was complete.

9. Summary: Data quality is acceptable.

SW7131 (Lead)

1. Case Narrative: No anomalies were noted.

2. Holding Time: Holding time was met.

3. Instrument Calibration:

Initial Calibration: The initial calibration met acceptance criteria.

Second-source Calibration Verification: The second-source calibration verification met acceptance criteria.

Calibration Verification: All calibration verifications met acceptance criteria.

4. Blank Summary

Method Blank: Lead was not detected above the reporting limit.

Calibration Blanks: No concentrations were detected above the reporting limit for lead.

5. Laboratory Control Sample: LCS/LCSD recoveries were within control limits.

6. Dilution Test/Post-digestion spike: The dilution test was not applicable because lead was detected at a concentration below the reporting limit. The post-digestion spike recovery for lead was in control.

7. Reporting Limits: The reporting limit for lead was met.

8. Data Package Completeness: The data package was complete.

9. Summary: Data quality is acceptable

APPENDIX C

LABORATORY ANALYTICAL DATA PACKAGES

(not included in this report, please refer to the CSSA website www.stanley.army.mil for viewing these data packages)