Summary

Two drums were delivered to the Edgewood Chemical Biological Center (ECBC) Chemical Transfer Facility (CTF) on Sunday, June 16, 2002, at 2020 hours.

The drums were unpacked in the CTF on Wednesday afternoon, June 19, 2002. Based on the chain of custody documents, the drums contained the following items: 10 pairs of solid sorbent sample tubes; 7 functioned Drager sample tubes; 16 swipe samples; 28 soil samples; 3 concrete samples; 4 wood samples; 2 water samples and 7 functioned M256 kits. Photographs of many of the items are available by request.

Upon examination of the items and in consideration of the need for immediate evaluation, a decision was made to concentrate analysis on the solid (soil, wood, concrete) and solid sorbent tubes. To that end, the ten sets of solid sorbent tubes were delivered to the Monitoring Branch Laboratory on Wednesday afternoon, June 19, 2002 at 1605 hours. At the same time, technicians prepared those samples listed as soil, wood and concrete for low-level monitoring as well.

Four out of the ten pairs of tubes contained only Tenax packing (samples 001AA, 003AC, 005AC, and 009AA). These tubes were analyzed for nerve agents Tabun (GA), Sarin (GB), Soman (GD), Cyclohexyl methylphosphonofluoridate (GF), vesicant Bis-(2-chloroethyl)sulfide or Distilled Mustard (HD) and the Mustard breakdown product 1,4-Dithiane.

Analyses of GA, GB, GD, GF, HD, and 1,4-Dithiane were performed utilizing a gas chromatogram equipped with a mass spectrometer (GC/MS) in the Selected Ion Monitoring (SIM) mode. These analyses were performed according to the Monitoring Branch Quality Control Plan for Chemical Agent Standard Reference Material (CASARM), Revision 6, June 2000. **There were no detections of any of the aforementioned compounds on these sample tubes** (results are reported in Table 1).

In order to provide possible identification of some of the non-CW materials detected, two samples were chosen to analyze by GC/MS Full Scan (003AC and 005AC). Sample 003AC contains mostly hydrocarbons, the largest peak being Toluene (5.6% of the total peak area). Other tentatively identified compounds (TICs) include phthalates or plasticizers (6.8%), Benzaldehyde (3.6%), Acetophenone (1.6%),Benzophenone (0.6%), Methyl salicylate (0.5%), Styrene (1.1%), Pyridine (1.9%), and Azulene (0.9%). Sample 005AC contains mostly hydrocarbons, the largest peak being Toluene (4.5% of the total peak area). Other TICs include Cellosolve (1%), Benzaldehyde (3.2%), Acetophenone (5.2%), Azulene (.3%), Methyl salicylate (0.4%), Benzothiazole (0.6%) and Benzophenone (0.5%).

Three pairs of tubes contained Carbonex multi-bed packing (samples 005AA, 008AA, and 013AC). As of this writing, one sample (sample 005AA) was analyzed by GC/MS Full Scan. Sample 005AA contains mostly hydrocarbons. TICs include Methyl cellosolve (2.6%), Cellosolve (7.5%), Butyl cellosolve (0.8%), Benzaldehyde (1.6%), Acetophenone (2.1%),

Methyl salicylate (0.4%), Benzoic acid (0.89%) and Benzophenone 0.5%). The remaining tubes will be analysed and reported in a subsequent final report.

Three sets of the tubes contained HayeSep packing (samples 004AC, 006AA, and 012AC). As of this writing, one sample, 012AC was analyzed by GC/MS Full Scan in order to identify possible industrial compounds on the tube. However, sample 012AC did not chromatograph well. There appeared to be no sample on the tube. No Full Scan results can be reported. The remaining tubes will be analysed and reported in a subsequent final report.

In order to obtain rapid results from the solid samples, they were each placed in a separate sealed bag and heated in order to volatilize contaminates. Upon completion of the heating cycle, the air contained within the bags was collected on a Tenax sorbent tube. This process is known as "headspacing" and was performed in accordance with the Monitoring Branch Quality Control plan. The sorbent tubes were
analyzed for GB, GD, HD, GF, and Lewisite (L) by GC/MS and for Ethyl-S-dimethylaminoethyl methylphosphonothiolate(VX) by GC/FPD. **There were no detections for these CW compounds.** Results are reported in Table 1.

As a means to identify possible non-CW contaminants in the solid samples, several samples were also analyzed by GC/MS Full Scan with the following results:

Sample Number 0206190622-M01 (2090- Wood): Largely hydrocarbons, Azulene (1.5%), Butylated Hydroxytoluene –BHT (0.9%).

Sample Number 0206190641-M01 (004AA(ISAF)-Wood): Largely hydrocarbons, Benzaldehyde (2%), Acetophenone (1.4%), Azulene (1%), Butylated Hydroxytoluene – BHT (1%)

In summary, there was no evidence of CW material detected in either the solid sorbent tubes collected in-situ or those collected as a function of headspacing samples of wood, soil or concrete. However, there was evidence of multiple non-CW compounds detected.

Table 1

Analyses results
6/20-21/2002

(ND = Not Detected NA = Not Analyzed)

ITEM ID as received	Matrix	GA	GB	GD	HD	1,4 Dithiane	L	VX as G-Analog	GF
Detection limits as Nanograms per tube		**0.5**	**0.6**	**0.2**	**1.0**	**1.0**	**1.0**	**0.6**	**0.7**
001AA	Tenax Tube	ND	ND	ND	ND	ND	NA	NA	ND
003AC	Tenax Tube	ND	ND	ND	ND	ND	NA	NA	ND
005AC	Tenax Tube	ND	ND	ND	ND	ND	NA	NA	ND
009AA	Tenax Tube	ND	ND	ND	ND	ND	NA	NA	ND
609	Gauze Pad (Listed as soil)	NA	ND	ND	ND	NA	ND	ND	ND
1836	Granular soil	NA	ND	ND	ND	NA	ND	ND	ND
2104	Soil	NA	ND	ND	ND	NA	ND	ND	ND
2359	Soil and broken concrete	NA	ND	ND	ND	NA	ND	ND	ND
3033	Soil and clay	NA	ND	ND	ND	NA	ND	ND	ND
4560	Soil	NA	ND	ND	ND	NA	ND	ND	ND
003AA	Soil	NA	ND	ND	ND	NA	ND	ND	ND
004AA	Soil Wood	NA	ND ND	ND ND	ND ND	NA	ND ND	ND ND	ND ND
007AA	Concrete	NA	ND	ND	ND	NA	ND	ND	ND
2090	Wood	NA	ND	ND	ND	NA	ND	ND	ND
2219	Soil	NA	ND	ND	ND	NA	ND	ND	ND
2312	Soil	NA	ND	ND	ND	NA	ND	ND	ND
006AA	Soil	NA	ND	ND	ND	NA	ND	ND	ND
2071	Soil and concrete	NA	ND	ND	ND	NA	ND	ND	ND
4516	Gauze Pad	NA	ND	ND	ND	NA	ND	ND	ND
3572	Soil with brown chunks	NA	ND	ND	ND	NA	ND	ND	ND
2443	Soil	NA	ND	ND	ND	NA	ND	ND	ND
001AA	Soil	NA	ND	ND	ND	NA	ND	ND	ND
002AA	Soil & gray granular powder	NA	ND	ND	ND	NA	ND	ND	ND
003AA(ISAF)	Dry brown powder	NA	ND	ND	ND	NA	ND	ND	ND
004AA(ISAF)	Soil Wood	NA	ND ND	ND ND	ND ND	NA	ND ND	ND ND	ND ND
1816	Gray powder with chunks	NA	ND	ND	ND	NA	ND	ND	ND
3620	Soil and concrete	NA	ND	ND	ND	NA	ND	ND	ND
3565	Soil-granular	NA	ND	ND	ND	NA	ND	ND	ND
2029	Gauze (listed as soil)	NA	ND	ND	ND	NA	ND	ND	ND
3575	Brown powder	NA	ND	ND	ND	NA	ND	ND	ND

1859	Concrete	NA	ND	ND	ND	NA	ND	ND	ND
3108	Brown powder	NA	ND	ND	ND	NA	ND	ND	ND
007AA(ISAF)	Concrete	NA	ND	ND	ND	NA	ND	ND	ND
2376	Wood	NA	ND	ND	ND	NA	ND	ND	ND
2402	Wet soil	NA	ND	ND	ND	NA	ND	ND	ND
2707	Fine soil	NA	ND	ND	ND	NA	ND	ND	ND
3049	Soil with wood shavings	NA	ND	ND	ND	NA	ND	ND	ND