SDMS Document
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FINAL REPORT
VACUUM DUST SAMPLING
CORNELL DUBILIER ELECTRONICS
SOUTH PLAINFIELD, NJ
FEBRUARY 1998

U.S. EPA Work Assignment No.: 2-262
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1.0 INTRODUCTION

1.1 Objective of this Study

The objective of this project was to perform vacuum sampling to determine the extent of contamination of polychlorinated biphenyls (PCBs) in residences located southwest of the Hamilton Industrial Park in South Plainfield, NJ. The Response Engineering Analytical Contract (REAC) was tasked by the United States Environmental Protection Agency/Environmental Response Team Center (U.S. EPA/ERTC) to collect and analyze the vacuum samples.

1.2 Site Background

The Hamilton Industrial Park, the former site of Cornell Dubilier Electronics, consists of ten buildings located at 333 Hamilton Blvd., South Plainfield, NJ, and is currently owned by D.S.C. of Newark Enterprises. The buildings are rented by thirteen small businesses. Prior on-site investigations have identified PCB contamination in the soil.

2.0 METHODOLOGY

On 17 and 18 November 1997, REAC personnel sampled twelve residences for PCBs using Nilfisk GS-80 High Efficiency Particulate Air (HEPA) vacuums. The HEPA vacuum accessories consisted of a 3-in-1 floor nozzle, a 22" stainless steel straight tube, a 6' 6" plastic hose, and a collection pan with a dedicated paper collection bag inside a GS-80 polyliner. The accessories were all replaced between samples to avoid cross contamination. The samples were collected by measuring a designated area of floor space in a room and vacuuming accumulated dust from the measured area. The designated sample area was initially 1 meter squared (m^2) but due to low sample mass it was increased. Visual inspection of the collection bag was used to determine if enough sample was taken. Once the sample was collected, the area vacuumed was recorded. Samples were collected from carpeted and non-carpeted areas. The dust samples were collected in a dedicated paper vacuum bag. Between two and four samples were collected from each house yielding a total of thirty-seven samples. The samples were returned to REAC and the contents of the bag were screened through a 100-mesh sieve. They were then weighed and submitted for analysis in an 8 ounce (oz.) glass sample jar. Table 1 contains the vacuum sampling locations. The sample area and mass can also be found in Table 1. The dust samples were analyzed for PCBs using U.S. EPA Method 8080/SW-846.

3.0 RESULTS

The results of analysis for PCBs in vacuum dust can be found in Table 2.

4.0 DISCUSSION OF RESULTS

Thirty-seven dust samples were collected for PCB analysis during the sampling event of 17 and 18 November 1998. Twenty-nine samples showed levels of weathered Aroclor 1254 above the method detection limit (MDL). Weathering indicates that the Aroclor in question is present, but due to breakdown, most predominant peaks are present with some changed peak ratios. The samples ranged in concentration from 120 µg/kg (micrograms per kilogram) (Sample #12082, 130 Spicer Ave/1st Floor LR & Hallway) to 120,000 µg/kg (Sample #12060, 204 Spicer Ave/LR). Ten samples had levels of weathered Aroclor 1260 above the MDL. The samples ranged in concentration from 54 µg/kg (Sample #12082, 130 Spicer Ave/1st Floor LR & Hallway) to 85,000 µg/kg (Sample #12060, 204 Spicer Ave/LR). Aroclors 1016, 1221, 1232, 1242, 1248 were not found above the MDL. There were no Aroclors detected in the System Blank.

Table 1
Vacuum Sampling Locations
Cornell Dubilier Electronics
South Plainfield, NJ
February 1998

REAC Sample Number	Location	Sample Area (m^2)	Sample Mass (g)
12060	204 Spicer Ave., Living room	6	0.57
12061	204 Spicer Ave., Kitchen	1.5	0.43
12062	204 Spicer Ave., Child's bedroom	6	0.12
12063	204 Spicer Ave., Bedroom	4	0.39
12064	507 Hamilton Blvd., Playroom	12	24.89
12065	507 Hamilton Blvd., Living room	5	1.66
12066	507 Hamilton Blvd., Dining room	3	1.18
12067	500 Garibaldi Ave., Living room	4	11.93
12068	500 Garibaldi Ave., Dining room/kitchen	3	1.62
12069	500 Garibaldi Ave., Bedroom	3	4.75
12070	214 Spicer Ave., Hallway/stairs	8	0.20
12071	214 Spicer Ave., Child's bedroom	4	0.12
12072	214 Spicer Ave., Family room	6	0.16
12073	108 Spicer Ave., Family room	8	1.35
12074	108 Spicer Ave., Bedroom	17	0.64
12075	108 Spicer Ave., Hallway/stairs	4.5	0.70
12076	320 Spicer Ave., Hallway	7.5	5.72
12077	320 Spicer Ave., Living room	7.8	3.15
12078	320 Spicer Ave., Den	5.6	17.67
12079	501 Garibaldi Ave., Family room	7.3	2.20
12080	501 Garibaldi Ave., Work room	11.5	1.05
12081	501 Garibaldi Ave., Boy's bedroom	14.1	1.54
12082	130 Spicer Ave., First floor living room/hallway	14.4	25.78
12083	130 Spicer Ave., First floor bedroom	2.1	15.62

m^2 square meters
g grams

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Table 1 (cont'd)
Vacuum Sampling Locations
Cornell Dubilier Electronics
South Plainfield, NJ
February 1998

Sample Number	Location	Sample Area (m^2)	Sample Mass (g)
12084	130 Spicer Ave., Second floor living room	8.6	0.50
12085	130 Spicer Ave., Second floor bedroom	3.4	1.52
12086	305 Spicer Ave., First floor living room	1.4	8.88
12087	305 Spicer Ave., Basement	4.8	3.51
12088	233 Delmore Ave., First floor bedroom/kitchen rugs	5.5	0.82
12089	233 Delmore Ave., Living room	13.2	0.50
12090	233 Delmore Ave., Second floor bedroom/hallway	8.4	0.95
12091	210 Spicer Ave., First floor living room/area rugs	8.1	0.38
12092	210 Spicer Ave., Boy's bedroom	17.6	3.90
12093	210 Spicer Ave., Family room/basement	14.3	0.23
12094	228 Spicer Ave., Front entry	9.2	2.99
12095	228 Spicer Ave., Living room	13.2	1.61
12096	228 Spicer Ave., Boy's room	6.9	1.21

m^2 square meters
g grams

Table 2
Results of the Analysis for PCBs in Vacuum Dust
Cornell Dubilier Electronics
South Plainfield, NJ
February 1998

Sample ID	12060		12061		12062		12063		12064	
Location	204 Spicer Ave/LR		204 Spicer Ave/Kitchen		204 Spicer Ave/BR Child		204 Spicer/BR		507 Hamilton Blvd/Playroom	
AROCLOR	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
1016	U	440	U	580	U	2100	U	640	U	30
1221	U	880	U	1200	U	4200	U	1300	U	61
1232	U	440	U	580	U	2100	U	640	U	30
1242	U	440	U	580	U	2100	U	640	U	30
1248	U	440	U	580	U	2100	U	640	U	30
1254	120000 W	440	41000 W	580	18000 W	2100	17000 W	640	2500 W	30
1260	85000 W	440	17000 W	580	11000 W	2100	8100 W	640	U	30

PCBs polychlorinated biphenyls
LR living room
BR bedroom
MDL method detection limit
µg/kg micrograms per kilogram
U not detected above the MDL
J detected below the MDL
W weathered

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Table 2 (cont'd)
Results of the Analysis for PCBs in Vacuum Dust
Cornell Dubilier Electronics
South Plainfield, NJ
February 1998

Sample ID	12065		12066		12067		12068		12069	
Location	507 Hamilton Blvd/LR		507 Hamilton Blvd/DR		500 Garibaldi Ave/LR		500 Garibaldi Ave/DR & Kitchen		500 Garibaldi Ave/BR	
AROCLOR	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
1016	U	150	U	210	U	21	U	150	U	53
1221	U	300	U	420	U	42	U	310	U	110
1232	U	150	U	210	U	21	U	150	U	53
1242	U	150	U	210	U	21	U	150	U	53
1248	U	150	U	210	U	21	U	150	U	53
1254	30000 W	150	14000 W	210	38000 W	21	15000 W	150	38000 W	53
1260	U	150	3500 W	210	4000 W	21	8800 W	150	9200 W	53

PCBs polychlorinated biphenyls
LR living room
BR bedroom
DR dining room
MDL method detection limit
µg/kg micrograms per kilogram
U not detected above the MDL
J detected below the MDL
W weathered

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Table 2 (cont'd)
Results of the Analysis for PCBs in Vacuum Dust
Cornell Dubilier Electronics
South Plainfield, NJ
February 1998

Sample ID	12070		12071		12072		12073		12074	
Location	214 Spicer Ave/Hallway & Stairs		214 Spicer Ave/BR Child		214 Spicer Ave/Family Room		108 Spicer Ave/Family Room		108 Spicer Ave/BR	
AROCLOR	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
1016	U	1300	U	2100	U	1600	U	190	U	390
1221	U	2500	U	4200	U	3100	U	370	U	780
1232	U	1300	U	2100	U	1600	U	190	U	390
1242	U	1300	U	2100	U	1600	U	190	U	390
1248	U	1300	U	2100	U	1600	U	190	U	390
1254	7900 W	1300	1300 JW	2100	2800 W	1600	2500 W	190	490 W	390
1260	U	1300	U	2100	U	1600	U	190	U	390

PCBs polychlorinated biphenyls
BR bedroom
MDL method detection limit
µg/kg micrograms per kilogram
U not detected above the MDL
J detected below the MDL
W weathered

Table 2 (cont'd)
Results of the Analysis for PCBs in Vacuum Dust
Cornell Dubilier Electronics
South Plainfield, NJ
February 1998

Sample ID	12075		12076		12077		12078		12079	
Location	108 Spicer Ave/Hallway & Stairs		320 Spicer Ave/Hallway		320 Spicer Ave/LR		320 Spicer Ave/Den		501 Garibaldi Ave/Family Room	
AROCLOR	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
1016	U	360	U	44	U	79	U	24	U	110
1221	U	710	U	87	U	160	U	49	U	230
1232	U	360	U	44	U	79	U	24	U	110
1242	U	360	U	44	U	79	U	24	U	110
1248	U	360	U	44	U	79	U	24	U	110
1254	1300 W	360	1100 W	44	940 W	79	370 W	24	5200 W	110
1260	540 W	360	U	44	U	79	U	24	U	110

PCBs polychlorinated biphenyls
LR living room
MDL method detection limit
µg/kg micrograms per kilogram
U not detected above the MDL
J detected below the MDL
W weathered

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Table 2 (cont'd)
Results of the Analysis for PCBs in Vacuum Dust
Cornell Dubilier Electronics
South Plainfield, NJ
February 1998

Sample ID	12080		12081		12082		12083		12084	
Location	501 Garibaldi Ave/Work Room		501 Garibaldi Ave/Boy's BR		130 Spicer/1st Floor LR & Hallway		130 Spicer Ave/1st Floor BR		130 Spicer Ave/2nd Floor LR	
AROCLOR	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
1016	U	240	U	160	U	31	U	25	U	500
1221	U	480	U	320	U	63	U	50	U	1000
1232	U	240	U	160	U	31	U	25	U	500
1242	U	240	U	160	U	31	U	25	U	500
1248	U	240	U	160	U	31	U	25	U	500
1254	540 W	240	420 W	160	120 W	31	410 W	25	U	500
1260	U	240	U	160	54 W	31	U	25	U	500

PCBs polychlorinated biphenyls
LR living room
BR bedroom
MDL method detection limit
µg/kg micrograms per kilogram
U not detected above the MDL
J detected below the MDL
W weathered

Table 2 (cont'd)
Results of the Analysis for PCBs in Vacuum Dust
Cornell Dubilier Electronics
South Plainfield, NJ
February 1998

Sample ID	12085		12086		12087		12088		12089	
Location	130 Spicer Ave/2nd Floor Boy's BR		305 Spicer Ave/1st Floor LR		305 Spicer/Basement		233 Delmore Ave/1st Floor BR & Kitchen Rugs		233 Delmore Ave/LR	
AROCLOR	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
1016	U	160	U	28	U	71	U	300	U	500
1221	U	330	U	56	U	140	U	610	U	1000
1232	U	160	U	28	U	71	U	300	U	500
1242	U	160	U	28	U	71	U	300	U	500
1248	U	160	U	28	U	71	U	300	U	500
1254	290 W	160	520 W	28	960 W	71	U	300	U	500
1260	U	160	U	28	U	71	U	300	U	500

PCBs polychlorinated biphenyls
LR living room
BR bedroom
MDL method detection limit
µg/kg micrograms per kilogram
U not detected above the MDL
J detected below the MDL
W weathered

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Table 2 (cont'd)
Results of the Analysis for PCBs in Vacuum Dust
Cornell Dubilier Electronics
South Plainfield, NJ
February 1998

Sample ID	12090		12091		12092		12093		12094	
Location	233 Delmore Ave/2nd Floor BR, Hall & Steps		210 Spicer Ave/1st Floor LR		210 Spicer/Boy's BR & Hallway		210 Spicer Ave/Family Room & Basement		228 Spicer Ave/Front Entry Area Rug	
AROCLOR	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
1016	U	260	U	660	U	64	U	1100	U	84
1221	U	530	U	1300	U	130	U	2200	U	170
1232	U	260	U	660	U	64	U	1100	U	84
1242	U	260	U	660	U	64	U	1100	U	84
1248	U	260	U	660	U	64	U	1100	U	84
1254	U	260	U	660	150 W	64	U	1100	330 W	84
1260	U	260	U	660	U	64	U	1100	U	84

PCBs polychlorinated biphenyls
LR living room
BR bedroom
MDL method detection limit
µg/kg micrograms per kilogram
U not detected above the MDL
J detected below the MDL
W weathered

Table 2 (cont'd)
Results of the Analysis for PCBs in Vacuum Dust
Cornell Dubilier Electronics
South Plainfield, NJ
February 1998

Sample ID Location	12095 228 Spicer Ave/LR		12096 228 Spicer Ave/Boy's BR	
AROCLOR	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
1016	U	160	U	210
1221	U	310	U	410
1232	U	160	U	210
1242	U	160	U	210
1248	U	160	U	210
1254	U	160	U	210
1260	U	160	U	210

PCBs polychlorinated biphenyls
LR living room
MDL method detection limit
µg/kg micrograms per kilogram
U not detected above the MDL
J detected below the MDL
W weathered

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APPENDIX A
Copies of Field Data Sheets and Chain of Custodies
Cornell Dubilier Electronics
South Plainfield, NJ
Final Report
February 1998

ENVIRONMENTAL RESPONSE TEAM
DUST SAMPLING WORK SHEET

Roy F. Weston Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

1 - LR (6)
2 - Kitchen (1.5)
3 - BR (6)
4 - children BR (

(1)

SAMPLE DATA SHEET

Operator MT, KR Date 11/17/97 Sample Ident. #: _____

Sampling site 204 Spicer Ave

Type of Carpet: Plush ___ Level Loop ___ Multilevel ___ Shag ___
Type of Vacuum: Upright ___ Canister ___ Other _____

Last Vacuumed _____ Temp. _____ Humidity _____%

Comments: _____

Location of Area Sampled: _____ Area _____ m^2

Sketch of Area Sampled:

Dust loading (1) 0.57 gr/6 sq meters = 0.095 grams/mt^2
(2) 0.43/1.5 = 0.286 " "
(3) 0.12/6 = 0.020 " "
(4) 0.39/4 = 0.098 " "

Leak Check: Yes__ No__; 20 second cleaning @ end: Yes __ No __

Total Sample Time:__minutes __seconds Flow ΔP ____ Nozzle ΔP ___

Bottle final Wt: _____g Tare Wt: _____g Net Wt: _____g

Pan & Sample Wt: _____g Pan Tare Wt: _____g Net Wt: _____g

Total Dust: _____ grams/m^2
Fine Dust: _____ grams/m^2

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1- LR - In front of fireplace and back of sofa by door frame (vacuumed 6-sq meters)

2. Kitchen - vacuumed small rug on 2 Kitchen - Kitchen has linoleum (1½-ft.

3 - BR on 2nd floor (6-sq mt)

4 - children BR (4-sq mt)

0915 - 1030

200444

ENVIRONMENTAL RESPONSE TEAM
DUST SAMPLING WORK SHEET

Roy F. Weston Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

1- Playroom (12)
2-LR (5)
3-DR (3)
~~4 BR~~

(2)

SAMPLE DATA SHEET

Operator MT. KR Date 11/17/97 Sample Ident. #: _____

Sampling site 507 Hamilton Blvd

Type of Carpet: Plush ___ Level Loop ___ Multilevel ___ Shag ___
Type of Vacuum: Upright ___ Canister ___ Other _____

Last Vacuumed _____ Temp. _____ Humidity _____%

Comments: _____

Location of Area Sampled: _____ Area _____ m^2

Sketch of Area Sampled:

Dust loading (1) 24.89/12 = 2.074 grams/mt^2

(2) 1.66/5 = 0.332 "

(3) 1.18/3 = 0.393 "

Leak Check: Yes__ No__; 20 second cleaning @ end: Yes __ No __

Total Sample Time:__minutes __seconds Flow ΔP ____ Nozzle ΔP ___

Bottle final Wt: _____g Tare Wt: _____g Net Wt: _____g

Pan & Sample Wt: _____g Pan Tare Wt: _____g Net Wt: _____g

Total Dust: _____ grams/m^2
Fine Dust: _____ grams/m^2

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1035 - 1145

ENVIRONMENTAL RESPONSE TEAM
DUST SAMPLING WORK SHEET

Roy F. Weston Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

1 - LR(4)
2 - DR/Kit(3)
3 - BR(3)

(3)

SAMPLE DATA SHEET

Operator MT, KR Date 11/17/97 Sample Ident. #: _____

Sampling site 500 Garibaldi Ave

Type of Carpet: Plush ___ Level Loop ___ Multilevel ___ Shag ___
Type of Vacuum: Upright ___ Canister ___ Other _____

Last Vacuumed _____ Temp. _____ Humidity _____%

Comments: _____

Location of Area Sampled: _____ Area _____ m^2

Sketch of Area Sampled:

Dust Loading ① 11.93 gr / 4 m^2 = 2.9825 grams/m^2

② 1.62 gr / 3 m^2 = 0.54 grams/m^2

③ 4.75 gr / 3 m^2 = 1.583 grams/m^2

Leak Check: Yes__ No__; 20 second cleaning @ end: Yes __ No __

Total Sample Time:__minutes __seconds Flow ΔP ____ Nozzle ΔP ___

Bottle final Wt: _____g Tare Wt: _____g Net Wt: _____g

Pan & Sample Wt: _____g Pan Tare Wt: _____g Net Wt: _____g

Total Dust: _____ grams/m^2
Fine Dust: _____ grams/m^2

200446

1200 - 1300

1) Hall-way - $22' \times 3'$ $A = 1.83' \times 0.5 = 0.9$ $22' \times 3' = 66 \times 0.09$ $= 6.1$

Stairs - $7(3\frac{1}{2} \times 10'')$ $A = 10.5$ sq ft

Total Area $= 0.92 + 10.5 = 11.42$ sq

$\boxed{n \quad n(\text{sq meters}) = 1.06}$

Areas

1- Hallway $22' \times 3' \times 0.0929 = 6.13$ sq meters

2- Stairs $7(42'' \times 10'') \times 0.000645 = 1.89$ "

Total 8.02 sq meters

1-mt = 3.28 ft

$(1\text{-mt})^2 = 10.76$ sq meters

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ENVIRONMENTAL RESPONSE TEAM
DUST SAMPLING WORK SHEET

Roy F. Weston Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

(8.00)
1 - Hallway/Stair
2 - Kid BR (4)
3 - Family Rm (6)

(4)

SAMPLE DATA SHEET

Operator MT, KR Date 11/17/97 Sample Ident. #: _____

Sampling site 214 Spicer Ave

Type of Carpet: Plush ___ Level Loop ___ Multilevel ___ Shag ___
Type of Vacuum: Upright ___ Canister ___ Other _____

Last Vacuumed _____ Temp. _____ Humidity _____%

Comments: _____

Location of Area Sampled: _____ Area _____ m^2

Sketch of Area Sampled:

Dust Loading

(1) 0.20 grams/8.00 m^2 = 0.025 grams/m^2

(2) 0.12 gr/4 m^2 = 0.03 grams/m^2

(3) 0.16 gr/6 m^2 = 0.027 grams/m^2

Leak Check: Yes__ No__; 20 second cleaning @ end: Yes __ No __

Total Sample Time:__minutes __seconds Flow ΔP ____ Nozzle ΔP ___

Bottle final Wt: _____g Tare Wt: _____g Net Wt: _____g

Pan & Sample Wt: _____g Pan Tare Wt: _____g Net Wt: _____g

Total Dust: _____ grams/m^2
Fine Dust: _____ grams/m^2

200448

Area Rug in BRs

BR-1 - $66^{n} \times 42^{n} = 2{,}772/144 = 19.25$ sq-ft

2 - $88^{n} \times 63^{n} = 5{,}544/144 = 38.50$ "

3 - $88^{n} \times 63^{n} = 5{,}544/144 = 38.50$ "

96.25 "$/10.76 =$

$\boxed{8.95 \text{ sq-meters}}$

Family Room - Area Rug

$95^{n} \times 130^{n} = 12{,}350/144 = 85.8$ sq-ft$/10.76 =$

$\boxed{8\text{-sq meters}}$

$\boxed{1\text{-sq ft} = 144 \text{ sq-inches}}$

Areas

1 - Family Room : $A = (95^{n} \times 130^{n}) \times 0.000645 = 7.966$ sq m (8.0)

2 - Combination BRs
1. $A = (66^{n} \times 42^{n}) \times 0.000645 = 1.788$ "
2. $A = (88^{n} \times 63^{n}) \times 0.000645 = 3.576$ "
3. $A = (88^{n} \times 63^{n}) \times 0.000645 = 3.576$ "

Total Area ..... 16.906 (~17.2)

3 - Hallway/steps
Hallway $A = (96^{n} \times 27^{n}) \times 0.000645 = 1.672$ sq meter
Area Rug $A = (27^{n} \times 30^{n}) \times 0.000645 = 0.522$ "

$\boxed{2.194}$ "

steps $A = 13(10^{n} \times 27^{n}) \times 0.000645 = 2.263$ sq meter

Total Area = $\boxed{4.5 \text{ sq meters}}$

(2)

AREAS

(1) Family Room = $95^{n} \times 130^{n} = (7.92' \times 10.83') = 85.8$ sq ft$/10.76 = 7.97$ sq-mt

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ENVIRONMENTAL RESPONSE TEAM
DUST SAMPLING WORK SHEET

Roy F. Weston Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

1-Family Room (8)
2-Comb. BRs (17)
3-Hall + Steps (4.5)

(5)

SAMPLE DATA SHEET

Operator MT, KR Date 11/17/ Sample Ident. #: _____

Sampling site 108 Spicer

Type of Carpet: Plush ___ Level Loop ___ Multilevel ___ Shag ___
Type of Vacuum: Upright ___ Canister ___ Other _____

Last Vacuumed _____ Temp. _____ Humidity _____%

Comments: _____

Location of Area Sampled: _____ Area _____ m^2

Sketch of Area Sampled:

Dust Loading (1) 1.35 gr / 8 m^2 = 0.16875 grams/m^2

(2) 0.64 gr / ~~0.038 g~~ 17 m^2 (KL) = 0.038 grams/m^2

(3) 0.70 gr / 4.5 m^2 = 0.156 grams/m^2

Leak Check: Yes__ No__; 20 second cleaning @ end: Yes __ No __

Total Sample Time:__minutes __seconds Flow ΔP ____ Nozzle ΔP ___

3 1/2" Bottle final Wt: _____g Tare Wt: _____g Net Wt: _____g

Pan & Sample Wt: _____g Pan Tare Wt: _____g Net Wt: _____g

Total Dust: _____ grams/m^2
Fine Dust: _____ grams/m^2

* 13-Steps - 10" x 27" + Hallway Rug - 8' x 27"
Area Rug - 7' x 3'

200450

Table 1.1 (cont.) Results of the Analysis for PCB in Dust
WA# 2-262 Cornell Dubilier

Client ID	12079	
Location	501 Garibaldi FR	
Analyte	Conc. µg/kg	MDL µg/kg
Aroclor 1016	U	110
Aroclor 1221	U	230
Aroclor 1232	U	110
Aroclor 1242	U	110
Aroclor 1248	U	110
Aroclor 1254	5200 W	110
Aroclor 1260	U	110

Table 1.1 (cont.) Results of the Analysis for PCB in Dust
WA# 2-262 Cornell Dubilier

Client ID	SBLK11249701		12080		12081		12082		12083	
Location	-		501 Garibaldi-WR		501 Garibaldi-BOYS-RM		130 SPICER-LR		130 Spicer-FFBR	
Analyte	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
Aroclor 1016	U	25	U	240	U	160	U	31	U	25
Aroclor 1221	U	50	U	480	U	320	U	63	U	50
Aroclor 1232	U	25	U	240	U	160	U	31	U	25
Aroclor 1242	U	25	U	240	U	160	U	31	U	25
Aroclor 1248	U	25	U	240	U	160	U	31	U	25
Aroclor 1254	U	25	540 W	240	420 W	160	120 W	31	410 W	25
Aroclor 1260	U	25	U	240	U	160	54 W	31	U	25

1) Hallway 20' x 4' = 7.5 sq meters

2) LR 12' x 7' = 7.8 " "

3) Den 10' x 6' = 5.6 " "

200453

ENVIRONMENTAL RESPONSE TEAM
DUST SAMPLING WORK SHEET

Roy F. Weston Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

1 – Hallway Entry (7.5
2 – LR (7.8)
3 – Den (5.6)

(6)

SAMPLE DATA SHEET

Operator MT, KR Date 11/17/97 Sample Ident. #: _____

Sampling site ~~320~~ Spicer

Type of Carpet: Plush ___ Level Loop ___ Multilevel ___ Shag ___
Type of Vacuum: Upright ___ Canister ___ Other _____

Last Vacuumed _____ Temp. _____ Humidity _____%

Comments: _____

Location of Area Sampled: _____ Area _____ m^2

Sketch of Area Sampled:

Dust Loading (1) 5.72 gr / 7.5 m^2 = 0.763 grams/m^2

(2) 3.15 gr / 7.8 m^2 = 0.404 grams/m^2

(3) 17.67 gr / 5.6 m^2 = 3.16 grams/m^2

Leak Check: Yes__ No__; 20 second cleaning @ end: Yes __ No __

Total Sample Time:__minutes __seconds Flow ΔP ____ Nozzle ΔP ___

Bottle final Wt: _____g Tare Wt: _____g Net Wt: _____g

Pan & Sample Wt: _____g Pan Tare Wt: _____g Net Wt: _____g

Total Dust: _____ grams/m^2
Fine Dust: _____ grams/m^2

200454

- Family Room - 9'-11" x 7'-11" A=(119" x 95") x 0.00064
A = 7.3 sq meters
- Boys Room - 8'-2" x 8'-2".
- Hallway - 18' x 3'
- Steps (13) - 34" x 10"

this sample was collected in these areas

A = (98" x 98") x 0.000645 = 6.2 sq meters
A = (18' x 3') x 0.0929 = 5.0 " "
A = (34" x 10") x 13 x 0.000645 = 2.9 " "

TOTAL 14.1 sq meters

200455

ENVIRONMENTAL RESPONSE TEAM
DUST SAMPLING WORK SHEET

Roy F. Weston Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

1 - Family Room (7.3
2 - Work Room (11.5
3 - Boy's Room (14.1

(7)

SAMPLE DATA SHEET

Operator MT, KR Date 11/18/97 Sample Ident. #: _____

Sampling site 501 Garibaldi Ave

Type of Carpet: Plush ___ Level Loop ___ Multilevel ___ Shag ___
Type of Vacuum: Upright ___ Canister ___ Other _____

Last Vacuumed _____ Temp. _____ Humidity _____%

Comments: _____

Location of Area Sampled: _____ Area _____ m^2

Sketch of Area Sampled:

Dust Loading (1) 2.20 gr/7.3 m^2 = 0.301 grams/m^2
(2) 1.05 gr/11.5 m^2 = 0.0913 grams/m^2
(3) 1.54 gr/14.1 m^2 = 0.109 grams/m^2

Leak Check: Yes__ No__; 20 second cleaning @ end: Yes __ No __

Total Sample Time:__minutes __seconds Flow ΔP ____ Nozzle ΔP ___

Bottle final Wt: _____g Tare Wt: _____g Net Wt: _____g

Pan & Sample Wt: _____g Pan Tare Wt: _____g Net Wt: _____g

Total Dust: _____ grams/m^2
Fine Dust: _____ grams/m^2

200456

- Work Room 11'-2" x 11'-0" A=(134" x 132")x0.000645

1st Floor

- 1 - LR + Hallway (1st Floor) - LR 15' x 1' A = 9.8 sq m
  Hallway 17' x 35" A = 4.6 sq m
- 2 - BR 3' x 5' - A = 1.4 sq meters (✓) $\boxed{A = 14.4}$
  35" x 26" A = 0.6 " "
  10" x 21" A = 0.1
  $\boxed{2.1 \text{ sq meters}}$ (✓)

2nd Floor

- 1 - LR 15' x 74" $\boxed{A = 8.6 \text{ sq meters}}$ (✓)
- 2 - Boys Room. 117" x 36" plus 32" x 32"
  A_1 = 2.7 sq meters
  A_2 = 0.7
  $\boxed{A = \boxed{3.4 \text{ sq meters}}}$ (✓)

200457

ENVIRONMENTAL RESPONSE TEAM
DUST SAMPLING WORK SHEET

Roy F. Weston Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

1- 1st Floor-LR+Hallway (14..
2- " BR (2.1)
3- 2nd Floor-LR (8.6)
4- " Boy's Room (3.4)

(8)

SAMPLE DATA SHEET

Operator MT, KR Date 10/18/97 Sample Ident. #: _____

Sampling site 130 Spicer Ave

Type of Carpet: Plush ___ Level Loop ___ Multilevel ___ Shag ___
Type of Vacuum: Upright ___ Canister ___ Other _____

Last Vacuumed _____ Temp. _____ Humidity _____%

Comments: _____

Location of Area Sampled: _____ Area _____ m^2

Sketch of Area Sampled:

Dust Loading
(1) 25.78 gr / 14.4 m^2 = 1.79 grams/m^2
(2) 15.62 gr / 2.1 m^2 = 7.44 grams/m^2
(3) 0.50 gr / 18.6 m^2 = 0.027 grams/m^2
(4) 1.52 gr / 3.4 m^2 = 0.45 grams/m^2

Leak Check: Yes__ No__; 20 second cleaning @ end: Yes __ No __

Total Sample Time:__minutes __seconds Flow ΔP ____ Nozzle ΔP ___

Bottle final Wt: _____g Tare Wt: _____g Net Wt: _____g

Pan & Sample Wt: _____g Pan Tare Wt: _____g Net Wt: _____g

Total Dust: _____ grams/m^2
Fine Dust: _____ grams/m^2

200458

- 1st Floor. LR $\begin{cases} 11' \times 78'' \\ 3' \times 3' \end{cases}$

$A_1 = 0.6$ sq meters

$A_2 = 0.8$ " "

$\boxed{A = 1.4 \text{ sq meters}}$ ✓

- Basement $\begin{cases} 11' \times 78'' \\ 9\frac{1}{2}' \times 57'' \end{cases}$

$A_1 = 0.6$ sq meters

$A_2 = 4.2$ " "

$\boxed{A = 4.8 \text{ sq meters}}$ ✓

200459

ENVIRONMENTAL RESPONSE TEAM
DUST SAMPLING WORK SHEET

Roy F. Weston Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

1 - LR (1st Floor) - (1.4
2 - Basement (4.8

9

SAMPLE DATA SHEET

Operator MT, KR Date 11/18/97 Sample Ident. #: _____

Sampling site 305 S Spicer Ave

Type of Carpet: Plush ___ Level Loop ___ Multilevel ___ Shag ___
Type of Vacuum: Upright ___ Canister ___ Other _____

Last Vacuumed _____ Temp. _____ Humidity _____%

Comments: _____

Location of Area Sampled: _____ Area _____ m^2

Sketch of Area Sampled:

Dust Loading (1) 8.85 gr / 1.4 m^2 = 6.34 grams/m^2

(2) 3.51 gr / 4.8 m^2 = 0.731 grams/m^2

Leak Check: Yes__ No__; 20 second cleaning @ end: Yes __ No __

Total Sample Time:__minutes __seconds Flow ΔP ____ Nozzle ΔP ___

Bottle final Wt: _____g Tare Wt: _____g Net Wt: _____g

Pan & Sample Wt: _____g Pan Tare Wt: _____g Net Wt: _____g

Total Dust: _____ grams/m^2
Fine Dust: _____ grams/m^2

200460

- 1st Floor BR $89'' \times 36''$ $A_1 = 2.1$ sq meters
  - Kitchen $53'' \times 62''$ $A_2 = 2.1$ " "
  - Area Rugs (3) $(34'' \times 20'') \times 3$ $A_3 = 1.3$ " "
  - (1) $\boxed{A = 5.5 \text{ sq meters}}$ (4)
- LR $15'-10'' \times 8'-0''$ $A_1 = 11.8$ sq meters
  - $3'-0'' \times 5'-0''$ $A_2 = 1.4$ " "
  - (2) $\boxed{A = 13.2 \text{ sq meters}}$ (4)
- 2nd Fl BR. $79'' \times 20''$ $A_1 = 1.0$ sq meter
  - $20'' \times 73''$ $A_2 = 0.9$ " "
  - $60'' \times 80''$ $A_3 = 3.1$ " "
  - Hall $60'' \times 31''$ $A_4 = 1.2$ " "
  - Steps $29'' \times 39$ $A_5 = 0.7$ " "
  - $\hookrightarrow 9(9'' \times 28'')$ $A_6 = 1.5$ " "
  - (3) $\boxed{A = 8.4 \text{ sq meters}}$ (4)

200461

1515

ENVIRONMENTAL RESPONSE TEAM
DUST SAMPLING WORK SHEET

Roy F. Weston Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

1- 1st Floor BR/Kitchen Rugs (5.
2- LR (13.2)
3- 2nd Floor BR/Hallway/steps (8..

(10)

SAMPLE DATA SHEET

Operator MT, KR Date 11/18/97 Sample Ident. #: _____

Sampling site 233 Delmore Ave

Type of Carpet: Plush ___ Level Loop ___ Multilevel ___ Shag ___
Type of Vacuum: Upright ___ Canister ___ Other _____

Last Vacuumed _____ Temp. _____ Humidity _____%

Comments: _____

Location of Area Sampled: _____ Area _____ m^2

Sketch of Area Sampled:

Dust Loading (1) 0.82 gr / 5.5 m^2 = 0.149 grams/m^2
(2) 0.50 gr / 13.2 m^2 = 0.038 grams/m^2
(3) 0.95 gr / 8.4 m^2 = 0.113 grams/m^2

Leak Check: Yes__ No__; 20 second cleaning @ end: Yes __ No __

Total Sample Time:__minutes __seconds Flow ΔP ____ Nozzle ΔP ___

Bottle final Wt: _____g Tare Wt: _____g Net Wt: _____g

Pan & Sample Wt: _____g Pan Tare Wt: _____g Net Wt: _____g

Total Dust: _____ grams/m^2
Fine Dust: _____ grams/m^2

200462

① 1st Floor BR - 98" x 128" (Area Rug)

② BR (Boys) + Outside Hallway

54" x 32" A_1 = 1.1 sq meters
32" x 80" A_2 = 1.7 " "
20" x 40" A_3 = 0.5 " "
A_4 = 4.5 " "

7.8 sq mtr

+ Family BR 16'-3" x 36"

12'-3" x 10'2"
subtract: 27" x 72"
18" x 32"

③ Family Room Basement
120" x 12'/2'

7'-0" x 5'-0"
subtract 16" x 22"

① Area = 8.1 sq meters

② Area = 7.8 " " + 11.5 - 1.7 = 17.6 sq meters

③ Area = 11.2 " " + 3.3 - 0.23 = 14.3 " "

200463

ENVIRONMENTAL RESPONSE TEAM
DUST SAMPLING WORK SHEET

Roy F. Weston Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

1 - 1st Floor LR/Area Rug (8.1
2 - Bedr BR/Hallway/Family BR (17.
3 - Family Room/Basement (14.

(11)

SAMPLE DATA SHEET

Operator MT, KR Date 11/18/97 Sample Ident. #: _____

Sampling site 210 Spicer Ave

Type of Carpet: Plush ___ Level Loop ___ Multilevel ___ Shag ___
Type of Vacuum: Upright ___ Canister ___ Other _____

Last Vacuumed _____ Temp. _____ Humidity _____%

Comments: _____

Location of Area Sampled: _____ Area _____ m^2

Sketch of Area Sampled:

Dust Loading (1) 0.38 gr / 8.1 m^2 = 0.047 grams/m^2

(2) 3.90 gr / 17.6 m^2 = 0.222 grams/m^2

(3) 0.23 gr / 14.3 m^2 = 0.016 grams/m^2

Leak Check: Yes__ No__; 20 second cleaning @ end: Yes __ No __

Total Sample Time:__minutes __seconds Flow ΔP ____ Nozzle ΔP ___

Bottle final Wt: _____g Tare Wt: _____g Net Wt: _____g

Pan & Sample Wt: _____g Pan Tare Wt: _____g Net Wt: _____g

Total Dust: _____ grams/m^2
Fine Dust: _____ grams/m^2

200464

1- Front Entry (Area Rug) - ~~105" x 71"~~ 13'-0" x 91"

2- LR - $\begin{cases} 116" \times 14'-4" \\ \text{minus } \frac{1}{2}(96" \times 53") \\ 45" \times 64" \end{cases}$

3- Bay BR. $\begin{cases} 117" \times 42" & A_1 = 3.2 \text{ sq meters} \\ 34" \times 39" & A_2 = 0.9 \text{ " "} \\ 54" \times 80" & A_3 = 2.8 \text{ " "} \\ & \quad 6.9 \text{ " "} \end{cases}$

(2) $\begin{cases} A_1 = 12.9 - 1.6 = 11.3 \text{ sq m} \\ A_2 = 1.9 \\ A = 11.3 + 1.9 = 13.2 \text{ sq m} \end{cases}$

(1) A = 9.2 sq meters

(2) A = 13.2 " "

(3) A = 6.9 " "

200465

ENVIRONMENTAL RESPONSE TEAM
DUST SAMPLING WORK SHEET

1-Front Entry/Area Rug (9.2)
2- LR (13.2)
3 - Boy's Room (6.9)

Roy F. Weston Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

(12)

SAMPLE DATA SHEET

Operator MT, KR Date 11/18/97 Sample Ident. #: _____

Sampling site 228 Spicer Ave

Type of Carpet: Plush ___ Level Loop ___ Multilevel ___ Shag ___
Type of Vacuum: Upright ___ Canister ___ Other _____

Last Vacuumed _____ Temp. _____ Humidity _____%

Comments: _____

Location of Area Sampled: _____ Area _____ m^2

Sketch of Area Sampled:

Dust Loading
(1) 2.99 gr / 9.2 m^2 = 0.325 grams/m^2
(2) 1.61 gr / 13.2 m^2 = 0.122 grams/m^2
(3) 1.21 gr / 6.9 m^2 = 0.175 grams/m^2

Leak Check: Yes__ No__; 20 second cleaning @ end: Yes __ No __

Total Sample Time:__minutes __seconds Flow ΔP ____ Nozzle ΔP ___

Bottle final Wt: _____g Tare Wt: _____g Net Wt: _____g

Pan & Sample Wt: _____g Pan Tare Wt: _____g Net Wt: _____g

Total Dust: _____ grams/m^2
Fine Dust: _____ grams/m^2

200466

APPENDIX B
Analytical Report
Cornell Dubilier Electronics
South Plainfield, NJ
Final Report
February 1998

ANALYTICAL REPORT

Prepared by
Roy F. Weston, Inc.

Cornell Dubilier
South Plainfield, NJ

January, 1998

EPA Work Assignment No. 2-262
WESTON Work Order No. 03347-142-001-2262-01
EPA Contract No. 68-C4-0022

Submitted to
S. Burchette
EPA-ERTC

K. Robbins Task Leader	2/2/98 Date	Analysis by: REAC
for V. Kansal Analytical Section Leader	2/2/98 Date	Prepared by: M. Gillespie
E. Gilardi Program Manager	2/2/98 Date	Reviewed by: M. Barkley

2262\DEL\AR\9801\Cornell

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Appendix will be furnished on request.

Introduction

REAC in response to WA #2-262, provided analytical support for environmental samples collected from the Cornell Dubilier site, located in South Plainfield, NJ as described in the following table. The support also included QA/QC, data review, and preparation of an analytical report containing a summary of the analytical methods, the results, and the QA/QC results.

The samples were treated with procedures consistent with those described in SOP #1008.

COC #	Number of Samples	Sampling Date	Date Received	Matrix	Analysis	Laboratory
05290	19 1	11/17/97 11/18/97	11/21/97	Dust	PCB	REAC
05551	17	11/18/97	11/21/97	Dust	PCB	REAC

Case Narrative

PCB Data Package G 685 - PCB in Dust

Due to weathering and matrix interference professional judgement was used in the identification and quantitation of the aroclors.

Due to limited sample quantities no percent solids determiniation was performed. All results are reported on wet weight basis.

In the end of sequence check of 11/25/97 the %D for aroclor 1254-peak4 (33%) and aroclor 1254-peak5 (31%) are outside the acceptable QC limit. The data is not affected.

In the end of sequence check of 11/28/97 the %D for aroclor 1254-peak1 (74%), aroclor 1254-peak2 (97%), aroclor 1254-peak3 (132%), aroclor 1254-peak4 (130%), aroclor 1254-peak5 (182%), TCMX (77%) and DCBP (267%) are outside the acceptable QC limit. The data is not affected.

In the end of sequence check of 12/3/97 the %D for aroclor 1254-peak1 (51%), aroclor 1254-peak2 (60%), aroclor 1254-peak3 (91%), aroclor 1254-peak4 (97%), aroclor 1254-peak5 (151%), TCMX (50%) and DCBP (276%) are outside the acceptable QC limit. The data is not affected.

In the end of sequence check of 12/6/97 the %D for aroclor 1260-peak1 (51%), aroclor 1260-peak2 (51%), aroclor 1260-peak3 (61%), aroclor 1260-peak4 (67%), aroclor 1260-peak5 (78%) and DCBP (81%) are outside the acceptable QC limit. The data is not affected.

In the end of sequence check of 12/6/97 the %D for aroclor 1254-peak1 (27%), aroclor 1254-peak2 (31%), aroclor 1254-peak3 (35%), aroclor 1254-peak4 (43%), aroclor 1254-peak5 (57%) and DCBP (86%) are outside the acceptable QC limit. The data is not affected.

Case Narrative (cont.)

In the continuing calibration check of 12/5/97 pm, the %D for aroclor 1254-DCBP (26%) is outside the acceptable QC limit. The DCBP recoveries for samples 12081, 12082, 12092, 12094, 12071, 12072, 12074, 12078, 12079, 12083, 12086, 12087, 12070, 12075, 12073 and 12077 may be biased high.

Samples 12060, 12064, 12064MS, 12064MSD, 12065, 12067, 12068, 12069 and 12087 had both surrogates diluted out. The results of these samples should be considered estimated.

Samples 12074, 12079, 12085, 12089 and 12094 had both surrogates outside the acceptable QC limits or had matrix interference in the surrogate retention times. The results of these samples should be considered estimated.

Summary of Abbreviations

AA	Atomic Absorption
B	The analyte was found in the blank
BFB	Bromofluorobenzene
BPQL	Below the Practical Quantitation Limit
BS	Blank Spike
BSD	Blank Spike Duplicate
C	Centigrade
D	(Surrogate and MS/MSD Table) this value is from a diluted sample and was not calculated (Result Table) this result was obtained from a diluted sample
Dioxin	Denotes Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans and/or PCDD and PCDF
CLP	Contract Laboratory Protocol
COC	Chain of Custody
CONC	Concentration
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
DFTPP	Decafluorotriphenylphosphine
DL	Detection Limit
E	The value is greater than the highest linear standard and is estimated
EMPC	Estimated maximum possible concentration
ICAP	Inductively Coupled Argon Plasma
ISTD	Internal Standard
J	The value is below the method detection limit and is estimated
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MDL	Method Detection Limit
MI	Matrix Interference
MS	Matrix Spike
MSD	Matrix Spike Duplicate
MW	Molecular Weight
NA	either Not Applicable or Not Available
NC	Not Calculated
NR	Not Requested
NS	Not Spiked
% D	Percent Difference
% REC	Percent Recovery
PQL	Practical Quantitation Limit
PPBV	Parts per billion by volume
QL	Quantitation Limit
RPD	Relative Percent Difference
RSD	Relative Standard Deviation
SIM	Selected Ion Mode
TCLP	Toxic Characteristics Leaching Procedure
U	Denotes not detected
W	Weathered sample; the value should be regarded as estimated

m^3	cubic meter	kg	kilogram	μg	microgram
L	liter	g	gram	pg	picogram
mL	milliliter	mg	milligram		
μL	microliter				

* denotes a value that exceeds the acceptable QC limit

Abbreviations that are specific to a particular table are explained in footnotes on that table

Revision 10/16/97

Analytical Procedure for PCB in Dust

Extraction Procedure

A one gram aliquot was spiked with a surrogate solution consisting of tetrachloro-m-xylene and decachlorobiphenyl, then extracted with 30ml of hexane three times on a shaker table. After extraction, all three extracts were combined and concentrated to a final volume of one ml. A sulfuric acid cleanup was then performed.

Gas Chromatographic Analysis

The extract was analyzed for PCBs using simultaneous dual column injections. The analysis was done on an HP 5890, equipped with a HP 7673A automatic sampler, and controlled with an HP Chem-Station. The following conditions were employed:

First Column	DB-608, 30 meter, 0.32mm fused silica capillary, 0.50 μm film thickness
Injector Temperature	200° C
Detector Temperature	325° C
Second Column	Rtx-CLPesticides, 30 meter, 0.53mm fused silica capillary, 0.50 μm film thickness
Injector Temperature	200° C
Detector Temperature	325° C
Temperature Program-(both columns)	70 ° C for 1 minute 30 °C/min to 150°C, 0.5 min at 150°C 8 °C/min to 275°C, 10 min at 275°C

The gas chromatographs were calibrated using 5 PCB standards at 250, 500, 1000, 2000, and 5000 μg/L. Five representative peaks were chosen and the responses from each mixture were used to calculate the response factors (RF) of the analyte. The average RF was used to calculate the concentration of PCB's in the sample. Quantification was based on the DB-608 column (signal 1) and the identity of the analyte was confirmed using the Rtx-CLPesticides column (signal 2). A fingerprint chromatogram was run using each of the seven Aroclor mixtures; calibration curves were run only if a particular Aroclor or toxaphene was found in the sample.

$$C_u \quad \frac{DF x A_u x V_t}{RF_{ave} x V_i x W x D}$$

The PCB results, listed in Table 1.1, are calculated by using the following formula:

where

C_u	=	Concentration of analyte (g/kg)
DF	=	Dilution Factor
A_u	=	Area or peak height
V_t	=	Volume of sample (mL)
RF_{ave}	=	Average response factor
V_i	=	Volume of extract injected (μL)
W	=	Weight of sample (g)
D	=	Decimal percent solids

Response Factor calculation:

The RF for each specific analyte is quantitated based on the area response from the continuing calibration check as follows:

$$RF \frac{A_u}{total\ pg\ injected}$$

where

A_u = Area or peak height

$$RF_{ave} \frac{RF_1 \ldots RF_n}{n}$$

and, where

n = number of samples

Revision 11/13/97

Table 1.1 Results of the Analysis for PCB in Dust
WA# 2-262 Cornell Dubilier

Client ID	SBLK11219701		12060		12061		12062		12063	
Location	-		204 SPICER-LR		204 SPICER-KIT		204 SPICER-CHBR		204 SPICER-BR	
Analyte	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
Aroclor 1016	U	25	U	440	U	580	U	2100	U	640
Aroclor 1221	U	50	U	880	U	1200	U	4200	U	1300
Aroclor 1232	U	25	U	440	U	580	U	2100	U	640
Aroclor 1242	U	25	U	440	U	580	U	2100	U	640
Aroclor 1248	U	25	U	440	U	580	U	2100	U	640
Aroclor 1254	U	25	120000 W	440	41000 W	580	18000 W	2100	17000 W	640
Aroclor 1260	U	25	85000 W	440	17000 W	580	11000 W	2100	8100 W	640

Table 1.1 (cont.) Results of the Analysis for PCB in Dust
WA# 2-262 Cornell Dubilier

Client ID	12064		12065		12066		12067		12068	
Location	507 Hamilton-P		507 HAMILTON-LR		507 HAMILTON-DR		500 Garibaldi-LR		500 Garibaldi, DR/A	
Analyte	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
Aroclor 1016	U	30	U	150	U	210	U	21	U	150
Aroclor 1221	U	61	U	300	U	420	U	42	U	310
Aroclor 1232	U	30	U	150	U	210	U	21	U	150
Aroclor 1242	U	30	U	150	U	210	U	21	U	150
Aroclor 1248	U	30	U	150	U	210	U	21	U	150
Aroclor 1254	2500 W	30	30000 W	150	14000 W	210	38000 W	21	15000 W	150
Aroclor 1260	U	30	U	150	3500 W	210	4000 W	21	8800 W	150

Table 1.1 (cont.) Results of the Analysis for PCB in Dust
WA# 2-262 Cornell Dubilier

Client ID	12069		12070		12071		12072		12073	
Location	500 Garibaldi, BR		214 Spicer-Hallway		214 Spicer-Kid BR		214 Spicer-Fam Ro		108 Spicer-FR	
Analyte	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
Aroclor 1016	U	53	U	1300	U	2100	U	1600	U	190
Aroclor 1221	U	110	U	2500	U	4200	U	3100	U	370
Aroclor 1232	U	53	U	1300	U	2100	U	1600	U	190
Aroclor 1242	U	53	U	1300	U	2100	U	1600	U	190
Aroclor 1248	U	53	U	1300	U	2100	U	1600	U	190
Aroclor 1254	38000 W	53	7900 W	1300	1300 JW	2100	2800 W	1600	2500 W	190
Aroclor 1260	9200 W	53	U	1300	U	2100	U	1600	U	190

Table 1.1 (cont.) Results of the Analysis for PCB in Dust
WA# 2-262 Cornell Dubilier

Client ID	12074		12075		12076		12077		12078	
Location	108 Spicer-BR/Area		108 Spicer-Hallway/S		320 Spicer-Hallway		320 Spicer-LR		320 Spicer-Den	
Analyte	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
Aroclor 1016	U	390	U	360	U	44	U	79	U	24
Aroclor 1221	U	780	U	710	U	87	U	160	U	49
Aroclor 1232	U	390	U	360	U	44	U	79	U	24
Aroclor 1242	U	390	U	360	U	44	U	79	U	24
Aroclor 1248	U	390	U	360	U	44	U	79	U	24
Aroclor 1254	490 W	390	1300 W	360	1100 W	44	940 W	79	370 W	24
Aroclor 1260	U	390	540 W	360	U	44	U	79	U	24

Table 1.1 (cont.) Results of the Analysis for PCB in Dust
WA# 2-262 Cornell Dubilier

Client ID	12084		12085		12086		12087		12088	
Location	130 SPICER-SFLR		130 SPICER-SFBR		305 Spicer-FFLR		305 Spicer-Bas		233 Delmore-FFBR	
Analyte	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
Aroclor 1016	U	500	U	160	U	28	U	71	U	300
Aroclor 1221	U	1000	U	330	U	56	U	140	U	610
Aroclor 1232	U	500	U	160	U	28	U	71	U	300
Aroclor 1242	U	500	U	160	U	28	U	71	U	300
Aroclor 1248	U	500	U	160	U	28	U	71	U	300
Aroclor 1254	U	500	290 W	160	520 W	28	960 W	71	U	300
Aroclor 1260	U	500	U	160	U	28	U	71	U	300

Table 1.1 (cont.) Results of the Analysis for PCB in Dust
WA# 2-262 Cornell Dubilier

Client ID	12089		12090		12091		12092		12093	
Location	233 Delmore-LR		233 Delmore-2ndFLBR		210 SPICER-FFLR		210 SPICER-BOY Rm		210 SPICER-Family RM	
Analyte	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
Aroclor 1016	U	500	U	260	U	660	U	64	U	1100
Aroclor 1221	U	1000	U	530	U	1300	U	130	U	2200
Aroclor 1232	U	500	U	260	U	660	U	64	U	1100
Aroclor 1242	U	500	U	260	U	660	U	64	U	1100
Aroclor 1248	U	500	U	260	U	660	U	64	U	1100
Aroclor 1254	U	500	U	260	U	660	150 W	64	U	1100
Aroclor 1260	U	500	U	260	U	660	U	64	U	1100

Table 1.1 (cont.) Results of the Analysis for PCB in Dust
WA# 2-262 Cornell Dubilier

Client ID	12094		12095		12096	
Location	228 SPICER-FE		228 SPICER-LR		228 SPICER-BOY'S RM	
Analyte	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
Aroclor 1016	U	84	U	160	U	210
Aroclor 1221	U	170	U	310	U	410
Aroclor 1232	U	84	U	160	U	210
Aroclor 1242	U	84	U	160	U	210
Aroclor 1248	U	84	U	160	U	210
Aroclor 1254	330 W	84	U	160	U	210
Aroclor 1260	U	84	U	160	U	210

QA/QC for PCB in Dust

Results of Surrogate Recoveries for PCB in Dust

All samples were spiked with a two compound surrogate mixture (TCMX and DCBP) prior to the sample preparation. The results of the surrogate recoveries are listed in Table 2.1. Thirty-three out of fifty-six recoveries are within acceptable QC limits. The surrogate recoveries ranged from 11 to 423%.

Thirty surrogate results are not applicable, 18, due to dilution below detection limit, 12, due to matrix interference.

Results of the MS/MSD analysis for PCB in Dust

Samples 12064 and 12082 were chosen for MS/MSD analysis for PCB in dust. The results of the MS/MSD are listed in Table 2.2. The percent recoveries ranged from 84 to 166. Two % recoveries were not calculated due to PCB concentration in the sample being greater than 4X the spike concentration. No QC limits are available for this analysis.

The relative percent difference, also shown in Table 2.2, is 65. One RPD was not calculated since the spike data was not calculated. No QC limits are available for this analysis.

Table 2.1 Results of the Surrogate Recoveries for PCB in Dust
WA#2-262 Cornell Dubilier

Sample ID	Percent Recovery TCMX	DCBP
SBLK11219701	63	81
12060	D	D
12061	120	234 *
12062	95	185 *
12063	113	189 *
12064	D	D
12065	D	D
12066	110	106
12067	D	D
12068	D	D
12069	D	D
12070	119	95
12071	72	11 *
12072	66	13 *
12073	109	MI
12074	56 *	17 *
12075	72	MI
12076	108	MI
12077	108	MI
12078	105	MI
12079	423 *	MI
12064MS	D	D
12064MSD	D	D

	ADVISORY QC Limits
Tetrachloro-m-xylene (TCMX)	60-150
Decachlorobiphenyl (DCBP)	60-150

Table 2.1 (cont.) Results of the Surrogate Recoveries for PCB in Dust
WA#2-262 Cornell Dubilier

Sample ID	Percent Recovery TCMX	DCBP
SBLK11249701	92	145
12080	70	MI
12081	62	56 *
12082	65	30 *
12083	109	MI
12084	54 *	72
12085	57 *	MI
12086	105	MI
12087	D	D
12088	53 *	81
12089	59 *	172 *
12090	63	184 *
12091	63	176 *
12092	63	28 *
12093	67	182 *
12094	54 *	39 *
12095	43 *	77
12096	43 *	107
12082MS	69	MI
12082 MSD	97	MI

	ADVISORY QC Limits
Tetrachloro-m-xylene (TCMX)	60-150
Decachlorobiphenyl (DCBP)	60-150

Table 2.2 Results of the MS/MSD Analysis for PCB in Dust
WA#2-262 Cornell Dubilier

Sample ID: 12064
Location: 507 Hamilton Pky

Compound	Sample Conc (µg/kg)	MS Spike Added (µg/kg)	MS Conc (µg/kg)	MS % Rec	MSD Spike Added (µg/kg)	MSD Conc (µg/kg)	MSD % Rec	RPD
AR 1254	2542	121.951	3034	NC	121.951	2691	NC	NC

Sample ID: 12082
Location: 130 Spicer-LR

Compound	Sample Conc (µg/kg)	MS Spike Added (µg/kg)	MS Conc (µg/kg)	MS % Rec	MSD Spike Added (µg/kg)	MSD Conc (µg/kg)	MSD % Rec	RPD
AR 1254	123	125	228	84	125	330	166	65

REAC, Edison, NJ
(908) 321-4200
EPA Contract 68-C4-0022

CHAIN OF CUSTODY RECORD

Project Name: Cornell Dubilier
Project Number: 03347-142-001-2262-01
RFW Contact: Ken Robbins Phone: 732 321-4200

No: 05290

SHEET NO. 1 OF 2

200486

11/21/97

Sample Identification / **Analyses Requested**

REAC #	Sample No.	Sampling Location	Matrix	Date Collected	# of Bottles	Container/Preservative	PCBs	Weight (gr)
033	12060	204 Spicer-LR	X	11/17/97	1	4oz glass/None	✓	0.57
034	12061	" Kitch					✓	0.43
035	12062	" Child BR					✓	0.12
036	12063	" BR					✓	0.39
037 *	12064	507 Garibaldi Pkg					✓	24.89
038	12065	" -LR					✓	1.66
039	12066	" -DR					✓	1.18
040	12067	500 Garibaldi LR					✓	11.93
041	12068	" DR/Kit					✓	1.62
042	12069	" BR					✓	4.75
043	12070	214 Spicer-Hallway					✓	0.20
044	12071	" Kid BR					✓	0.12
045	12072	" Fam Room					✓	0.16
046	12073	108 Spicer-Fam Rm					✓	1.35
047	12074	" BR/Fam Rm					✓	0.64
048	12075	" Hallway/Stairs					✓	0.70
049	12076	320 Spicer-Hallway					✓	5.72
050	12077	" -LR					✓	3.15
051	12078	" -Den					✓	17.67
052	12079	501 Garibaldi FR		11/18/97			✓	2.20

Special Instructions:

Matrix:

SD -	Sediment	PW -	Potable Water	S -	Soil
DS -	Drum Solids	GW -	Groundwater	W -	Water
DL -	Drum Liquids	SW -	Surface Water	O -	Oil
X -	~~Other~~ DUST	SL -	Sludge	A -	Air

FOR SUBCONTRACTING USE ONLY

FROM CHAIN OF CUSTODY #

* Use this sample for MS/MSD

Items/Reason	Relinquished By	Date	Received By	Date	Time	Items/Reason	Relinquished By	Date	Received By	Date	Time
All/Analysis	MT Respo/Acids	11/21/97	Y. Exume	11/21/97	10:00	All Analysis	Y. Exume	11/21/97	K. Robbins	11/21/97	11:20 Am

FORM #4 8/94

00019

REAC, [redacted]on, NJ
(908) 321-4200
EPA Contract 68-C4-0022

CHA[redacted]OF CUSTODY RECORD

Project Name: Co[redacted]ll Dubilier
Project Number: 03347-142-001-2262-01
RFW Contact: Ken Robbins Phone: 732 321-4200

No: [redacted] 05551

SHEET NO. 2 OF 2

11/21/97

Sample Identification / **Analyses Requested**

REAC #	Sample No.	Sampling Location	Matrix	Date Collected	# of Bottles	Container/Preservative	PCBs	Weight (gr)		
053	12080	501 Garibaldi-NR	X	11/18/97	1	4-oz glass/None	✓	1.05		
054	12081	" Boys Room					✓	1.54		
055 *	12082	130 Spicer-LR					✓	25.78		
056	12083	-FF BR					✓	15.62		
057	12084	-SF LR					✓	0.50		
058	12085	-SF BR					✓	1.52		
059	12086	305 Spicer-FF-LR					✓	8.88		
060	12087	-Basement					✓	3.51		
061	12088	233 Delmore-FF BR					✓	0.82		
062	12089	-LR					✓	0.50		
063	12090	-2nd Fl BR					✓	0.95		
064	12091	210 Spicer-FF LR					✓	0.38		
065	12092	-Boys BR					✓	3.90		
066	12093	-Fam Room					✓	0.23		
067	12094	228 Spicer-Front Yard					✓	2.99		
068	12095	-LR					✓	1.61		
069	12096	-Boys Rm					✓	1.21		
		MD					✓	MD		

Matrix:

SD -	Sediment	PW -	Potable Water	S -	Soil
DS -	Drum Solids	GW -	Groundwater	W -	Water
DL -	Drum Liquids	SW -	Surface Water	O -	Oil
X -	Other DUST	SL -	Sludge	A -	Air

Special Instructions:

* Use this sample for MS/MSD

FOR SUBCONTRACTING USE ONLY

FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished By	Date	Received By	Date	Time	Items/Reason	Relinquished By	Date	Received By	Date	Time
All Analysis	M Trespalacios	11/21/97	[illegible]	11/21/97	10:00	All Analysis	[illegible]	11/21/97	[illegible]	11/21/97	11:30 am

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★ U.S. GPO 1994-383-015

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