SCS ENGINEERS







Montgomery County Waste Composition Study Summary of Results

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1 INTRODUCTION

Montgomery County of Maryland (the County) contracted with SCS Engineers (SCS) to conduct a waste composition analysis of waste generated within the county. The primary objective of the study is to determine the composition of the municipal solid waste stream received at the Montgomery County Transfer Station (Transfer Station). The Division of Solid Waste Services (DSWS) will use the waste characterization data in planning programs related to waste reduction, reuse, recycling, grass cycling, composting, and detoxification. The data will also be used to evaluate changes in the character, quantity, and sources of materials in the County's solid waste stream.

The basis for this waste characterization consists of four sampling events, conducted at the Montgomery County Transfer Station. The following five waste generating sectors were targeted for sampling:

- Single Family Subdistrict A;
- Single Family Subdistrict B;
- Single Family Municipal;
- Multi-Family Residential; and
- Non-Residential.

Collection Subdistrict A consists of approximately 92,000 single-family homes and multi-family buildings with six or fewer dwelling units in the southern third of the County for which the County has contracts with private haulers for waste collection. These contracts require that collected waste be dumped at the County's Transfer Station. Collection Subdistrict B comprises the remaining (approximately 120,000) single-family homes in the County. Waste collection in Subdistrict B is performed by private haulers that contract directly with individual homeowners. In addition, several incorporated municipalities (approximately 37,000 houses) within the County collect single-family residential wastes in municipal vehicles and dispose of the material at the Transfer Station.

The data generated by the field activities will be used by the County to develop long-term waste management strategies and to evaluate the effectiveness of current recycling programs. This report presents the data collected during each of the four seasonal activities. The remaining sections of this report are organized as follows:

- Section 2 describes field sampling and sorting methods.
- Section 3 presents compiled project data from the study.

2 METHODS

This section summarizes methods used to characterize the as disposed waste stream generated in Montgomery County. Sorting activities for the study took place during October 2012, January 2013, April 2013, and June 2013. Waste characterization activities were performed by manually sorting samples from municipal solid waste (MSW) into 64 distinct waste categories.

WASTE SAMPLING

Waste sample collection was performed on the transfer station floor during the operating hours of the facility and in conformance with ASTM D5231 – 92 (2003), Standard Test Method for Determination of the Composition of Unprocessed Municipal Waste. Given the limited size of the data set, it was important that unrepresentative data were avoided. Each day vehicles carrying waste from targeted sectors of the County were directed to dump their waste loads near the sorting area. SCS staff manually gathered samples from a randomly selected area of each target load (approximately two hundred pounds) for classification (sorting). Two important procedural factors were considered:

- The target vehicle selected for sampling contained MSW that was representative of the type of waste typically generated in that sector; and
- The process of acquiring the waste sample did not, in itself, alter the apparent MSW composition.

After being filled with solid waste, the trash cans were weighed and set aside until at least two hundred pounds from the discharged load had been selected for characterization. If an item was too large or bulky to be weighed and was in the sampling area, its weight was estimated and added to the sample. This process was repeated until samples had been collected from all of the targeted loads.

NUMBER OF SAMPLES

A total of 75 samples were collected during each season for a total of 300 samples during the entire project. During each season, the following numbers of samples were collected from each generating sector:

- Single Family Subdistrict A - 15 samples
- Single Family Subdistrict B - 15 samples
- Single Family Municipal - 5 samples
- Multi-Family Residential - 10 samples
- Non-Residential - 30 samples

WASTE SORTING

The sorting and weighing program for samples entailed the use of one sorting crew and an SCS Crew Supervisor. During each day of fieldwork, samples were collected from waste loads that were discharged at the Montgomery County Transfer Station. The basic procedures and objectives for sorting (as described below) were identical for each sample, each day. Sorting was performed as follows:

1. The sort crew transferred the refuse sample onto the sorting table until it was full and began sort activities. Large or heavy waste items, such as bags of yard waste, were torn open, examined and then placed directly into the appropriate waste container for subsequent weighing.

2. Plastic bags of refuse were opened and crew members manually segregated each item of waste, according to material categories defined in **Appendix B** and placed it in the appropriate waste container. These steps were repeated until the entire sample was sorted.

3. At the completion of sorting, the waste containers were moved to the scale where a representative of SCS weighed each category and recorded the net weight on the Sort Data Sheet. In most cases, measurements were made to the nearest 0.05 pounds.

4. After each waste category had been recorded, the recyclables were placed in hoppers and the waste materials were placed in a roll off container.

5. This four-step process was repeated until all of the day's samples taken at the site were characterized. Waste samples were maintained in as-disposed condition or as close to this as possible until the actual sorting began. Proper site layout and close supervision of sampling was maintained to avoid the need to repeatedly handle sampled wastes.

Members of the sorting crew were fully equipped with high visibility vests, puncture/cut resistant gloves, safety glasses, and tyvek suits. The Health and Safety Plan is presented in **Appendix C**.

Consistent with good practice in such sampling programs, efforts were made to minimize sampling bias or other impacts on the integrity of the database. To this end, field sampling had been coordinated to avoid holidays and other out of ordinary events.

DATA REDUCTION

There were 300 samples manually sorted during the four seasonal field activities. Data presented include mean percentages by weight, standard deviations, and statistical confidence intervals (95 percent confidence interval) for each group of data. Derivation of this data is as follows:

$$Mean\left(\overline{X}\right) = \sum_{i=1}^{n} x_i * \frac{1}{n};$$

$$Standard\ Deviation\ (s) = \sqrt{\frac{\left(n\sum x^2\right) - \left(\sum x\right)^2}{n(n-1)}}\ ;\ \text{and}$$

$$Upper/Lower\ Confidence\ Interval\ Limits = \overline{X} \pm \left[1.96 * \left(\frac{\sigma}{\sqrt{n}}\right)\right]$$

Where: n = number of samples; and
x = sample percentage.

Waste samples are acquired to estimate the County's true waste composition (i.e., the proportion of each waste component present in residential waste collected in the County). The mean is the arithmetic average of all data and the standard deviation is a measure of the dispersion in the data. Together, the mean and standard deviation determine the confidence interval. A 95 percent confidence interval contains the true proportion of a waste component with 95 percent confidence. Weighting ratios based on the actual total weights of solid waste being disposed at the transfer station were used to determine the overall composition.

3 SUMMARY OF RESULTS

MSW COMPOSITION

The following compositions present the compiled results of the four seasonal field efforts. To review the results from a specific season, please see **Appendix A**.

Weighted Overall Composition

Exhibit 2 presents an overall average waste composition weighted by sector. There were 300 waste samples collected from five sectors during the four seasonal field efforts. The composition includes confidence intervals based on the number of samples and variability between the samples. The weighting ratios per sector are presented in **Exhibit 1** and reflect the actual ratios of waste disposed at the County's Transfer Station during calendar year 2012. Based on the samples collected, the three largest subcomponents by weight of the waste stream are Food Waste (22.8 percent), Non-Recyclable Paper (9.5 percent), and Film Plastic - Other (7.9 percent). The three largest recyclable subcomponents are Other Recyclable Paper (3.7 percent), Paperboard (2.4 percent), and Corrugated Cardboard (2.4 percent).

Exhibit 1. Weight Ratios for the Generating Sectors

Sector	Weight Ratio
Single Family Subdistrict A	12.59%
Single Family Subdistrict B	17.13%
Single Family Municipal	5.42%
Multi-Family Residential	13.56%
Non-Residential	51.31%

Exhibit 2. Overall Weighted Waste Composition

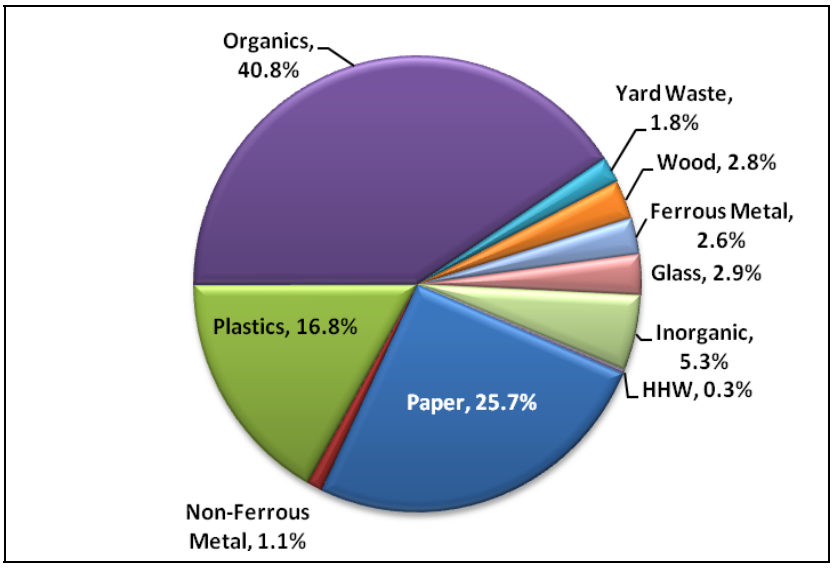

Exhibit 2. Weighted Overall Waste Composition (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.3%	3.0%	2.0%	2.7%
2 Corrugated Cardboard	2.4%	2.5%	2.1%	2.7%
3 Magazines	1.3%	1.6%	1.1%	1.4%
4 Paperboard	2.4%	1.7%	2.2%	2.6%
5 Aseptic/Poly-coated	1.9%	2.0%	1.6%	2.1%
6 Office Paper	1.7%	2.3%	1.4%	1.9%
7 Shredded Paper	0.3%	0.8%	0.2%	0.4%
8 Books	0.3%	1.2%	0.2%	0.5%
9 Other Recyclable Paper	3.7%	2.5%	3.4%	4.0%
10 Non-Recyclable Paper	9.5%	4.7%	8.9%	10.0%
Total Paper	**25.7%**			
PLASTIC				
11 PET (#1) Bottles	1.5%	1.5%	1.3%	1.7%
12 PET (#1) Trays and Tubs	0.6%	0.6%	0.5%	0.7%
13 HDPE (#2) Natural Bottles	0.4%	0.5%	0.3%	0.4%
14 HDPE (#2) Pigmented Bottles	0.4%	0.4%	0.3%	0.4%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	1.1%	1.1%	0.9%	1.2%
17 Other #6 -Polystyrene	0.9%	3.4%	0.5%	1.3%
18 Plastic Flower Pots	0.1%	1.1%	<0.1%	0.3%
19 Other Recyclable Containers/Tubs	1.3%	1.3%	1.2%	1.5%
20 Film Plastic - Shopping Bags	0.5%	0.7%	0.4%	0.5%
21 Film Plastic - Other	7.9%	3.9%	7.4%	8.3%
22 Other Rigid Plastic	2.1%	3.1%	1.8%	2.5%
Total Plastic	**16.8%**			
ORGANIC				
23 Food Waste	22.8%	15.8%	21.0%	24.6%
24 Clothing/Linens/Textiles/Leather	4.2%	4.7%	3.6%	4.7%
25 Carpets/Rugs	1.0%	4.9%	0.4%	1.5%
26 Rubber	<0.1%	0.2%	<0.1%	0.1%
27 Tires	0.2%	2.5%	<0.1%	0.5%
28 Diapers & Sanitary Products	3.3%	3.4%	2.9%	3.7%
29 Fines	2.3%	1.0%	2.2%	2.4%
30 Miscellaneous Organics	7.0%	2.0%	6.7%	7.2%
Total Organics	**40.7%**			
YARD WASTE				
31 Grass	0.3%	1.3%	0.2%	0.5%
32 Leaves	0.3%	1.4%	0.1%	0.4%
33 Brush/Pruning	1.2%	3.1%	0.9%	1.6%
Total Yard Waste	**1.8%**			

Exhibit 2. Weighted Overall Waste Composition (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.3%	1.7%	0.1%	0.5%
35 Pallets	0.1%	1.1%	<0.1%	0.3%
36 Other Wood	2.3%	4.6%	1.8%	2.8%
Total Wood	**2.8%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.3%	3.5%	1.0%	1.7%
38 Other Ferrous	1.2%	3.8%	0.8%	1.7%
Total Ferrous Metals	**2.6%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.5%	0.6%	0.4%	0.6%
40 Aluminum Tins/Foil	0.5%	0.5%	0.4%	0.5%
41 Other Aluminum	<0.1%	0.4%	<0.1%	0.1%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	0.6%	<0.1%	0.1%
Total Non-Ferrous Metals	**1.0%**			
GLASS				
45 Clear	1.5%	1.8%	1.3%	1.7%
46 Brown	0.5%	0.9%	0.4%	0.6%
47 Green	0.6%	1.2%	0.5%	0.8%
48 Non-container Glass	0.2%	0.9%	0.1%	0.3%
Total Glass	**2.9%**			
INORGANIC				
49 Concrete/Brick/Rock	0.4%	2.5%	0.2%	0.7%
50 Sheet Rock	0.4%	2.0%	0.2%	0.6%
51 Latex Paints	0.1%	1.2%	<0.1%	0.2%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	1.8%	4.1%	1.3%	2.2%
54 Miscellaneous Inorganic	2.6%	7.2%	1.8%	3.5%
Total Inorganics	**5.3%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	0.6%	<0.1%	0.1%
62 Fuel/Lubricants/Auto	<0.1%	0.2%	<0.1%	<0.1%
63 HW Containers	0.1%	1.0%	<0.1%	0.2%
64 Other Hazardous	<0.1%	0.6%	<0.1%	0.1%
Total Household Hazardous Wastes	**0.3%**			
TOTALS	**100.0%**			

Note: Composition based on 300 samples

Single Family Subdistrict A

Exhibit 3 presents a compilation of the 60 Single Family Subdistrict A residential waste samples collected and sorted during the four seasonal field efforts. The composition includes confidence intervals based on the number of samples and variability between the samples. Based on the samples collected, the three largest subcomponents, by weight, of the Single Family Subdistrict A waste stream are Food Waste (20.5 percent), Non-Recyclable Paper (11.0 percent), and Film Plastic - Other (8.3 percent). The three largest recyclable subcomponents are Other Recyclable Paper (4.3 percent), Paperboard (2.4 percent), and Newspaper/Newsprint (2.1 percent).

Exhibit 3. Single Family Subdistrict A Waste Composition

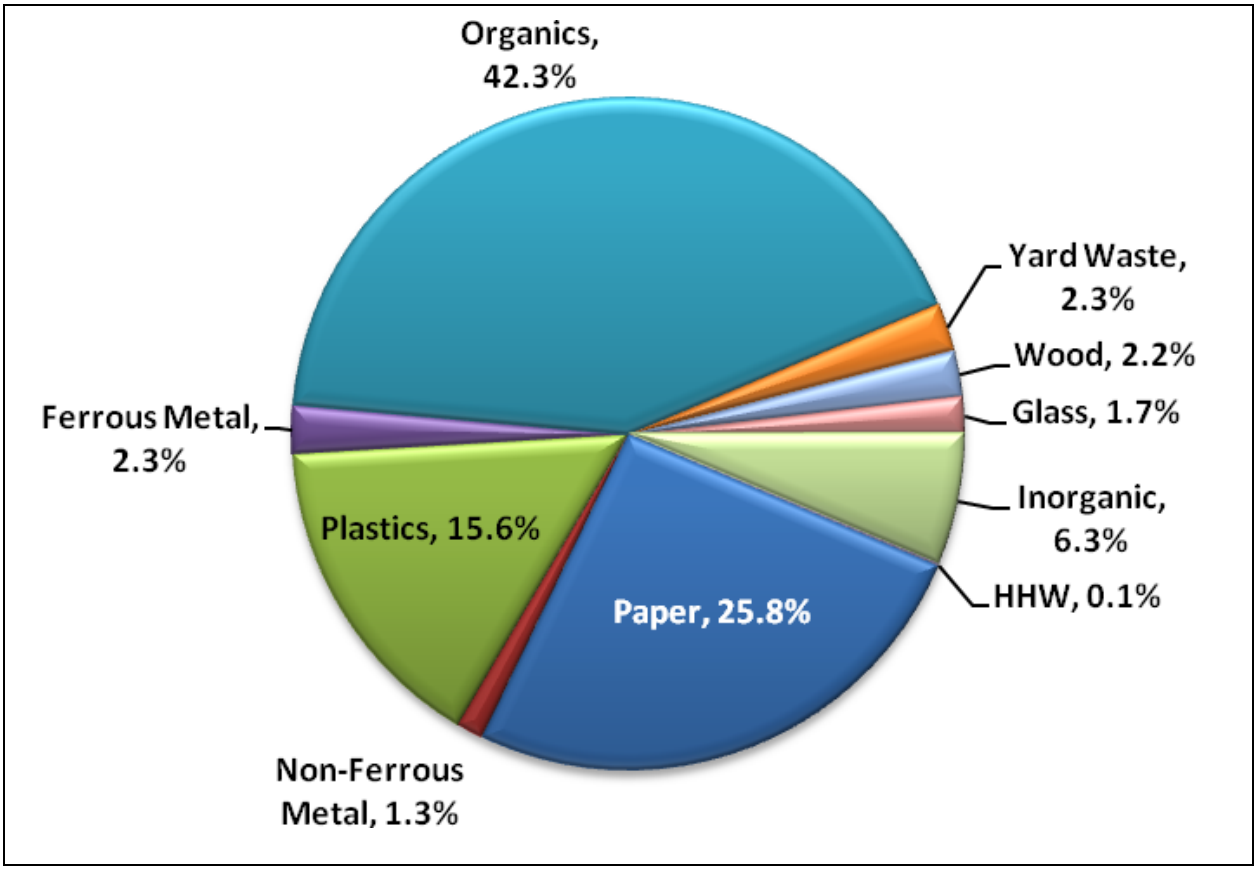

Exhibit 3. Single Family Subdistrict A Waste Composition (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.1%	1.8%	1.6%	2.5%
2 Corrugated Cardboard	1.0%	0.7%	0.8%	1.2%
3 Magazines	1.7%	1.6%	1.2%	2.1%
4 Paperboard	2.4%	1.4%	2.1%	2.8%
5 Aseptic/Poly-coated	1.3%	0.9%	1.1%	1.6%
6 Office Paper	1.3%	1.7%	0.8%	1.7%
7 Shredded Paper	0.3%	0.7%	0.1%	0.5%
8 Books	0.4%	1.0%	0.1%	0.7%
9 Other Recyclable Paper	4.3%	2.4%	3.7%	4.9%
10 Non-Recyclable Paper	11.0%	3.6%	10.1%	11.9%
Total Paper	**25.8%**			
PLASTIC				
11 PET (#1) Bottles	0.9%	0.5%	0.8%	1.0%
12 PET (#1) Trays and Tubs	0.6%	0.5%	0.5%	0.8%
13 HDPE (#2) Natural Bottles	0.2%	0.3%	0.1%	0.2%
14 HDPE (#2) Pigmented Bottles	0.4%	0.4%	0.3%	0.5%
15 #3-#7 Plastic Bottles	<0.1%	0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	1.1%	0.6%	0.9%	1.2%
17 Other #6 -Polystyrene	0.5%	0.3%	0.4%	0.6%
18 Plastic Flower Pots	0.2%	0.9%	<0.1%	0.5%
19 Other Recyclable Containers/Tubs	1.1%	0.7%	1.0%	1.3%
20 Film Plastic - Shopping Bags	0.5%	0.4%	0.4%	0.6%
21 Film Plastic - Other	8.3%	2.6%	7.6%	8.9%
22 Other Rigid Plastic	1.8%	2.0%	1.3%	2.3%
Total Plastic	**15.6%**			
ORGANIC				
23 Food Waste	20.5%	6.6%	18.8%	22.1%
24 Clothing/Linens/Textiles/Leather	6.0%	3.8%	5.1%	7.0%
25 Carpets/Rugs	0.6%	2.3%	<0.1%	1.2%
26 Rubber	<0.1%	<0.1%	<0.1%	<0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	4.8%	2.9%	4.1%	5.6%
29 Fines	2.6%	1.1%	2.3%	2.8%
30 Miscellaneous Organics	7.8%	1.3%	7.5%	8.2%
Total Organics	**42.3%**			
YARD WASTE				
31 Grass	0.4%	1.1%	0.1%	0.7%
32 Leaves	0.5%	1.9%	<0.1%	1.0%
33 Brush/Pruning	1.3%	2.0%	0.8%	1.8%
Total Yard Waste	**2.3%**			

Exhibit 3. Single Family Subdistrict A Waste Composition (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.3%	1.2%	<0.1%	0.6%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	1.9%	3.1%	1.1%	2.7%
Total Wood	**2.2%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	0.9%	0.8%	0.7%	1.1%
38 Other Ferrous	1.4%	4.9%	0.1%	2.6%
Total Ferrous Metals	**2.3%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.4%	0.5%	0.3%	0.6%
40 Aluminum Tins/Foil	0.6%	0.3%	0.5%	0.6%
41 Other Aluminum	<0.1%	0.3%	<0.1%	0.2%
42 Brass	<0.1%	0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	0.2%	1.1%	<0.1%	0.5%
Total Non-Ferrous Metals	**1.2%**			
GLASS				
45 Clear	0.9%	1.0%	0.7%	1.2%
46 Brown	0.2%	0.4%	0.1%	0.3%
47 Green	0.3%	0.7%	0.2%	0.5%
48 Non-container Glass	0.3%	0.6%	0.1%	0.4%
Total Glass	**1.7%**			
INORGANIC				
49 Concrete/Brick/Rock	1.3%	5.6%	<0.1%	2.7%
50 Sheet Rock	0.7%	2.6%	<0.1%	1.3%
51 Latex Paints	0.2%	0.7%	<0.1%	0.3%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	1.5%	2.4%	0.9%	2.1%
54 Miscellaneous Inorganic	2.7%	3.8%	1.7%	3.6%
Total Inorganics	**6.3%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	0.3%	<0.1%	0.1%
63 HW Containers	<0.1%	0.2%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**<0.1%**			
TOTALS	**100.0%**			

Note: Composition based on 60 samples

Single Family Subdistrict B

Exhibit 4 presents a compilation of the 31 waste samples collected and sorted during the four seasonal field efforts. The composition includes confidence intervals based on the number of samples and variability between the samples. Based on the samples collected, the three largest subcomponents, by weight, of the Single Family Subdistrict B waste stream are Food Waste (22.8 percent), Non-Recyclable Paper (10.2 percent), and Miscellaneous Organics (7.7 percent). The three largest recyclable subcomponents are Other Recyclable Paper (4.0 percent), Paperboard (2.3 percent), and Newspaper/Newsprint (2.2 percent).

Exhibit 4. Single Family Subdistrict B Waste Composition

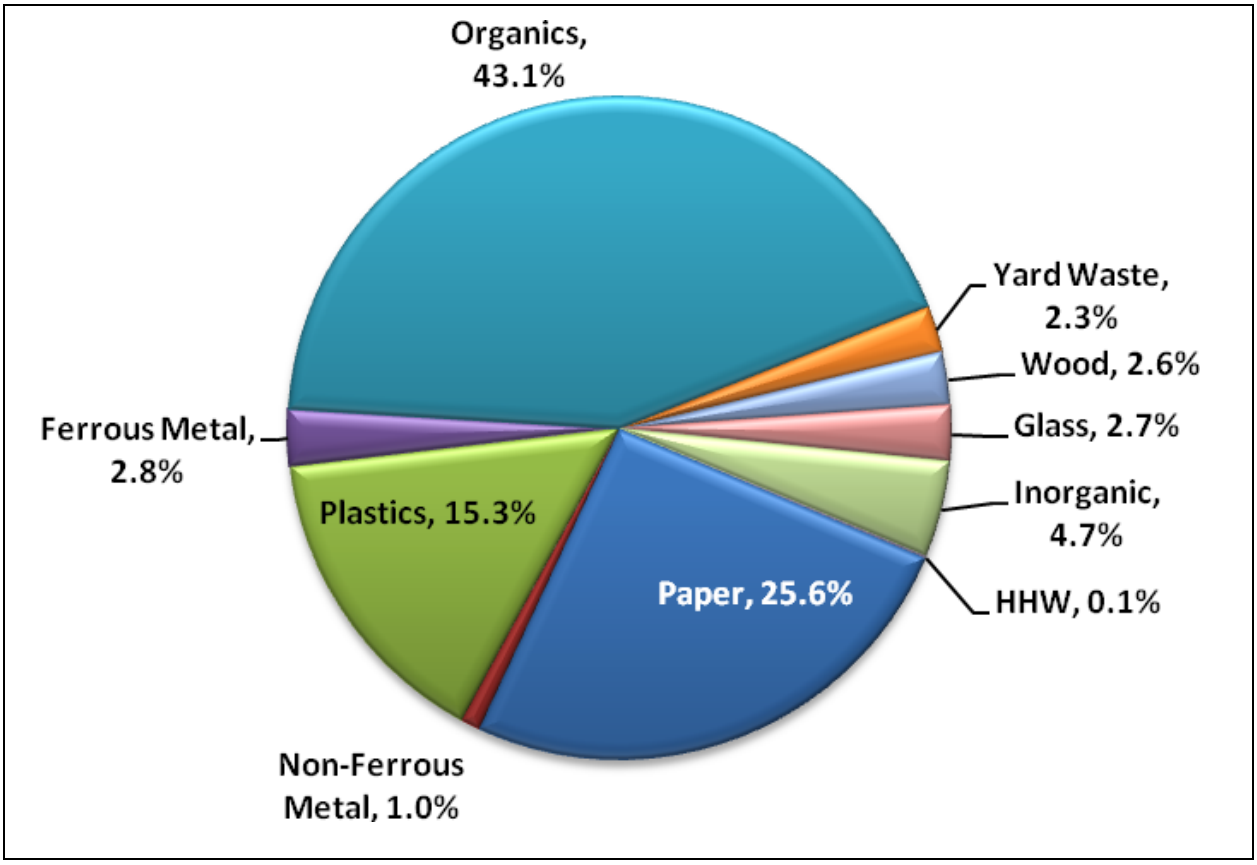

Exhibit 4. Single Family Subdistrict B Waste Composition (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.2%	1.4%	1.8%	2.6%
2 Corrugated Cardboard	1.2%	1.2%	0.9%	1.5%
3 Magazines	1.7%	1.4%	1.3%	2.1%
4 Paperboard	2.3%	1.1%	2.0%	2.6%
5 Aseptic/Poly-coated	1.9%	1.3%	1.6%	2.2%
6 Office Paper	1.1%	1.3%	0.7%	1.4%
7 Shredded Paper	0.5%	1.2%	0.2%	0.8%
8 Books	0.5%	1.2%	0.1%	0.8%
9 Other Recyclable Paper	4.0%	2.0%	3.5%	4.5%
10 Non-Recyclable Paper	10.2%	3.2%	9.4%	11.0%
Total Paper	**25.6%**			
PLASTIC				
11 PET (#1) Bottles	1.1%	0.6%	0.9%	1.2%
12 PET (#1) Trays and Tubs	0.7%	0.5%	0.5%	0.8%
13 HDPE (#2) Natural Bottles	0.3%	0.6%	0.1%	0.4%
14 HDPE (#2) Pigmented Bottles	0.4%	0.4%	0.3%	0.5%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	0.9%	0.6%	0.8%	1.1%
17 Other #6 -Polystyrene	0.6%	0.5%	0.5%	0.7%
18 Plastic Flower Pots	0.1%	0.4%	<0.1%	0.2%
19 Other Recyclable Containers/Tubs	1.1%	0.6%	0.9%	1.2%
20 Film Plastic - Shopping Bags	0.6%	0.4%	0.5%	0.7%
21 Film Plastic - Other	7.5%	2.5%	6.9%	8.2%
22 Other Rigid Plastic	2.1%	2.5%	1.4%	2.7%
Total Plastic	**15.3%**			
ORGANIC				
23 Food Waste	22.8%	7.5%	20.9%	24.8%
24 Clothing/Linens/Textiles/Leather	4.9%	4.0%	3.9%	5.9%
25 Carpets/Rugs	0.9%	2.7%	0.2%	1.6%
26 Rubber	<0.1%	0.1%	<0.1%	<0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	4.5%	2.8%	3.8%	5.2%
29 Fines	2.3%	1.0%	2.0%	2.6%
30 Miscellaneous Organics	7.7%	1.0%	7.4%	7.9%
Total Organics	**43.1%**			
YARD WASTE				
31 Grass	0.5%	1.7%	<0.1%	0.9%
32 Leaves	0.3%	1.3%	<0.1%	0.6%
33 Brush/Pruning	1.6%	2.2%	1.0%	2.1%
Total Yard Waste	**2.3%**			

Exhibit 4. Single Family Subdistrict B Waste Composition (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.3%	1.0%	<0.1%	0.5%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	2.3%	3.3%	1.4%	3.1%
Total Wood	**2.6%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.0%	0.6%	0.8%	1.1%
38 Other Ferrous	1.8%	5.1%	0.5%	3.1%
Total Ferrous Metals	**2.8%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.4%	0.3%	0.3%	0.5%
40 Aluminum Tins/Foil	0.5%	0.3%	0.4%	0.5%
41 Other Aluminum	<0.1%	0.2%	<0.1%	<0.1%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	0.4%	<0.1%	0.2%
Total Non-Ferrous Metals	**0.8%**			
GLASS				
45 Clear	1.4%	1.2%	1.1%	1.7%
46 Brown	0.4%	0.5%	0.3%	0.5%
47 Green	0.6%	0.8%	0.4%	0.8%
48 Non-container Glass	0.3%	0.7%	0.1%	0.5%
Total Glass	**2.7%**			
INORGANIC				
49 Concrete/Brick/Rock	0.3%	0.8%	<0.1%	0.5%
50 Sheet Rock	<0.1%	0.4%	<0.1%	0.1%
51 Latex Paints	0.4%	2.6%	<0.1%	1.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	1.6%	2.2%	1.0%	2.2%
54 Miscellaneous Inorganic	2.4%	4.1%	1.4%	3.4%
Total Inorganics	**4.7%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**<0.1%**			
TOTALS	**100.1%**			

Note: Composition based on 60 samples

Single Family Municipal

Exhibit 5 presents a compilation of the 50 residential waste samples collected and sorted during the four seasonal field efforts. The composition includes confidence intervals based on the number of samples and variability between the samples. Based on the samples collected, the three largest subcomponents, by weight, of the Single Family Municipal waste stream are Food Waste (19.7 percent), Non-Recyclable Paper (11.3 percent), and Miscellaneous Organics (8.1 percent). The three largest recyclable subcomponents are Other Recyclable Paper (4.7 percent), Paperboard (3.1 percent), and Newspaper/Newsprint (2.6 percent).

Exhibit 5. Single Family Municipal Waste Composition

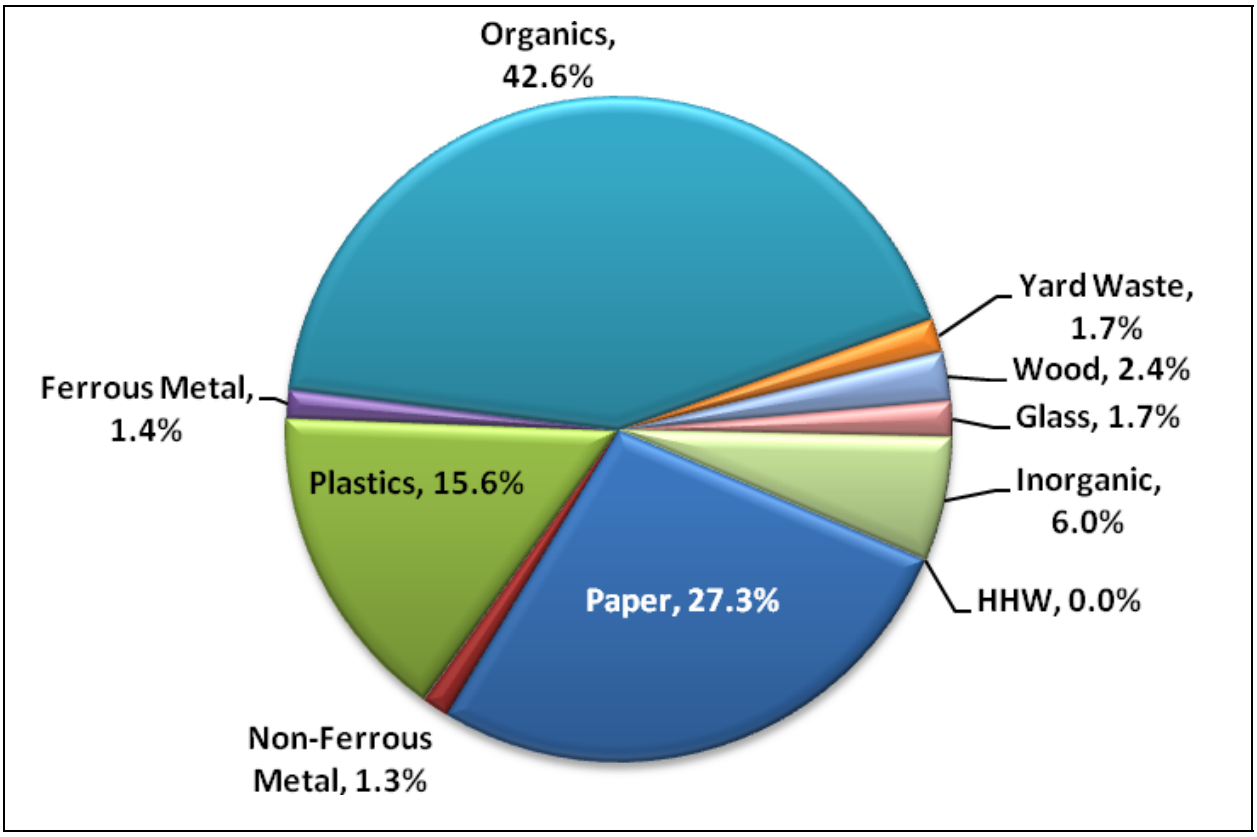

Exhibit 5. Single Family Municipal Waste Composition (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.6%	1.9%	1.8%	3.5%
2 Corrugated Cardboard	1.3%	0.8%	0.9%	1.7%
3 Magazines	1.2%	1.3%	0.6%	1.7%
4 Paperboard	3.1%	2.6%	2.0%	4.2%
5 Aseptic/Poly-coated	2.1%	1.3%	1.6%	2.7%
6 Office Paper	0.9%	0.8%	0.5%	1.2%
7 Shredded Paper	<0.1%	<0.1%	<0.1%	<0.1%
8 Books	0.1%	0.3%	<0.1%	0.2%
9 Other Recyclable Paper	4.7%	3.2%	3.2%	6.1%
10 Non-Recyclable Paper	11.3%	4.2%	9.5%	13.1%
Total Paper	**27.3%**			
PLASTIC				
11 PET (#1) Bottles	1.1%	0.8%	0.8%	1.5%
12 PET (#1) Trays and Tubs	0.7%	0.6%	0.5%	1.0%
13 HDPE (#2) Natural Bottles	0.2%	0.2%	<0.1%	0.3%
14 HDPE (#2) Pigmented Bottles	0.4%	0.3%	0.2%	0.5%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	1.0%	0.4%	0.8%	1.2%
17 Other #6 -Polystyrene	0.5%	0.5%	0.3%	0.8%
18 Plastic Flower Pots	0.1%	0.4%	<0.1%	0.3%
19 Other Recyclable Containers/Tubs	1.4%	0.7%	1.1%	1.7%
20 Film Plastic - Shopping Bags	0.5%	0.4%	0.3%	0.7%
21 Film Plastic - Other	7.8%	1.5%	7.2%	8.5%
22 Other Rigid Plastic	1.8%	1.2%	1.2%	2.3%
Total Plastic	**15.6%**			
ORGANIC				
23 Food Waste	19.7%	5.3%	17.4%	22.0%
24 Clothing/Linens/Textiles/Leather	5.2%	4.6%	3.2%	7.2%
25 Carpets/Rugs	0.8%	2.1%	<0.1%	1.8%
26 Rubber	<0.1%	<0.1%	<0.1%	<0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	5.8%	2.9%	4.5%	7.1%
29 Fines	3.1%	0.8%	2.7%	3.4%
30 Miscellaneous Organics	8.1%	1.0%	7.6%	8.5%
Total Organics	**42.6%**			
YARD WASTE				
31 Grass	0.2%	0.5%	<0.1%	0.4%
32 Leaves	0.1%	0.4%	<0.1%	0.3%
33 Brush/Pruning	1.4%	1.8%	0.6%	2.2%
Total Yard Waste	**1.7%**			

Exhibit 5. Single Family Municipal Waste Composition (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.5%	1.1%	<0.1%	1.0%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	1.9%	3.3%	0.5%	3.3%
Total Wood	**2.4%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	0.8%	0.5%	0.6%	1.1%
38 Other Ferrous	0.6%	0.7%	0.3%	0.9%
Total Ferrous Metals	**1.4%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.5%	0.7%	0.2%	0.7%
40 Aluminum Tins/Foil	0.8%	0.5%	0.6%	1.0%
41 Other Aluminum	<0.1%	<0.1%	<0.1%	<0.1%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	0.2%	<0.1%	0.2%
Total Non-Ferrous Metals	**1.2%**			
GLASS				
45 Clear	1.0%	0.9%	0.6%	1.4%
46 Brown	0.3%	0.3%	0.1%	0.4%
47 Green	0.3%	0.4%	0.1%	0.5%
48 Non-container Glass	0.2%	0.4%	<0.1%	0.3%
Total Glass	**1.7%**			
INORGANIC				
49 Concrete/Brick/Rock	0.1%	0.6%	<0.1%	0.4%
50 Sheet Rock	0.1%	0.6%	<0.1%	0.4%
51 Latex Paints	<0.1%	<0.1%	<0.1%	<0.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	2.0%	2.3%	1.0%	3.0%
54 Miscellaneous Inorganic	3.7%	4.8%	1.6%	5.8%
Total Inorganics	**6.0%**			
HHW				
55 Lead-Acid Batteries	<0.1%	0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**<0.1%**			
TOTALS	**100.0%**			

Note: Composition based on 20 samples

Multi-Family Residential

Exhibit 6 presents a compilation of the nineteen residential waste samples collected and sorted during the four seasonal field efforts. The composition includes confidence intervals based on the number of samples and variability between the samples. Based on the samples collected, the three largest subcomponents, by weight, of the Multi-Family waste stream are Food Waste (18.6 percent), Non-Recyclable Paper (7.5 percent), and Miscellaneous Organics (7.2 percent). The three largest recyclable subcomponents are Other Recyclable Paper (3.8 percent), Paperboard (3.2 percent), and Newspaper/Newsprint (2.9 percent).

Exhibit 6. Multi-Family Residential Waste Composition

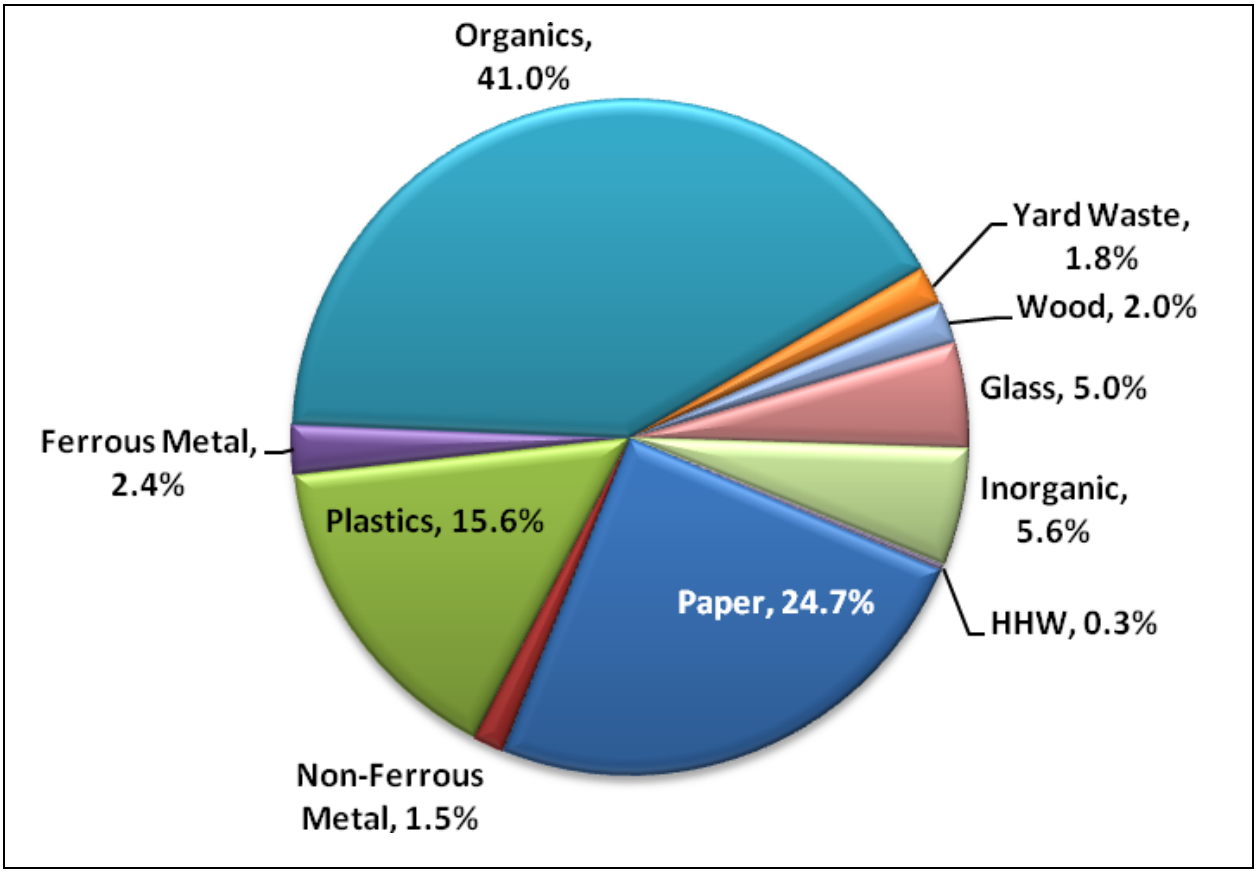

Exhibit 6. Multi-Family Waste Residential Composition (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.9%	2.1%	2.3%	3.6%
2 Corrugated Cardboard	2.3%	1.9%	1.7%	2.9%
3 Magazines	1.6%	2.0%	0.9%	2.2%
4 Paperboard	3.2%	1.4%	2.8%	3.7%
5 Aseptic/Poly-coated	1.0%	0.7%	0.8%	1.2%
6 Office Paper	1.6%	1.5%	1.2%	2.1%
7 Shredded Paper	0.2%	0.9%	<0.1%	0.5%
8 Books	0.6%	2.0%	<0.1%	1.2%
9 Other Recyclable Paper	3.8%	2.0%	3.1%	4.4%
10 Non-Recyclable Paper	7.5%	2.7%	6.7%	8.4%
Total Paper	**24.7%**			
PLASTIC				
11 PET (#1) Bottles	2.1%	0.8%	1.8%	2.3%
12 PET (#1) Trays and Tubs	0.6%	0.4%	0.5%	0.7%
13 HDPE (#2) Natural Bottles	0.5%	0.3%	0.4%	0.6%
14 HDPE (#2) Pigmented Bottles	0.5%	0.4%	0.4%	0.6%
15 #3-#7 Plastic Bottles	<0.1%	0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	0.9%	0.4%	0.8%	1.0%
17 Other #6 -Polystyrene	0.4%	0.5%	0.2%	0.6%
18 Plastic Flower Pots	<0.1%	0.2%	<0.1%	<0.1%
19 Other Recyclable Containers/Tubs	1.3%	0.8%	1.1%	1.6%
20 Film Plastic - Shopping Bags	0.6%	0.6%	0.4%	0.8%
21 Film Plastic - Other	6.6%	2.6%	5.7%	7.4%
22 Other Rigid Plastic	2.2%	3.3%	1.1%	3.2%
Total Plastic	**15.6%**			
ORGANIC				
23 Food Waste	18.6%	6.0%	16.7%	20.4%
24 Clothing/Linens/Textiles/Leather	5.4%	4.5%	4.0%	6.8%
25 Carpets/Rugs	1.3%	5.9%	<0.1%	3.2%
26 Rubber	<0.1%	0.3%	<0.1%	0.2%
27 Tires	0.2%	1.2%	<0.1%	0.6%
28 Diapers & Sanitary Products	6.0%	4.3%	4.7%	7.3%
29 Fines	2.2%	0.7%	2.0%	2.4%
30 Miscellaneous Organics	7.2%	1.2%	6.8%	7.5%
Total Organics	**40.9%**			
YARD WASTE				
31 Grass	0.3%	1.2%	<0.1%	0.6%
32 Leaves	0.4%	1.5%	<0.1%	0.9%
33 Brush/Pruning	1.2%	3.3%	0.1%	2.2%
Total Yard Waste	**1.8%**			

Exhibit 6. Multi-Family Residential Waste Composition (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.3%	1.1%	<0.1%	0.6%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	1.7%	2.9%	0.8%	2.6%
Total Wood	**2.0%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.5%	1.3%	1.1%	1.9%
38 Other Ferrous	0.9%	1.4%	0.5%	1.3%
Total Ferrous Metals	**2.4%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.7%	0.4%	0.6%	0.8%
40 Aluminum Tins/Foil	0.6%	0.5%	0.4%	0.7%
41 Other Aluminum	<0.1%	0.2%	<0.1%	0.1%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	0.2%	1.0%	<0.1%	0.5%
Total Non-Ferrous Metals	**1.4%**			
GLASS				
45 Clear	2.6%	1.7%	2.1%	3.2%
46 Brown	1.0%	1.1%	0.7%	1.4%
47 Green	0.9%	1.1%	0.6%	1.2%
48 Non-container Glass	0.5%	2.0%	<0.1%	1.1%
Total Glass	**5.0%**			
INORGANIC				
49 Concrete/Brick/Rock	<0.1%	0.3%	<0.1%	0.1%
50 Sheet Rock	0.3%	1.2%	<0.1%	0.7%
51 Latex Paints	<0.1%	0.2%	<0.1%	0.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	2.2%	4.9%	0.7%	3.8%
54 Miscellaneous Inorganic	3.0%	4.5%	1.6%	4.4%
Total Inorganics	**5.5%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	0.2%	0.8%	<0.1%	0.4%
64 Other Hazardous	<0.1%	0.4%	<0.1%	0.2%
Total Household Hazardous Wastes	**0.3%**			
TOTALS	**100.0%**			

Note: Composition based on 40 samples

Non-Residential

Exhibit 7 presents a compilation of the 120 Non-Residential waste samples collected and sorted during the four seasonal field efforts. The composition includes confidence intervals based on the number of samples and variability between the samples. Based on the samples collected, the three largest subcomponents, by weight, of the Non-Residential waste stream are Food Waste (24.8 percent), Non-Recyclable Paper (9.1 percent), and Film Plastic - Other (8.3 percent). The three largest recyclable subcomponents are Other Recyclable Paper (3.3 percent), Corrugated Cardboard (3.3 percent), and Newspaper/Newsprint (2.2 percent).

Exhibit 7. Non-Residential Waste Composition

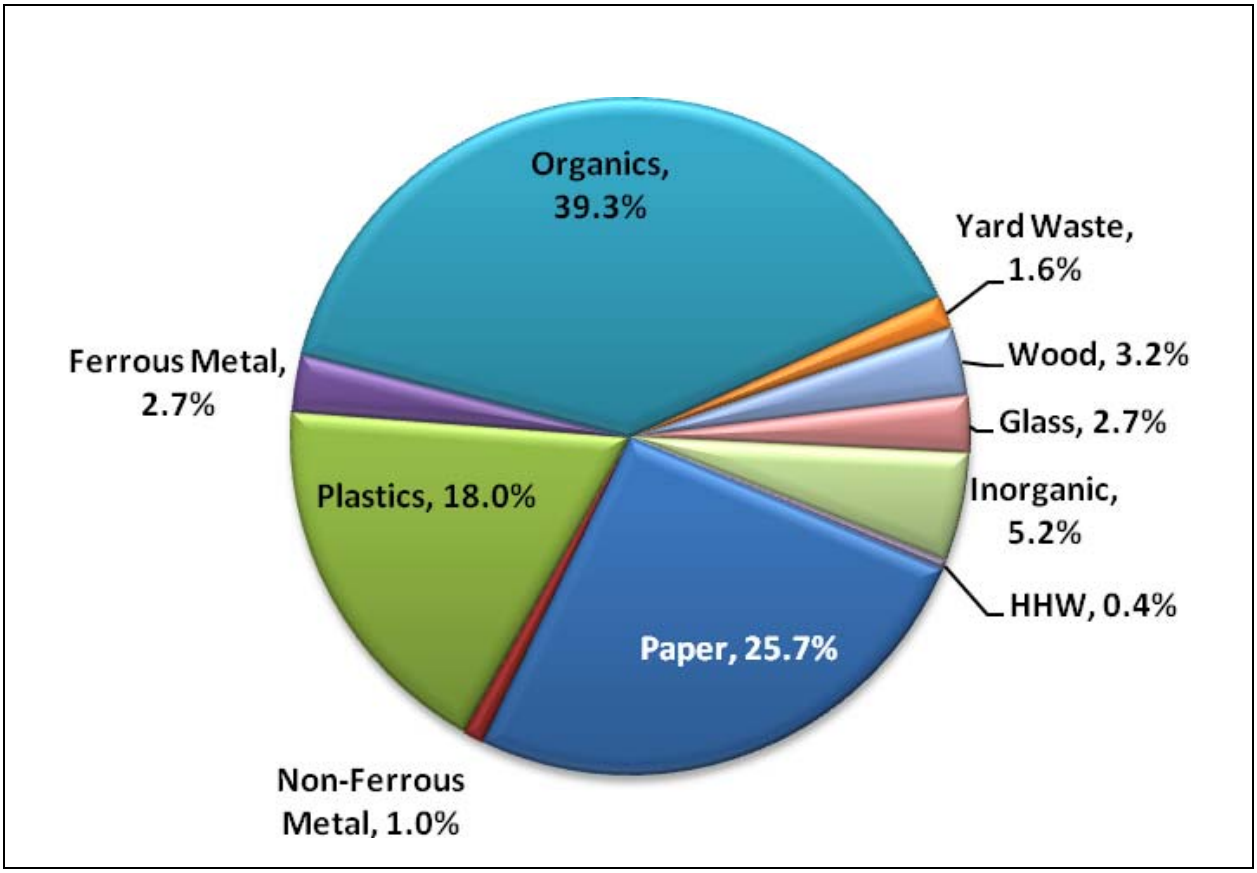

Exhibit 7. Non-Residential Composition (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.2%	3.8%	1.6%	2.9%
2 Corrugated Cardboard	3.3%	3.2%	2.8%	3.9%
3 Magazines	0.9%	1.6%	0.7%	1.2%
4 Paperboard	2.0%	2.0%	1.7%	2.4%
5 Aseptic/Poly-coated	2.2%	2.5%	1.7%	2.6%
6 Office Paper	2.1%	2.9%	1.6%	2.6%
7 Shredded Paper	0.2%	0.6%	0.1%	0.3%
8 Books	0.2%	1.0%	<0.1%	0.4%
9 Other Recyclable Paper	3.3%	2.7%	2.9%	3.8%
10 Non-Recyclable Paper	9.1%	5.8%	8.1%	10.2%
Total Paper	**25.7%**			
PLASTIC				
11 PET (#1) Bottles	1.7%	2.1%	1.3%	2.1%
12 PET (#1) Trays and Tubs	0.6%	0.7%	0.5%	0.7%
13 HDPE (#2) Natural Bottles	0.4%	0.5%	0.4%	0.5%
14 HDPE (#2) Pigmented Bottles	0.3%	0.4%	0.2%	0.4%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	1.2%	1.4%	0.9%	1.4%
17 Other #6 -Polystyrene	1.3%	4.7%	0.5%	2.2%
18 Plastic Flower Pots	0.1%	1.5%	<0.1%	0.4%
19 Other Recyclable Containers/Tubs	1.5%	1.7%	1.2%	1.8%
20 Film Plastic - Shopping Bags	0.4%	0.9%	0.2%	0.5%
21 Film Plastic - Other	8.3%	4.9%	7.4%	9.1%
22 Other Rigid Plastic	2.3%	3.6%	1.6%	2.9%
Total Plastic	**18.0%**			
ORGANIC				
23 Food Waste	24.8%	21.1%	21.0%	28.6%
24 Clothing/Linens/Textiles/Leather	3.0%	5.1%	2.1%	3.9%
25 Carpets/Rugs	1.0%	5.8%	<0.1%	2.0%
26 Rubber	0.1%	0.3%	<0.1%	0.2%
27 Tires	0.4%	3.5%	<0.1%	1.0%
28 Diapers & Sanitary Products	1.5%	3.6%	0.8%	2.1%
29 Fines	2.2%	1.0%	2.0%	2.3%
30 Miscellaneous Organics	6.3%	2.6%	5.9%	6.8%
Total Organics	**39.3%**			
YARD WASTE				
31 Grass	0.3%	1.4%	<0.1%	0.5%
32 Leaves	0.2%	1.4%	<0.1%	0.5%
33 Brush/Pruning	1.1%	3.6%	0.4%	1.7%
Total Yard Waste	**1.6%**			

Exhibit 7. Non-Residential Composition (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.4%	2.2%	<0.1%	0.8%
35 Pallets	0.3%	1.6%	<0.1%	0.6%
36 Other Wood	2.6%	5.6%	1.6%	3.6%
Total Wood	**3.2%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.6%	4.8%	0.7%	2.4%
38 Other Ferrous	1.2%	3.6%	0.5%	1.8%
Total Ferrous Metals	**2.7%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.5%	0.7%	0.4%	0.6%
40 Aluminum Tins/Foil	0.4%	0.5%	0.3%	0.5%
41 Other Aluminum	<0.1%	0.5%	<0.1%	0.2%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	0.3%	<0.1%	<0.1%
Total Non-Ferrous Metals	**0.9%**			
GLASS				
45 Clear	1.5%	2.1%	1.1%	1.9%
46 Brown	0.4%	1.1%	0.2%	0.6%
47 Green	0.6%	1.5%	0.4%	0.9%
48 Non-container Glass	0.2%	0.6%	<0.1%	0.3%
Total Glass	**2.7%**			
INORGANIC				
49 Concrete/Brick/Rock	0.4%	2.1%	<0.1%	0.8%
50 Sheet Rock	0.4%	2.3%	<0.1%	0.9%
51 Latex Paints	<0.1%	0.4%	<0.1%	0.1%
52 Fluorescent Lamps	<0.1%	0.1%	<0.1%	<0.1%
53 Electronics	1.7%	4.8%	0.9%	2.6%
54 Miscellaneous Inorganic	2.5%	9.2%	0.9%	4.2%
Total Inorganics	**5.1%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	0.1%	0.8%	<0.1%	0.3%
62 Fuel/Lubricants/Auto	<0.1%	0.2%	<0.1%	<0.1%
63 HW Containers	0.2%	1.4%	<0.1%	0.4%
64 Other Hazardous	0.1%	0.9%	<0.1%	0.3%
Total Household Hazardous Wastes	**0.4%**			
TOTALS	**100.0%**			

Note: Composition based on 120 samples

Appendix A
Seasonal Reports

Environmental Consultants

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SCS ENGINEERS

January 25, 2013
File No. 02212006.02

Sent via Electronic Mail

Raycharn Liou, Project Manager
Division of Solid Waste Services
Department of Environmental Protection
101 Monroe Street, Sixth Floor
Rockville, Maryland 20850

Subject: Montgomery County Waste Composition Study, Summary Report for Fall 2012

Dear Mr. Liou,

SCS Engineers (SCS) is pleased to resubmit this summary report on data gathered during waste characterization services performed at the Montgomery County Solid Waste Transfer Station for the Fall 2012 sampling event from October 4th through October 11th, 2012. This version of the results incorporates the waste generation ratios into the overall weighted composition in Table 1.

Summary of Results

A total of 75 waste samples were manually sorted into 64 distinct material categories during the field activity. The composition of each category is given as a percentage of the waste stream by weight. Results from the waste characterization are presented in the following tables:

- **Table 1** presents the Overall composition based on the average of all 75 samples that were collected and sorted across the five generating sectors.
- **Table 2** presents the Commercial waste composition based on the 30 samples that were collected and sorted from the commercial waste stream.
- **Table 3** presents the Multi-Family composition based on the 10 samples that were collected and sorted from the multi-family waste stream.
- **Table 4** presents the Single-Family Municipal composition. This composition is based on the 5 samples that were collected and sorted from the single-family municipal haulers.
- **Table 5** presents the Single-Family Subdistrict B composition. This composition is based on the 15 samples that were collected and sorted from the waste stream generated by single-family households located in subdistrict B.
- **Table 6** presents the Single-Family Subdistrict A composition. This composition is based on the 15 samples that were collected and sorted from the waste stream generated by single-family households located in subdistrict A.

Table 1 - Weighted Overall Waste Composition - Fall 2012

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.8%	3.1%	2.1%	3.5%
2 Corrugated Cardboard	2.8%	2.2%	2.3%	3.3%
3 Magazines	1.3%	1.2%	1.0%	1.6%
4 Paperboard	2.0%	1.5%	1.6%	2.3%
5 Aseptic/Poly-coated	1.8%	2.0%	1.3%	2.2%
6 Office Paper	1.8%	1.9%	1.3%	2.2%
7 Shredded Paper	0.1%	0.4%	<0.1%	0.2%
8 Books	0.1%	0.6%	<0.1%	0.3%
9 Other Recyclable Paper	3.3%	2.4%	2.8%	3.8%
10 Non-Recyclable Paper	7.9%	4.1%	6.9%	8.8%
Total Paper	**23.9%**			
PLASTIC				
11 PET (#1) Bottles	1.8%	2.6%	1.2%	2.3%
12 PET (#1) Trays and Tubs	0.6%	0.7%	0.4%	0.7%
13 HDPE (#2) Natural Bottles	0.5%	0.7%	0.4%	0.7%
14 HDPE (#2) Pigmented Bottles	0.5%	0.5%	0.4%	0.6%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	1.0%	0.7%	0.9%	1.2%
17 Other #6 -Polystyrene	0.7%	0.8%	0.5%	0.9%
18 Plastic Flower Pots	<0.1%	0.1%	<0.1%	<0.1%
19 Other Recyclable Containers/Tubs	1.6%	1.6%	1.3%	2.0%
20 Film Plastic - Shopping Bags	0.8%	0.8%	0.6%	1.0%
21 Film Plastic - Other	7.9%	3.4%	7.1%	8.7%
22 Other Rigid Plastic	1.6%	2.8%	1.0%	2.3%
Total Plastic	**17.0%**			
ORGANIC				
23 Food Waste	18.3%	12.4%	15.4%	21.1%
24 Clothing/Linens/Textiles/Leather	3.8%	3.4%	3.1%	4.6%
25 Carpets/Rugs	2.3%	9.2%	0.2%	4.3%
26 Rubber	<0.1%	0.2%	<0.1%	0.1%
27 Tires	0.8%	5.2%	<0.1%	2.0%
28 Diapers & Sanitary Products	2.7%	2.7%	2.1%	3.3%
29 Fines	2.1%	0.8%	1.9%	2.2%
30 Miscellaneous Organics	6.5%	2.3%	6.0%	7.0%
Total Organics	**36.4%**			
YARD WASTE				
31 Grass	0.5%	1.9%	0.1%	1.0%
32 Leaves	0.4%	1.4%	0.1%	0.8%
33 Brush/Pruning	1.7%	3.9%	0.8%	2.6%
Total Yard Waste	**2.7%**			

Table 1 - Weighted Overall Waste Composition - Fall 2012 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.2%	1.1%	<0.1%	0.5%
35 Pallets	0.4%	2.1%	<0.1%	0.9%
36 Other Wood	2.6%	4.6%	1.6%	3.7%
Total Wood	**3.3%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.2%	1.3%	0.9%	1.5%
38 Other Ferrous	2.7%	6.2%	1.3%	4.1%
Total Ferrous Metals	**3.9%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.5%	0.8%	0.3%	0.7%
40 Aluminum Tins/Foil	0.5%	0.4%	0.4%	0.5%
41 Other Aluminum	<0.1%	0.3%	<0.1%	0.1%
42 Brass	<0.1%	0.1%	<0.1%	<0.1%
43 Copper	<0.1%	0.2%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	0.3%	<0.1%	0.1%
Total Non-Ferrous Metals	**0.9%**			
GLASS				
45 Clear	1.8%	2.2%	1.3%	2.2%
46 Brown	0.7%	1.1%	0.4%	0.9%
47 Green	0.7%	1.4%	0.4%	1.0%
48 Non-container Glass	0.4%	1.6%	<0.1%	0.8%
Total Glass	**3.5%**			
INORGANIC				
49 Concrete/Brick/Rock	1.1%	3.4%	0.3%	1.8%
50 Sheet Rock	0.6%	1.9%	0.2%	1.0%
51 Latex Paints	0.3%	2.2%	<0.1%	0.8%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	2.5%	4.7%	1.4%	3.5%
54 Miscellaneous Inorganic	3.2%	9.5%	1.1%	5.4%
Total Inorganics	**7.7%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	0.3%	1.2%	<0.1%	0.5%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	0.1%	0.6%	<0.1%	0.2%
64 Other Hazardous	<0.1%	0.6%	<0.1%	0.2%
Total Household Hazardous Wastes	**0.5%**			
TOTALS	**100.0%**			

Note: Composition based on 75 samples

Table 2 - Commercial Waste Composition - Fall 2012

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.8%	3.8%	1.5%	4.2%
2 Corrugated Cardboard	3.7%	2.5%	2.8%	4.5%
3 Magazines	0.8%	0.9%	0.5%	1.2%
4 Paperboard	1.7%	1.6%	1.2%	2.3%
5 Aseptic/Poly-coated	1.8%	2.3%	1.0%	2.6%
6 Office Paper	1.9%	2.4%	1.1%	2.8%
7 Shredded Paper	0.1%	0.4%	<0.1%	0.3%
8 Books	<0.1%	0.3%	<0.1%	0.2%
9 Other Recyclable Paper	3.1%	2.6%	2.2%	4.0%
10 Non-Recyclable Paper	7.5%	4.6%	5.8%	9.1%
Total Paper	**23.5%**			
PLASTIC				
11 PET (#1) Bottles	2.1%	3.4%	0.9%	3.3%
12 PET (#1) Trays and Tubs	0.6%	0.8%	0.3%	0.9%
13 HDPE (#2) Natural Bottles	0.6%	0.6%	0.4%	0.8%
14 HDPE (#2) Pigmented Bottles	0.6%	0.7%	0.3%	0.8%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	1.0%	0.7%	0.8%	1.3%
17 Other #6 -Polystyrene	0.8%	1.0%	0.4%	1.1%
18 Plastic Flower Pots	<0.1%	<0.1%	<0.1%	<0.1%
19 Other Recyclable Containers/Tubs	1.9%	2.1%	1.1%	2.6%
20 Film Plastic - Shopping Bags	0.7%	0.9%	0.3%	1.0%
21 Film Plastic - Other	7.7%	3.7%	6.4%	9.0%
22 Other Rigid Plastic	1.4%	2.6%	0.4%	2.3%
Total Plastic	**17.3%**			
ORGANIC				
23 Food Waste	19.8%	16.1%	14.0%	25.5%
24 Clothing/Linens/Textiles/Leather	2.7%	2.9%	1.7%	3.8%
25 Carpets/Rugs	2.6%	10.8%	<0.1%	6.5%
26 Rubber	0.1%	0.3%	<0.1%	0.2%
27 Tires	1.3%	6.9%	<0.1%	3.7%
28 Diapers & Sanitary Products	1.1%	1.8%	0.5%	1.7%
29 Fines	1.9%	0.8%	1.7%	2.2%
30 Miscellaneous Organics	5.9%	2.8%	4.9%	6.9%
Total Organics	**35.4%**			
YARD WASTE				
31 Grass	0.6%	2.2%	<0.1%	1.4%
32 Leaves	<0.1%	0.2%	<0.1%	0.1%
33 Brush/Pruning	1.5%	3.7%	0.2%	2.8%
Total Yard Waste	**2.1%**			

Table 2 - Commercial Waste Composition - Fall 2012 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	<0.1%	<0.1%	<0.1%	<0.1%
35 Pallets	0.7%	2.8%	<0.1%	1.7%
36 Other Wood	3.0%	5.4%	1.1%	4.9%
Total Wood	**3.7%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.3%	1.6%	0.8%	1.9%
38 Other Ferrous	2.8%	6.4%	0.5%	5.1%
Total Ferrous Metals	**4.1%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.5%	1.0%	0.2%	0.9%
40 Aluminum Tins/Foil	0.4%	0.4%	0.2%	0.5%
41 Other Aluminum	<0.1%	0.3%	<0.1%	0.2%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	0.2%	<0.1%	0.1%
44 Other Non-Ferrous	<0.1%	<0.1%	<0.1%	<0.1%
Total Non-Ferrous Metals	**0.9%**			
GLASS				
45 Clear	1.9%	2.7%	1.0%	2.9%
46 Brown	0.7%	1.3%	0.2%	1.2%
47 Green	0.8%	1.8%	0.2%	1.5%
48 Non-container Glass	0.1%	0.3%	<0.1%	0.2%
Total Glass	**3.6%**			
INORGANIC				
49 Concrete/Brick/Rock	1.4%	3.9%	<0.1%	2.8%
50 Sheet Rock	0.7%	2.2%	<0.1%	1.5%
51 Latex Paints	0.1%	0.8%	<0.1%	0.4%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	2.1%	4.1%	0.7%	3.6%
54 Miscellaneous Inorganic	4.0%	12.1%	<0.1%	8.4%
Total Inorganics	**8.4%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	0.5%	1.5%	<0.1%	1.0%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	0.1%	0.8%	<0.1%	0.4%
Total Household Hazardous Wastes	**0.6%**			
TOTALS	**100.0%**			

Note: Composition based on 30 samples

Table 3 - Multi-Family Waste Composition - Fall 2012

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	3.0%	2.1%	1.7%	4.4%
2 Corrugated Cardboard	2.8%	2.9%	1.0%	4.6%
3 Magazines	1.6%	1.6%	0.6%	2.6%
4 Paperboard	2.7%	1.3%	1.9%	3.5%
5 Aseptic/Poly-coated	1.2%	1.0%	0.6%	1.8%
6 Office Paper	1.9%	1.2%	1.2%	2.6%
7 Shredded Paper	0.3%	0.5%	<0.1%	0.6%
8 Books	<0.1%	<0.1%	<0.1%	<0.1%
9 Other Recyclable Paper	3.2%	2.1%	1.9%	4.6%
10 Non-Recyclable Paper	5.4%	1.8%	4.3%	6.6%
Total Paper	**22.1%**			
PLASTIC				
11 PET (#1) Bottles	1.9%	0.7%	1.5%	2.4%
12 PET (#1) Trays and Tubs	0.4%	0.3%	0.3%	0.6%
13 HDPE (#2) Natural Bottles	0.4%	0.3%	0.2%	0.6%
14 HDPE (#2) Pigmented Bottles	0.5%	0.3%	0.3%	0.6%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	1.0%	0.6%	0.6%	1.4%
17 Other #6 -Polystyrene	0.6%	0.8%	0.1%	1.1%
18 Plastic Flower Pots	<0.1%	<0.1%	<0.1%	<0.1%
19 Other Recyclable Containers/Tubs	1.3%	0.5%	1.0%	1.6%
20 Film Plastic - Shopping Bags	1.3%	0.9%	0.7%	1.9%
21 Film Plastic - Other	6.6%	2.8%	4.9%	8.3%
22 Other Rigid Plastic	1.2%	1.7%	0.2%	2.3%
Total Plastic	**15.3%**			
ORGANIC				
23 Food Waste	13.5%	4.5%	10.7%	16.3%
24 Clothing/Linens/Textiles/Leather	4.7%	3.4%	2.6%	6.7%
25 Carpets/Rugs	4.1%	11.3%	<0.1%	11.1%
26 Rubber	<0.1%	0.2%	<0.1%	0.2%
27 Tires	0.7%	2.4%	<0.1%	2.2%
28 Diapers & Sanitary Products	5.9%	4.7%	3.0%	8.9%
29 Fines	2.0%	0.9%	1.5%	2.5%
30 Miscellaneous Organics	6.8%	1.4%	6.0%	7.6%
Total Organics	**37.6%**			
YARD WASTE				
31 Grass	1.0%	2.3%	<0.1%	2.5%
32 Leaves	1.6%	2.7%	<0.1%	3.3%
33 Brush/Pruning	2.3%	6.2%	<0.1%	6.1%
Total Yard Waste	**4.9%**			

Table 3 - Multi-Family Waste Composition - Fall 2012 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	1.0%	2.1%	<0.1%	2.3%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	1.6%	4.2%	<0.1%	4.2%
Total Wood	**2.6%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.2%	0.6%	0.8%	1.6%
38 Other Ferrous	1.5%	2.3%	0.1%	3.0%
Total Ferrous Metals	**2.7%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.3%	0.2%	0.2%	0.5%
40 Aluminum Tins/Foil	0.5%	0.8%	<0.1%	1.0%
41 Other Aluminum	<0.1%	<0.1%	<0.1%	<0.1%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	<0.1%	<0.1%	<0.1%
Total Non-Ferrous Metals	**0.9%**			
GLASS				
45 Clear	2.0%	1.7%	0.9%	3.0%
46 Brown	1.1%	1.2%	0.3%	1.9%
47 Green	0.6%	0.8%	0.1%	1.1%
48 Non-container Glass	1.4%	4.0%	<0.1%	3.9%
Total Glass	**5.1%**			
INORGANIC				
49 Concrete/Brick/Rock	0.2%	0.6%	<0.1%	0.5%
50 Sheet Rock	1.1%	2.2%	<0.1%	2.4%
51 Latex Paints	<0.1%	<0.1%	<0.1%	<0.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	5.4%	8.8%	<0.1%	10.9%
54 Miscellaneous Inorganic	1.2%	2.0%	<0.1%	2.4%
Total Inorganics	**7.8%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	0.2%	<0.1%	0.2%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	0.7%	1.7%	<0.1%	1.7%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**0.7%**			
TOTALS	**100.0%**			

Note: Composition based on 10 samples

Table 4 - Single Family Municipal Waste Composition - Fall 2012

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	3.4%	2.5%	1.2%	5.5%
2 Corrugated Cardboard	1.4%	1.0%	0.5%	2.3%
3 Magazines	1.7%	1.8%	0.1%	3.3%
4 Paperboard	1.9%	0.8%	1.2%	2.5%
5 Aseptic/Poly-coated	2.9%	1.7%	1.4%	4.4%
6 Office Paper	0.6%	0.4%	0.3%	0.9%
7 Shredded Paper	<0.1%	<0.1%	<0.1%	<0.1%
8 Books	<0.1%	<0.1%	<0.1%	<0.1%
9 Other Recyclable Paper	4.3%	1.9%	2.6%	6.0%
10 Non-Recyclable Paper	9.9%	4.1%	6.3%	13.6%
Total Paper	**26.0%**			
PLASTIC				
11 PET (#1) Bottles	0.8%	0.2%	0.6%	0.9%
12 PET (#1) Trays and Tubs	0.6%	0.5%	0.1%	1.0%
13 HDPE (#2) Natural Bottles	0.4%	0.3%	0.1%	0.6%
14 HDPE (#2) Pigmented Bottles	0.2%	0.2%	<0.1%	0.3%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	1.0%	0.5%	0.6%	1.4%
17 Other #6 -Polystyrene	0.8%	1.0%	<0.1%	1.6%
18 Plastic Flower Pots	<0.1%	0.1%	<0.1%	0.2%
19 Other Recyclable Containers/Tubs	1.5%	1.1%	0.5%	2.5%
20 Film Plastic - Shopping Bags	0.8%	0.4%	0.4%	1.2%
21 Film Plastic - Other	7.8%	1.2%	6.7%	8.9%
22 Other Rigid Plastic	2.7%	1.7%	1.1%	4.2%
Total Plastic	**16.4%**			
ORGANIC				
23 Food Waste	16.4%	3.1%	13.7%	19.1%
24 Clothing/Linens/Textiles/Leather	6.9%	6.7%	1.1%	12.8%
25 Carpets/Rugs	1.7%	3.9%	<0.1%	5.1%
26 Rubber	<0.1%	<0.1%	<0.1%	<0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	6.6%	2.0%	4.9%	8.3%
29 Fines	3.4%	1.0%	2.6%	4.3%
30 Miscellaneous Organics	7.7%	1.2%	6.7%	8.7%
Total Organics	**42.8%**			
YARD WASTE				
31 Grass	<0.1%	<0.1%	<0.1%	<0.1%
32 Leaves	<0.1%	<0.1%	<0.1%	<0.1%
33 Brush/Pruning	1.6%	2.0%	<0.1%	3.4%
Total Yard Waste	**1.6%**			

Table 4 - Single Family Municipal Waste Composition - Fall 2012 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.2%	0.5%	<0.1%	0.6%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	1.3%	2.2%	<0.1%	3.3%
Total Wood	**1.5%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.1%	0.6%	0.6%	1.6%
38 Other Ferrous	1.2%	0.8%	0.5%	2.0%
Total Ferrous Metals	**2.3%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.2%	<0.1%	0.1%	0.2%
40 Aluminum Tins/Foil	0.9%	0.5%	0.5%	1.3%
41 Other Aluminum	<0.1%	<0.1%	<0.1%	<0.1%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	<0.1%	<0.1%	<0.1%
Total Non-Ferrous Metals	**1.1%**			
GLASS				
45 Clear	1.7%	1.0%	0.8%	2.5%
46 Brown	0.3%	0.4%	<0.1%	0.6%
47 Green	0.1%	0.2%	<0.1%	0.3%
48 Non-container Glass	0.5%	0.7%	<0.1%	1.1%
Total Glass	**2.6%**			
INORGANIC				
49 Concrete/Brick/Rock	0.6%	1.3%	<0.1%	1.7%
50 Sheet Rock	<0.1%	<0.1%	<0.1%	<0.1%
51 Latex Paints	<0.1%	<0.1%	<0.1%	<0.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	2.6%	2.3%	0.6%	4.6%
54 Miscellaneous Inorganic	2.4%	3.1%	<0.1%	5.2%
Total Inorganics	**5.6%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**<0.1%**			
TOTALS	**100.0%**			

Note: Composition based on 5 samples

Table 5 - Single Family Subdistrict B Waste Composition - Fall 2012

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.2%	1.1%	1.7%	2.8%
2 Corrugated Cardboard	1.3%	1.0%	0.7%	1.8%
3 Magazines	2.1%	1.3%	1.5%	2.8%
4 Paperboard	1.9%	1.2%	1.3%	2.5%
5 Aseptic/Poly-coated	2.3%	1.9%	1.4%	3.3%
6 Office Paper	1.5%	1.1%	0.9%	2.0%
7 Shredded Paper	0.1%	0.3%	<0.1%	0.2%
8 Books	0.4%	1.2%	<0.1%	1.1%
9 Other Recyclable Paper	3.8%	2.1%	2.8%	4.9%
10 Non-Recyclable Paper	9.5%	4.2%	7.3%	11.6%
Total Paper	**25.2%**			
PLASTIC				
11 PET (#1) Bottles	1.0%	0.7%	0.7%	1.3%
12 PET (#1) Trays and Tubs	0.6%	0.4%	0.4%	0.8%
13 HDPE (#2) Natural Bottles	0.5%	1.1%	<0.1%	1.1%
14 HDPE (#2) Pigmented Bottles	0.4%	0.5%	0.2%	0.7%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	0.7%	0.4%	0.5%	0.9%
17 Other #6 -Polystyrene	0.5%	0.4%	0.3%	0.7%
18 Plastic Flower Pots	<0.1%	0.2%	<0.1%	0.2%
19 Other Recyclable Containers/Tubs	1.2%	0.6%	1.0%	1.5%
20 Film Plastic - Shopping Bags	0.8%	0.5%	0.5%	1.0%
21 Film Plastic - Other	8.7%	3.5%	7.0%	10.5%
22 Other Rigid Plastic	2.3%	3.8%	0.4%	4.2%
Total Plastic	**16.9%**			
ORGANIC				
23 Food Waste	17.9%	4.1%	15.8%	19.9%
24 Clothing/Linens/Textiles/Leather	4.8%	3.7%	3.0%	6.7%
25 Carpets/Rugs	0.9%	2.5%	<0.1%	2.1%
26 Rubber	0.1%	0.2%	<0.1%	0.2%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	3.9%	3.0%	2.4%	5.4%
29 Fines	2.0%	0.8%	1.6%	2.5%
30 Miscellaneous Organics	7.1%	1.5%	6.3%	7.9%
Total Organics	**36.7%**			
YARD WASTE				
31 Grass	0.2%	0.6%	<0.1%	0.5%
32 Leaves	1.1%	2.4%	<0.1%	2.3%
33 Brush/Pruning	1.9%	3.6%	<0.1%	3.7%
Total Yard Waste	**3.1%**			

Table 5 - Single Family Subdistrict B Waste Composition - Fall 2012 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	<0.1%	0.3%	<0.1%	0.3%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	2.2%	3.0%	0.7%	3.8%
Total Wood	**2.2%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.0%	0.5%	0.8%	1.3%
38 Other Ferrous	4.1%	9.0%	<0.1%	8.7%
Total Ferrous Metals	**5.1%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.4%	0.3%	0.3%	0.6%
40 Aluminum Tins/Foil	0.4%	0.2%	0.3%	0.5%
41 Other Aluminum	<0.1%	<0.1%	<0.1%	<0.1%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	0.2%	0.6%	<0.1%	0.5%
Total Non-Ferrous Metals	**1.0%**			
GLASS				
45 Clear	1.4%	1.2%	0.8%	2.0%
46 Brown	0.3%	0.5%	<0.1%	0.6%
47 Green	0.6%	0.5%	0.3%	0.9%
48 Non-container Glass	0.4%	1.1%	<0.1%	1.0%
Total Glass	**2.8%**			
INORGANIC				
49 Concrete/Brick/Rock	0.4%	1.3%	<0.1%	1.1%
50 Sheet Rock	0.2%	0.7%	<0.1%	0.6%
51 Latex Paints	1.5%	5.3%	<0.1%	4.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	1.5%	1.8%	0.5%	2.4%
54 Miscellaneous Inorganic	3.2%	5.8%	0.3%	6.2%
Total Inorganics	**6.7%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**0.2%**			
TOTALS	**100.1%**			

Note: Composition based on 15 samples

Table 6 - Single Family Subdistrict A Waste Composition - Fall 2012

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	3.0%	2.5%	1.8%	4.2%
2 Corrugated Cardboard	1.4%	0.9%	0.9%	1.8%
3 Magazines	2.2%	1.7%	1.3%	3.1%
4 Paperboard	2.3%	1.2%	1.7%	2.9%
5 Aseptic/Poly-coated	1.4%	0.8%	1.0%	1.8%
6 Office Paper	1.4%	1.3%	0.8%	2.1%
7 Shredded Paper	0.2%	0.7%	<0.1%	0.6%
8 Books	0.1%	0.5%	<0.1%	0.4%
9 Other Recyclable Paper	3.6%	2.1%	2.6%	4.7%
10 Non-Recyclable Paper	9.9%	3.5%	8.2%	11.7%
Total Paper	**25.6%**			
PLASTIC				
11 PET (#1) Bottles	1.1%	0.8%	0.7%	1.4%
12 PET (#1) Trays and Tubs	0.5%	0.3%	0.3%	0.6%
13 HDPE (#2) Natural Bottles	0.3%	0.3%	0.1%	0.4%
14 HDPE (#2) Pigmented Bottles	0.4%	0.3%	0.2%	0.6%
15 #3-#7 Plastic Bottles	<0.1%	0.2%	<0.1%	0.2%
16 Expanded Polystyrene (styrofoam)	1.4%	0.8%	1.0%	1.8%
17 Other #6 -Polystyrene	0.8%	0.3%	0.6%	0.9%
18 Plastic Flower Pots	<0.1%	0.1%	<0.1%	0.1%
19 Other Recyclable Containers/Tubs	1.6%	0.8%	1.2%	2.0%
20 Film Plastic - Shopping Bags	0.7%	0.3%	0.6%	0.9%
21 Film Plastic - Other	9.4%	3.1%	7.8%	10.9%
22 Other Rigid Plastic	2.2%	3.2%	0.5%	3.8%
Total Plastic	**18.3%**			
ORGANIC				
23 Food Waste	17.3%	4.3%	15.1%	19.5%
24 Clothing/Linens/Textiles/Leather	6.2%	4.0%	4.1%	8.2%
25 Carpets/Rugs	0.1%	0.4%	<0.1%	0.3%
26 Rubber	<0.1%	<0.1%	<0.1%	<0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	4.2%	2.9%	2.8%	5.7%
29 Fines	2.5%	1.2%	1.9%	3.1%
30 Miscellaneous Organics	8.0%	1.3%	7.4%	8.7%
Total Organics	**38.4%**			
YARD WASTE				
31 Grass	0.4%	1.3%	<0.1%	1.1%
32 Leaves	0.2%	0.6%	<0.1%	0.5%
33 Brush/Pruning	1.7%	1.9%	0.7%	2.6%
Total Yard Waste	**2.3%**			

Table 6 - Single Family Subdistrict A Waste Composition - Fall 2012 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.5%	2.1%	<0.1%	1.6%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	3.0%	3.3%	1.3%	4.7%
Total Wood	**3.5%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.0%	0.6%	0.7%	1.3%
38 Other Ferrous	1.5%	1.2%	0.9%	2.1%
Total Ferrous Metals	**2.6%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.5%	0.4%	0.3%	0.7%
40 Aluminum Tins/Foil	0.6%	0.3%	0.5%	0.8%
41 Other Aluminum	0.2%	0.4%	<0.1%	0.3%
42 Brass	<0.1%	0.2%	<0.1%	0.2%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	0.1%	0.5%	<0.1%	0.4%
Total Non-Ferrous Metals	**1.4%**			
GLASS				
45 Clear	1.1%	1.1%	0.6%	1.7%
46 Brown	0.3%	0.5%	<0.1%	0.5%
47 Green	0.4%	1.2%	<0.1%	1.0%
48 Non-container Glass	0.5%	0.7%	0.1%	0.9%
Total Glass	**2.3%**			
INORGANIC				
49 Concrete/Brick/Rock	1.3%	5.1%	<0.1%	3.9%
50 Sheet Rock	<0.1%	<0.1%	<0.1%	<0.1%
51 Latex Paints	<0.1%	<0.1%	<0.1%	<0.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	2.2%	3.0%	0.7%	3.7%
54 Miscellaneous Inorganic	1.7%	1.7%	0.9%	2.6%
Total Inorganics	**5.3%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	0.2%	<0.1%	0.1%
63 HW Containers	0.1%	0.4%	<0.1%	0.3%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**0.2%**			
TOTALS	**100.0%**			

Note: Composition based on 15 samples

It has been our pleasure working with you. If you have any questions on this report or would like to discuss the results further, please do not hesitate to contact either Stacey or Josh at (703) 471-6150.

Sincerely,

Josh DeGayner
Staff Professional
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Stacey T. Demers
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January 25, 2013
File No. 02212006.02

Sent via Electronic Mail

Raycharn Liou, Project Manager
Division of Solid Waste Services
Department of Environmental Protection
101 Monroe Street, Sixth Floor
Rockville, Maryland 20850

Subject: Montgomery County Waste Composition Study, Summary Report for Winter 2013

Dear Mr. Liou,

SCS Engineers (SCS) is pleased to submit this summary report on data gathered during waste characterization services performed at the Montgomery County Solid Waste Transfer Station for the Winter 2013 sampling event from January 8th through January 15th, 2013.

Summary of Results

A total of 75 waste samples were manually sorted into 64 distinct material categories during the field activity. The composition of each category is given as a percentage of the waste stream by weight. Results from the waste characterization are presented in the following tables:

- **Table 1** presents the Overall composition based on the weighted average of all 75 samples that were collected and sorted across the five generating sectors.
- **Table 2** presents the Commercial waste composition based on the 30 samples that were collected and sorted from the commercial waste stream.
- **Table 3** presents the Multi-Family composition based on the 10 samples that were collected and sorted from the multi-family waste stream.
- **Table 4** presents the Single-Family Municipal composition. This composition is based on the 5 samples that were collected and sorted from the single-family municipal haulers.
- **Table 5** presents the Single-Family Subdistrict B composition. This composition is based on the 15 samples that were collected and sorted from the waste stream generated by single-family households located in subdistrict B.
- **Table 6** presents the Single-Family Subdistrict A composition. This composition is based on the 15 samples that were collected and sorted from the waste stream generated by single-family households located in subdistrict A.

Table 1 - Weighted Overall Waste Composition - Winter 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	1.6%	1.5%	1.3%	2.0%
2 Corrugated Cardboard	2.2%	2.2%	1.7%	2.7%
3 Magazines	1.1%	1.3%	0.8%	1.4%
4 Paperboard	2.4%	1.3%	2.1%	2.7%
5 Aseptic/Poly-coated	2.0%	1.9%	1.6%	2.4%
6 Office Paper	2.1%	2.7%	1.5%	2.7%
7 Shredded Paper	0.2%	0.5%	0.1%	0.3%
8 Books	0.6%	1.7%	0.2%	1.0%
9 Other Recyclable Paper	3.5%	2.1%	3.0%	3.9%
10 Non-Recyclable Paper	10.1%	4.6%	9.0%	11.1%
Total Paper	**25.9%**			
PLASTIC				
11 PET (#1) Bottles	1.7%	1.2%	1.4%	2.0%
12 PET (#1) Trays and Tubs	0.8%	0.7%	0.7%	1.0%
13 HDPE (#2) Natural Bottles	0.4%	0.4%	0.3%	0.5%
14 HDPE (#2) Pigmented Bottles	0.3%	0.4%	0.2%	0.4%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	1.5%	1.9%	1.1%	1.9%
17 Other #6 -Polystyrene	0.9%	1.2%	0.6%	1.2%
18 Plastic Flower Pots	<0.1%	0.1%	<0.1%	<0.1%
19 Other Recyclable Containers/Tubs	1.5%	1.2%	1.2%	1.8%
20 Film Plastic - Shopping Bags	0.6%	1.1%	0.3%	0.8%
21 Film Plastic - Other	7.8%	3.7%	7.0%	8.6%
22 Other Rigid Plastic	2.1%	3.1%	1.4%	2.8%
Total Plastic	**17.7%**			
ORGANIC				
23 Food Waste	24.5%	15.6%	20.9%	28.0%
24 Clothing/Linens/Textiles/Leather	3.7%	4.2%	2.7%	4.6%
25 Carpets/Rugs	0.5%	1.6%	0.2%	0.9%
26 Rubber	0.2%	0.3%	0.1%	0.2%
27 Tires	<0.1%	0.4%	<0.1%	0.2%
28 Diapers & Sanitary Products	3.3%	2.8%	2.7%	4.0%
29 Fines	2.7%	1.0%	2.4%	2.9%
30 Miscellaneous Organics	7.0%	1.8%	6.6%	7.4%
Total Organics	**41.9%**			
YARD WASTE				
31 Grass	<0.1%	0.2%	<0.1%	<0.1%
32 Leaves	<0.1%	0.2%	<0.1%	<0.1%
33 Brush/Pruning	1.0%	1.7%	0.6%	1.4%
Total Yard Waste	**1.0%**			

Table 1 - Weighted Overall Waste Composition - Winter 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.2%	0.7%	<0.1%	0.3%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	1.6%	3.1%	0.9%	2.4%
Total Wood	**1.8%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.2%	1.3%	0.9%	1.5%
38 Other Ferrous	1.1%	6.5%	<0.1%	2.6%
Total Ferrous Metals	**2.3%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.6%	0.7%	0.4%	0.7%
40 Aluminum Tins/Foil	0.6%	0.6%	0.4%	0.7%
41 Other Aluminum	<0.1%	0.4%	<0.1%	0.2%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	0.2%	<0.1%	<0.1%
Total Non-Ferrous Metals	**1.2%**			
GLASS				
45 Clear	1.8%	1.9%	1.4%	2.3%
46 Brown	0.5%	1.1%	0.2%	0.7%
47 Green	0.8%	1.4%	0.5%	1.1%
48 Non-container Glass	0.2%	0.5%	0.1%	0.4%
Total Glass	**3.3%**			
INORGANIC				
49 Concrete/Brick/Rock	0.2%	1.0%	<0.1%	0.5%
50 Sheet Rock	0.2%	0.5%	<0.1%	0.3%
51 Latex Paints	<0.1%	0.4%	<0.1%	0.2%
52 Fluorescent Lamps	<0.1%	0.2%	<0.1%	<0.1%
53 Electronics	2.0%	4.8%	0.9%	3.0%
54 Miscellaneous Inorganic	2.1%	3.0%	1.5%	2.8%
Total Inorganics	**4.5%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	0.2%	<0.1%	<0.1%
63 HW Containers	0.1%	0.7%	<0.1%	0.3%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**0.2%**			
TOTALS	**100.0%**			

Note: Composition based on 75 samples

Table 2 - Commercial Waste Composition - Winter 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	1.2%	1.4%	0.7%	1.7%
2 Corrugated Cardboard	2.8%	2.8%	1.8%	3.8%
3 Magazines	1.0%	1.5%	0.5%	1.5%
4 Paperboard	2.0%	1.4%	1.5%	2.5%
5 Aseptic/Poly-coated	2.4%	2.3%	1.6%	3.3%
6 Office Paper	2.7%	3.2%	1.6%	3.9%
7 Shredded Paper	0.2%	0.4%	<0.1%	0.3%
8 Books	0.4%	1.1%	<0.1%	0.7%
9 Other Recyclable Paper	3.4%	2.3%	2.6%	4.2%
10 Non-Recyclable Paper	10.4%	5.6%	8.4%	12.4%
Total Paper	**26.5%**			
PLASTIC				
11 PET (#1) Bottles	2.0%	1.6%	1.4%	2.6%
12 PET (#1) Trays and Tubs	0.8%	0.7%	0.5%	1.1%
13 HDPE (#2) Natural Bottles	0.6%	0.5%	0.4%	0.7%
14 HDPE (#2) Pigmented Bottles	0.2%	0.3%	0.1%	0.4%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	1.9%	2.4%	1.1%	2.8%
17 Other #6 -Polystyrene	1.1%	1.5%	0.6%	1.7%
18 Plastic Flower Pots	<0.1%	<0.1%	<0.1%	<0.1%
19 Other Recyclable Containers/Tubs	1.6%	1.4%	1.1%	2.1%
20 Film Plastic - Shopping Bags	0.5%	1.5%	<0.1%	1.1%
21 Film Plastic - Other	8.2%	4.6%	6.6%	9.9%
22 Other Rigid Plastic	2.3%	3.9%	1.0%	3.7%
Total Plastic	**19.3%**			
ORGANIC				
23 Food Waste	26.8%	20.0%	19.6%	34.0%
24 Clothing/Linens/Textiles/Leather	2.4%	3.5%	1.1%	3.7%
25 Carpets/Rugs	0.4%	1.2%	<0.1%	0.8%
26 Rubber	0.3%	0.4%	0.2%	0.4%
27 Tires	0.1%	0.6%	<0.1%	0.3%
28 Diapers & Sanitary Products	1.8%	2.9%	0.8%	2.8%
29 Fines	2.6%	0.8%	2.3%	2.9%
30 Miscellaneous Organics	6.7%	2.2%	6.0%	7.5%
Total Organics	**41.2%**			
YARD WASTE				
31 Grass	<0.1%	<0.1%	<0.1%	<0.1%
32 Leaves	<0.1%	<0.1%	<0.1%	<0.1%
33 Brush/Pruning	0.9%	1.9%	0.2%	1.6%
Total Yard Waste	**0.9%**			

Table 2 - Commercial Waste Composition - Winter 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	<0.1%	0.5%	<0.1%	0.2%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	1.3%	3.7%	<0.1%	2.6%
Total Wood	**1.3%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.3%	1.6%	0.7%	1.9%
38 Other Ferrous	0.3%	0.7%	<0.1%	0.6%
Total Ferrous Metals	**1.6%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.7%	0.8%	0.4%	0.9%
40 Aluminum Tins/Foil	0.6%	0.7%	0.3%	0.9%
41 Other Aluminum	<0.1%	0.5%	<0.1%	0.3%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	<0.1%	<0.1%	<0.1%
Total Non-Ferrous Metals	**1.3%**			
GLASS				
45 Clear	1.8%	2.3%	1.0%	2.7%
46 Brown	0.5%	1.4%	<0.1%	1.0%
47 Green	0.9%	1.7%	0.3%	1.5%
48 Non-container Glass	0.3%	0.5%	<0.1%	0.4%
Total Glass	**3.4%**			
INORGANIC				
49 Concrete/Brick/Rock	0.2%	0.6%	<0.1%	0.4%
50 Sheet Rock	0.2%	0.6%	<0.1%	0.4%
51 Latex Paints	<0.1%	<0.1%	<0.1%	<0.1%
52 Fluorescent Lamps	<0.1%	0.2%	<0.1%	0.1%
53 Electronics	2.1%	6.1%	<0.1%	4.2%
54 Miscellaneous Inorganic	1.6%	3.2%	0.5%	2.8%
Total Inorganics	**4.1%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	0.2%	0.9%	<0.1%	0.6%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**0.2%**			
TOTALS	**100.0%**			

Note: Composition based on 30 samples

Table 3 - Multi-Family Waste Composition - Winter 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	3.1%	2.4%	1.6%	4.6%
2 Corrugated Cardboard	2.1%	1.0%	1.5%	2.8%
3 Magazines	0.8%	0.5%	0.4%	1.1%
4 Paperboard	3.3%	0.9%	2.7%	3.8%
5 Aseptic/Poly-coated	0.9%	0.5%	0.6%	1.2%
6 Office Paper	1.6%	1.5%	0.7%	2.5%
7 Shredded Paper	<0.1%	0.2%	<0.1%	0.2%
8 Books	2.1%	3.8%	<0.1%	4.4%
9 Other Recyclable Paper	2.7%	0.9%	2.2%	3.3%
10 Non-Recyclable Paper	8.1%	2.4%	6.6%	9.6%
Total Paper	**24.7%**			
PLASTIC				
11 PET (#1) Bottles	2.2%	0.6%	1.9%	2.6%
12 PET (#1) Trays and Tubs	0.6%	0.4%	0.3%	0.8%
13 HDPE (#2) Natural Bottles	0.6%	0.3%	0.4%	0.8%
14 HDPE (#2) Pigmented Bottles	0.5%	0.4%	0.2%	0.7%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	1.0%	0.3%	0.8%	1.1%
17 Other #6 -Polystyrene	0.5%	0.5%	0.2%	0.7%
18 Plastic Flower Pots	<0.1%	<0.1%	<0.1%	<0.1%
19 Other Recyclable Containers/Tubs	2.0%	1.1%	1.3%	2.7%
20 Film Plastic - Shopping Bags	0.5%	0.2%	0.4%	0.7%
21 Film Plastic - Other	6.2%	1.3%	5.4%	7.0%
22 Other Rigid Plastic	1.7%	2.0%	0.5%	2.9%
Total Plastic	**15.7%**			
ORGANIC				
23 Food Waste	20.7%	6.8%	16.5%	24.9%
24 Clothing/Linens/Textiles/Leather	5.5%	4.8%	2.5%	8.4%
25 Carpets/Rugs	0.2%	0.8%	<0.1%	0.7%
26 Rubber	<0.1%	<0.1%	<0.1%	<0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	6.3%	2.1%	5.0%	7.7%
29 Fines	2.5%	0.5%	2.3%	2.8%
30 Miscellaneous Organics	7.0%	1.0%	6.4%	7.6%
Total Organics	**42.3%**			
YARD WASTE				
31 Grass	<0.1%	<0.1%	<0.1%	<0.1%
32 Leaves	<0.1%	<0.1%	<0.1%	<0.1%
33 Brush/Pruning	1.0%	1.3%	0.2%	1.9%
Total Yard Waste	**1.0%**			

Table 3 - Multi-Family Waste Composition - Winter 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	<0.1%	0.2%	<0.1%	0.2%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	2.7%	2.3%	1.2%	4.1%
Total Wood	**2.7%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.4%	0.4%	1.1%	1.7%
38 Other Ferrous	0.7%	0.7%	0.3%	1.2%
Total Ferrous Metals	**2.1%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.7%	0.4%	0.5%	0.9%
40 Aluminum Tins/Foil	0.7%	0.4%	0.4%	0.9%
41 Other Aluminum	<0.1%	<0.1%	<0.1%	<0.1%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	0.1%	<0.1%	<0.1%
Total Non-Ferrous Metals	**1.4%**			
GLASS				
45 Clear	2.8%	1.5%	1.9%	3.7%
46 Brown	0.6%	0.7%	0.2%	1.1%
47 Green	0.8%	0.7%	0.4%	1.3%
48 Non-container Glass	<0.1%	0.2%	<0.1%	0.2%
Total Glass	**4.3%**			
INORGANIC				
49 Concrete/Brick/Rock	<0.1%	<0.1%	<0.1%	<0.1%
50 Sheet Rock	0.3%	0.6%	<0.1%	0.6%
51 Latex Paints	<0.1%	<0.1%	<0.1%	<0.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	1.7%	1.5%	0.8%	2.7%
54 Miscellaneous Inorganic	3.5%	3.3%	1.5%	5.6%
Total Inorganics	**5.5%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	0.3%	<0.1%	0.3%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**<0.1%**			
TOTALS	**100.0%**			

Note: Composition based on 10 samples

Table 4 - Single Family Municipal Waste Composition - Winter 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.5%	1.6%	1.1%	3.9%
2 Corrugated Cardboard	1.1%	0.6%	0.6%	1.6%
3 Magazines	0.7%	0.7%	0.1%	1.3%
4 Paperboard	2.2%	0.7%	1.6%	2.8%
5 Aseptic/Poly-coated	1.8%	0.7%	1.2%	2.4%
6 Office Paper	1.0%	0.4%	0.7%	1.4%
7 Shredded Paper	<0.1%	<0.1%	<0.1%	<0.1%
8 Books	0.4%	0.4%	<0.1%	0.8%
9 Other Recyclable Paper	3.6%	2.3%	1.5%	5.6%
10 Non-Recyclable Paper	11.4%	2.8%	9.0%	13.9%
Total Paper	**24.7%**			
PLASTIC				
11 PET (#1) Bottles	1.4%	0.9%	0.6%	2.2%
12 PET (#1) Trays and Tubs	1.0%	0.8%	0.3%	1.7%
13 HDPE (#2) Natural Bottles	0.2%	0.3%	<0.1%	0.4%
14 HDPE (#2) Pigmented Bottles	0.3%	0.2%	0.1%	0.5%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	0.9%	0.3%	0.6%	1.1%
17 Other #6 -Polystyrene	0.5%	0.2%	0.3%	0.7%
18 Plastic Flower Pots	0.4%	0.9%	<0.1%	1.2%
19 Other Recyclable Containers/Tubs	1.5%	0.6%	1.0%	2.0%
20 Film Plastic - Shopping Bags	0.6%	0.4%	0.2%	0.9%
21 Film Plastic - Other	7.5%	1.8%	5.9%	9.2%
22 Other Rigid Plastic	1.9%	1.1%	0.9%	2.9%
Total Plastic	**16.2%**			
ORGANIC				
23 Food Waste	20.4%	5.7%	15.4%	25.4%
24 Clothing/Linens/Textiles/Leather	5.1%	5.1%	0.6%	9.6%
25 Carpets/Rugs	1.0%	1.5%	<0.1%	2.3%
26 Rubber	<0.1%	0.1%	<0.1%	0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	7.2%	4.2%	3.4%	10.9%
29 Fines	3.4%	0.9%	2.7%	4.2%
30 Miscellaneous Organics	7.7%	1.2%	6.7%	8.7%
Total Organics	**44.8%**			
YARD WASTE				
31 Grass	<0.1%	<0.1%	<0.1%	<0.1%
32 Leaves	0.4%	0.7%	<0.1%	1.0%
33 Brush/Pruning	1.5%	2.0%	<0.1%	3.2%
Total Yard Waste	**1.9%**			

Table 4 - Single Family Municipal Waste Composition - Winter 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.5%	1.2%	<0.1%	1.6%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	2.6%	3.3%	<0.1%	5.5%
Total Wood	**3.2%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	0.8%	0.6%	0.3%	1.3%
38 Other Ferrous	0.2%	0.4%	<0.1%	0.5%
Total Ferrous Metals	**0.9%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.8%	1.1%	<0.1%	1.8%
40 Aluminum Tins/Foil	0.5%	0.3%	0.3%	0.8%
41 Other Aluminum	<0.1%	<0.1%	<0.1%	<0.1%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	<0.1%	<0.1%	<0.1%
Total Non-Ferrous Metals	**1.3%**			
GLASS				
45 Clear	1.1%	1.1%	0.2%	2.1%
46 Brown	0.2%	0.4%	<0.1%	0.5%
47 Green	0.5%	0.7%	<0.1%	1.0%
48 Non-container Glass	<0.1%	<0.1%	<0.1%	<0.1%
Total Glass	**1.8%**			
INORGANIC				
49 Concrete/Brick/Rock	<0.1%	<0.1%	<0.1%	<0.1%
50 Sheet Rock	<0.1%	<0.1%	<0.1%	<0.1%
51 Latex Paints	<0.1%	<0.1%	<0.1%	<0.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	2.9%	3.4%	<0.1%	5.9%
54 Miscellaneous Inorganic	2.1%	2.1%	0.2%	3.9%
Total Inorganics	**5.0%**			
HHW				
55 Lead-Acid Batteries	<0.1%	0.2%	<0.1%	0.3%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**<0.1%**			
TOTALS	**100.0%**			

Note: Composition based on 5 samples

Table 5 - Single Family Subdistrict B Waste Composition - Winter 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	1.9%	1.2%	1.3%	2.5%
2 Corrugated Cardboard	1.1%	0.6%	0.8%	1.4%
3 Magazines	1.8%	1.3%	1.1%	2.4%
4 Paperboard	3.0%	1.1%	2.4%	3.5%
5 Aseptic/Poly-coated	2.0%	1.0%	1.4%	2.5%
6 Office Paper	1.2%	2.0%	0.2%	2.2%
7 Shredded Paper	0.5%	0.7%	0.2%	0.8%
8 Books	0.6%	1.0%	0.1%	1.1%
9 Other Recyclable Paper	3.5%	1.1%	3.0%	4.1%
10 Non-Recyclable Paper	9.7%	2.4%	8.5%	10.9%
Total Paper	**25.2%**			
PLASTIC				
11 PET (#1) Bottles	0.9%	0.4%	0.7%	1.2%
12 PET (#1) Trays and Tubs	1.0%	0.7%	0.7%	1.4%
13 HDPE (#2) Natural Bottles	0.2%	0.2%	<0.1%	0.3%
14 HDPE (#2) Pigmented Bottles	0.4%	0.3%	0.3%	0.6%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	0.8%	0.4%	0.6%	0.9%
17 Other #6 -Polystyrene	0.9%	0.8%	0.5%	1.2%
18 Plastic Flower Pots	<0.1%	<0.1%	<0.1%	<0.1%
19 Other Recyclable Containers/Tubs	1.2%	0.7%	0.9%	1.5%
20 Film Plastic - Shopping Bags	0.7%	0.3%	0.5%	0.8%
21 Film Plastic - Other	7.8%	2.2%	6.7%	8.9%
22 Other Rigid Plastic	2.1%	1.7%	1.3%	3.0%
Total Plastic	**16.1%**			
ORGANIC				
23 Food Waste	21.7%	4.6%	19.4%	24.1%
24 Clothing/Linens/Textiles/Leather	5.9%	6.2%	2.7%	9.0%
25 Carpets/Rugs	1.1%	2.9%	<0.1%	2.5%
26 Rubber	<0.1%	0.1%	<0.1%	<0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	4.9%	3.2%	3.3%	6.5%
29 Fines	2.7%	1.7%	1.8%	3.5%
30 Miscellaneous Organics	7.5%	0.7%	7.1%	7.9%
Total Organics	**43.7%**			
YARD WASTE				
31 Grass	<0.1%	<0.1%	<0.1%	<0.1%
32 Leaves	<0.1%	<0.1%	<0.1%	<0.1%
33 Brush/Pruning	1.1%	1.5%	0.4%	1.9%
Total Yard Waste	**1.1%**			

Table 5 - Single Family Subdistrict B Waste Composition - Winter 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.5%	1.3%	<0.1%	1.2%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	2.1%	2.5%	0.9%	3.4%
Total Wood	**2.7%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.0%	0.3%	0.8%	1.1%
38 Other Ferrous	1.6%	4.1%	<0.1%	3.6%
Total Ferrous Metals	**2.6%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.3%	0.2%	0.2%	0.4%
40 Aluminum Tins/Foil	0.5%	0.4%	0.4%	0.7%
41 Other Aluminum	<0.1%	0.2%	<0.1%	0.2%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	<0.1%	<0.1%	<0.1%
Total Non-Ferrous Metals	**0.8%**			
GLASS				
45 Clear	1.5%	1.5%	0.8%	2.3%
46 Brown	0.5%	0.5%	0.2%	0.7%
47 Green	0.9%	1.1%	0.3%	1.4%
48 Non-container Glass	0.4%	0.6%	<0.1%	0.7%
Total Glass	**3.3%**			
INORGANIC				
49 Concrete/Brick/Rock	0.4%	0.8%	<0.1%	0.7%
50 Sheet Rock	<0.1%	0.1%	<0.1%	<0.1%
51 Latex Paints	0.2%	0.5%	<0.1%	0.4%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	1.5%	2.0%	0.5%	2.5%
54 Miscellaneous Inorganic	2.5%	2.3%	1.3%	3.6%
Total Inorganics	**4.5%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**0.2%**			
TOTALS	**100.2%**			

Note: Composition based on 15 samples

Table 6 - Single Family Subdistrict A Waste Composition - Winter 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	1.3%	0.9%	0.8%	1.8%
2 Corrugated Cardboard	1.0%	0.6%	0.7%	1.3%
3 Magazines	1.1%	1.2%	0.5%	1.7%
4 Paperboard	2.5%	1.2%	1.9%	3.1%
5 Aseptic/Poly-coated	1.4%	1.1%	0.9%	2.0%
6 Office Paper	1.2%	1.5%	0.5%	2.0%
7 Shredded Paper	0.4%	0.8%	<0.1%	0.8%
8 Books	0.3%	0.7%	<0.1%	0.7%
9 Other Recyclable Paper	4.9%	3.3%	3.2%	6.5%
10 Non-Recyclable Paper	11.1%	4.0%	9.1%	13.1%
Total Paper	**25.1%**			
PLASTIC				
11 PET (#1) Bottles	0.7%	0.4%	0.5%	1.0%
12 PET (#1) Trays and Tubs	0.8%	0.5%	0.5%	1.1%
13 HDPE (#2) Natural Bottles	0.1%	0.3%	<0.1%	0.3%
14 HDPE (#2) Pigmented Bottles	0.4%	0.5%	0.2%	0.7%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	1.1%	0.6%	0.8%	1.4%
17 Other #6 -Polystyrene	0.4%	0.3%	0.3%	0.6%
18 Plastic Flower Pots	<0.1%	<0.1%	<0.1%	<0.1%
19 Other Recyclable Containers/Tubs	1.1%	0.6%	0.9%	1.4%
20 Film Plastic - Shopping Bags	0.6%	0.5%	0.3%	0.9%
21 Film Plastic - Other	7.8%	1.8%	6.9%	8.8%
22 Other Rigid Plastic	1.3%	0.7%	0.9%	1.7%
Total Plastic	**14.5%**			
ORGANIC				
23 Food Waste	22.0%	7.3%	18.3%	25.7%
24 Clothing/Linens/Textiles/Leather	4.2%	2.3%	3.0%	5.3%
25 Carpets/Rugs	0.6%	1.9%	<0.1%	1.6%
26 Rubber	<0.1%	<0.1%	<0.1%	<0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	4.1%	2.5%	2.8%	5.3%
29 Fines	3.3%	1.3%	2.6%	3.9%
30 Miscellaneous Organics	7.6%	1.7%	6.7%	8.4%
Total Organics	**41.8%**			
YARD WASTE				
31 Grass	0.2%	0.7%	<0.1%	0.5%
32 Leaves	0.3%	0.6%	<0.1%	0.5%
33 Brush/Pruning	1.6%	1.6%	0.8%	2.4%
Total Yard Waste	**2.1%**			

Table 6 - Single Family Subdistrict A Waste Composition - Winter 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	<0.1%	<0.1%	<0.1%	<0.1%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	1.3%	1.2%	0.7%	1.9%
Total Wood	**1.3%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	0.7%	0.4%	0.5%	0.9%
38 Other Ferrous	2.9%	9.7%	<0.1%	7.8%
Total Ferrous Metals	**3.6%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.3%	0.2%	0.2%	0.4%
40 Aluminum Tins/Foil	0.5%	0.3%	0.4%	0.7%
41 Other Aluminum	0.1%	0.5%	<0.1%	0.4%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	0.1%	0.5%	<0.1%	0.4%
Total Non-Ferrous Metals	**1.1%**			
GLASS				
45 Clear	1.1%	0.7%	0.7%	1.4%
46 Brown	0.2%	0.4%	<0.1%	0.4%
47 Green	0.3%	0.6%	<0.1%	0.6%
48 Non-container Glass	0.2%	0.6%	<0.1%	0.5%
Total Glass	**1.7%**			
INORGANIC				
49 Concrete/Brick/Rock	3.3%	9.9%	<0.1%	8.3%
50 Sheet Rock	<0.1%	0.2%	<0.1%	0.2%
51 Latex Paints	0.4%	1.0%	<0.1%	0.9%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	2.2%	2.5%	0.9%	3.4%
54 Miscellaneous Inorganic	2.7%	2.9%	1.2%	4.2%
Total Inorganics	**8.5%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	0.3%	<0.1%	0.2%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	0.1%	0.5%	<0.1%	0.4%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**0.2%**			
TOTALS	**100.0%**			

Note: Composition based on 15 samples

It has been our pleasure working with you. If you have any questions on this report or would like to discuss the results further, please do not hesitate to contact either Stacey or Josh at (703) 471-6150.

Sincerely,

Josh DeGayner
Staff Professional
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May 24, 2013
File No. 02212006.02

Sent via Electronic Mail

Raycharn Liou, Project Manager
Division of Solid Waste Services
Department of Environmental Protection
101 Monroe Street, Sixth Floor
Rockville, Maryland 20850

Subject: Montgomery County Waste Composition Study, Summary Report for Spring 2013

Dear Mr. Liou,

SCS Engineers (SCS) is pleased to submit this summary report on data gathered during waste characterization services performed at the Montgomery County Solid Waste Transfer Station for the Spring 2013 sampling event conducted from April 19th through April 27th, 2013.

Summary of Results

A total of 75 waste samples were manually sorted into 64 distinct material categories during the field activity. The composition of each category is given as a percentage of the waste stream by weight. Results from the waste characterization are presented in the following tables:

- **Table 1** presents the Overall composition based on the weighted average amongst sectors of all 75 samples that were collected and sorted across the five generating sectors.
- **Table 2** presents the Commercial waste composition based on the 30 samples that were collected and sorted from the commercial waste stream.
- **Table 3** presents the Multi-Family composition based on the 10 samples that were collected and sorted from the multi-family waste stream.
- **Table 4** presents the Single-Family Municipal composition based on the 5 samples that were collected and sorted from the single-family municipal haulers.
- **Table 5** presents the Single-Family Subdistrict B composition. This composition is based on the 15 samples that were collected and sorted from the waste stream generated by single-family households located in subdistrict B.
- **Table 6** presents the Single-Family Subdistrict A composition. This composition is based on the 15 samples that were collected and sorted from the waste stream generated by single-family households located in subdistrict A.

Table 1 - Weighted Overall Waste Composition - Spring 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.5%	3.2%	1.8%	3.2%
2 Corrugated Cardboard	2.5%	3.4%	1.7%	3.2%
3 Magazines	1.0%	1.6%	0.6%	1.4%
4 Paperboard	2.2%	1.6%	1.8%	2.5%
5 Aseptic/Poly-coated	1.8%	2.2%	1.3%	2.3%
6 Office Paper	1.3%	2.2%	0.8%	1.8%
7 Shredded Paper	0.3%	0.7%	0.1%	0.4%
8 Books	0.4%	1.5%	<0.1%	0.7%
9 Other Recyclable Paper	2.7%	1.9%	2.2%	3.1%
10 Non-Recyclable Paper	9.7%	5.7%	8.4%	11.0%
Total Paper	**24.2%**			
PLASTIC				
11 PET (#1) Bottles	1.2%	1.0%	1.0%	1.4%
12 PET (#1) Trays and Tubs	0.5%	0.6%	0.4%	0.6%
13 HDPE (#2) Natural Bottles	0.3%	0.3%	0.2%	0.4%
14 HDPE (#2) Pigmented Bottles	0.3%	0.3%	0.2%	0.3%
15 #3-#7 Plastic Bottles	<0.1%	0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	0.9%	0.6%	0.7%	1.0%
17 Other #6 -Polystyrene	1.6%	6.9%	<0.1%	3.1%
18 Plastic Flower Pots	0.4%	2.4%	<0.1%	1.0%
19 Other Recyclable Containers/Tubs	1.2%	1.6%	0.9%	1.6%
20 Film Plastic - Shopping Bags	0.2%	0.2%	0.2%	0.2%
21 Film Plastic - Other	7.3%	5.1%	6.1%	8.4%
22 Other Rigid Plastic	2.3%	4.3%	1.3%	3.3%
Total Plastic	**16.2%**			
ORGANIC				
23 Food Waste	29.3%	21.4%	24.4%	34.1%
24 Clothing/Linens/Textiles/Leather	3.1%	4.5%	2.1%	4.1%
25 Carpets/Rugs	0.3%	1.8%	<0.1%	0.7%
26 Rubber	<0.1%	0.2%	<0.1%	<0.1%
27 Tires	0.1%	0.8%	<0.1%	0.3%
28 Diapers & Sanitary Products	3.0%	4.7%	2.0%	4.1%
29 Fines	2.3%	1.1%	2.0%	2.5%
30 Miscellaneous Organics	6.4%	2.5%	5.8%	7.0%
Total Organics	**44.6%**			
YARD WASTE				
31 Grass	0.3%	1.3%	<0.1%	0.6%
32 Leaves	0.4%	2.0%	<0.1%	0.9%
33 Brush/Pruning	1.1%	4.0%	0.2%	2.0%
Total Yard Waste	**1.9%**			

Table 1 - Weighted Overall Waste Composition - Spring 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.4%	1.5%	<0.1%	0.7%
35 Pallets	<0.1%	0.2%	<0.1%	<0.1%
36 Other Wood	1.8%	3.6%	0.9%	2.6%
Total Wood	**2.1%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	0.8%	0.9%	0.6%	1.0%
38 Other Ferrous	0.8%	1.9%	0.4%	1.3%
Total Ferrous Metals	**1.6%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.5%	0.4%	0.4%	0.6%
40 Aluminum Tins/Foil	0.4%	0.4%	0.3%	0.5%
41 Other Aluminum	0.1%	0.7%	<0.1%	0.3%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	0.2%	1.0%	<0.1%	0.4%
Total Non-Ferrous Metals	**1.2%**			
GLASS				
45 Clear	1.3%	1.6%	0.9%	1.6%
46 Brown	0.4%	0.6%	0.2%	0.5%
47 Green	0.5%	1.2%	0.2%	0.7%
48 Non-container Glass	0.2%	0.9%	<0.1%	0.4%
Total Glass	**2.3%**			
INORGANIC				
49 Concrete/Brick/Rock	<0.1%	0.3%	<0.1%	0.1%
50 Sheet Rock	0.5%	3.1%	<0.1%	1.2%
51 Latex Paints	<0.1%	0.3%	<0.1%	0.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	1.4%	4.6%	0.4%	2.5%
54 Miscellaneous Inorganic	3.3%	10.9%	0.8%	5.8%
Total Inorganics	**5.2%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	0.1%	<0.1%	<0.1%
63 HW Containers	0.3%	1.9%	<0.1%	0.7%
64 Other Hazardous	0.2%	1.2%	<0.1%	0.5%
Total Household Hazardous Wastes	**0.5%**			
TOTALS	**100.0%**			

Note: Composition based on 75 samples

Table 2 - Commercial Waste Composition - Spring 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.4%	3.9%	1.0%	3.8%
2 Corrugated Cardboard	3.5%	4.4%	1.9%	5.0%
3 Magazines	0.5%	0.9%	0.2%	0.8%
4 Paperboard	1.8%	1.6%	1.3%	2.4%
5 Aseptic/Poly-coated	2.0%	2.8%	1.0%	3.0%
6 Office Paper	1.5%	2.7%	0.5%	2.5%
7 Shredded Paper	0.2%	0.5%	<0.1%	0.4%
8 Books	0.3%	1.5%	<0.1%	0.9%
9 Other Recyclable Paper	2.0%	1.8%	1.3%	2.6%
10 Non-Recyclable Paper	9.2%	7.0%	6.7%	11.7%
Total Paper	**23.4%**			
PLASTIC				
11 PET (#1) Bottles	1.2%	1.2%	0.8%	1.6%
12 PET (#1) Trays and Tubs	0.4%	0.7%	0.2%	0.7%
13 HDPE (#2) Natural Bottles	0.3%	0.4%	0.2%	0.4%
14 HDPE (#2) Pigmented Bottles	0.1%	0.2%	<0.1%	0.2%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	0.8%	0.7%	0.5%	1.1%
17 Other #6 -Polystyrene	2.5%	9.1%	<0.1%	5.7%
18 Plastic Flower Pots	0.6%	3.0%	<0.1%	1.6%
19 Other Recyclable Containers/Tubs	1.4%	2.1%	0.7%	2.2%
20 Film Plastic - Shopping Bags	0.1%	0.1%	<0.1%	0.1%
21 Film Plastic - Other	7.8%	6.4%	5.5%	10.1%
22 Other Rigid Plastic	2.4%	4.8%	0.7%	4.1%
Total Plastic	**17.5%**			
ORGANIC				
23 Food Waste	31.9%	27.9%	21.9%	41.9%
24 Clothing/Linens/Textiles/Leather	1.8%	5.3%	<0.1%	3.7%
25 Carpets/Rugs	<0.1%	<0.1%	<0.1%	<0.1%
26 Rubber	<0.1%	<0.1%	<0.1%	<0.1%
27 Tires	0.2%	1.1%	<0.1%	0.6%
28 Diapers & Sanitary Products	1.7%	5.8%	<0.1%	3.8%
29 Fines	2.2%	1.4%	1.7%	2.7%
30 Miscellaneous Organics	5.4%	3.2%	4.3%	6.6%
Total Organics	**43.3%**			
YARD WASTE				
31 Grass	0.4%	1.6%	<0.1%	1.0%
32 Leaves	0.6%	2.3%	<0.1%	1.4%
33 Brush/Pruning	1.2%	5.1%	<0.1%	3.0%
Total Yard Waste	**2.2%**			

Table 2 - Commercial Waste Composition - Spring 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.4%	1.8%	<0.1%	1.0%
35 Pallets	<0.1%	0.3%	<0.1%	0.2%
36 Other Wood	2.3%	4.4%	0.7%	3.8%
Total Wood	**2.6%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	0.6%	0.9%	0.3%	0.9%
38 Other Ferrous	0.9%	2.3%	0.1%	1.8%
Total Ferrous Metals	**1.5%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.3%	0.4%	0.2%	0.5%
40 Aluminum Tins/Foil	0.3%	0.4%	0.1%	0.4%
41 Other Aluminum	0.2%	1.0%	<0.1%	0.5%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	<0.1%	<0.1%	<0.1%
Total Non-Ferrous Metals	**0.8%**			
GLASS				
45 Clear	1.2%	2.0%	0.5%	1.9%
46 Brown	0.2%	0.6%	<0.1%	0.4%
47 Green	0.4%	1.5%	<0.1%	0.9%
48 Non-container Glass	0.2%	1.1%	<0.1%	0.6%
Total Glass	**2.0%**			
INORGANIC				
49 Concrete/Brick/Rock	<0.1%	<0.1%	<0.1%	<0.1%
50 Sheet Rock	0.7%	4.0%	<0.1%	2.1%
51 Latex Paints	<0.1%	<0.1%	<0.1%	<0.1%
52 Fluorescent Lamps	<0.1%	0.1%	<0.1%	<0.1%
53 Electronics	1.8%	5.8%	<0.1%	3.9%
54 Miscellaneous Inorganic	3.2%	13.6%	<0.1%	8.1%
Total Inorganics	**5.7%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	0.2%	<0.1%	<0.1%
63 HW Containers	0.5%	2.6%	<0.1%	1.4%
64 Other Hazardous	0.3%	1.6%	<0.1%	0.8%
Total Household Hazardous Wastes	**0.8%**			
TOTALS	**100.0%**			

Note: Composition based on 30 samples

Table 3 - Multi-Family Waste Composition - Spring 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.5%	1.6%	1.5%	3.5%
2 Corrugated Cardboard	2.1%	1.9%	0.9%	3.2%
3 Magazines	2.5%	3.4%	0.3%	4.6%
4 Paperboard	3.1%	1.9%	1.9%	4.2%
5 Aseptic/Poly-coated	1.0%	0.7%	0.6%	1.4%
6 Office Paper	1.1%	1.4%	0.2%	1.9%
7 Shredded Paper	<0.1%	<0.1%	<0.1%	<0.1%
8 Books	<0.1%	0.2%	<0.1%	0.2%
9 Other Recyclable Paper	4.0%	2.3%	2.6%	5.4%
10 Non-Recyclable Paper	7.8%	2.3%	6.4%	9.3%
Total Paper	**24.1%**			
PLASTIC				
11 PET (#1) Bottles	2.1%	0.9%	1.6%	2.7%
12 PET (#1) Trays and Tubs	0.7%	0.3%	0.5%	0.9%
13 HDPE (#2) Natural Bottles	0.5%	0.4%	0.2%	0.7%
14 HDPE (#2) Pigmented Bottles	0.4%	0.3%	0.2%	0.6%
15 #3-#7 Plastic Bottles	<0.1%	0.2%	<0.1%	0.2%
16 Expanded Polystyrene (styrofoam)	0.8%	0.3%	0.6%	1.0%
17 Other #6 -Polystyrene	0.2%	0.4%	<0.1%	0.4%
18 Plastic Flower Pots	0.1%	0.3%	<0.1%	0.3%
19 Other Recyclable Containers/Tubs	0.8%	0.3%	0.6%	1.0%
20 Film Plastic - Shopping Bags	0.3%	0.1%	0.2%	0.4%
21 Film Plastic - Other	6.0%	2.8%	4.3%	7.8%
22 Other Rigid Plastic	3.9%	5.7%	0.3%	7.4%
Total Plastic	**15.8%**			
ORGANIC				
23 Food Waste	21.0%	3.6%	18.7%	23.2%
24 Clothing/Linens/Textiles/Leather	5.4%	4.1%	2.8%	7.9%
25 Carpets/Rugs	1.0%	3.2%	<0.1%	3.0%
26 Rubber	0.2%	0.5%	<0.1%	0.5%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	3.8%	1.8%	2.6%	4.9%
29 Fines	2.4%	0.5%	2.0%	2.7%
30 Miscellaneous Organics	7.3%	1.1%	6.6%	8.0%
Total Organics	**41.0%**			
YARD WASTE				
31 Grass	<0.1%	0.1%	<0.1%	0.1%
32 Leaves	<0.1%	<0.1%	<0.1%	<0.1%
33 Brush/Pruning	1.3%	2.2%	<0.1%	2.7%
Total Yard Waste	**1.3%**			

Table 3 - Multi-Family Waste Composition - Spring 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	<0.1%	<0.1%	<0.1%	<0.1%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	1.6%	2.7%	<0.1%	3.3%
Total Wood	**1.6%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.2%	0.7%	0.8%	1.6%
38 Other Ferrous	1.0%	1.4%	0.1%	1.9%
Total Ferrous Metals	**2.2%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.9%	0.4%	0.7%	1.2%
40 Aluminum Tins/Foil	0.6%	0.5%	0.3%	0.9%
41 Other Aluminum	0.1%	0.4%	<0.1%	0.4%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	0.7%	2.1%	<0.1%	1.9%
Total Non-Ferrous Metals	**2.3%**			
GLASS				
45 Clear	2.5%	1.0%	1.9%	3.1%
46 Brown	1.4%	1.1%	0.7%	2.0%
47 Green	0.9%	0.7%	0.5%	1.3%
48 Non-container Glass	0.3%	0.7%	<0.1%	0.7%
Total Glass	**5.0%**			
INORGANIC				
49 Concrete/Brick/Rock	<0.1%	<0.1%	<0.1%	<0.1%
50 Sheet Rock	<0.1%	<0.1%	<0.1%	<0.1%
51 Latex Paints	<0.1%	<0.1%	<0.1%	<0.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	1.3%	2.9%	<0.1%	3.1%
54 Miscellaneous Inorganic	4.9%	7.7%	0.1%	9.7%
Total Inorganics	**6.2%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	0.3%	0.9%	<0.1%	0.8%
Total Household Hazardous Wastes	**0.3%**			
TOTALS	**100.0%**			

Note: Composition based on 10 samples

Table 4 - Single Family Municipal Waste Composition - Spring 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.8%	2.5%	0.7%	5.0%
2 Corrugated Cardboard	1.4%	1.2%	0.3%	2.4%
3 Magazines	0.4%	0.6%	<0.1%	0.9%
4 Paperboard	2.4%	1.3%	1.3%	3.6%
5 Aseptic/Poly-coated	2.2%	1.3%	1.1%	3.4%
6 Office Paper	1.2%	1.5%	<0.1%	2.6%
7 Shredded Paper	<0.1%	<0.1%	<0.1%	<0.1%
8 Books	<0.1%	<0.1%	<0.1%	<0.1%
9 Other Recyclable Paper	3.7%	2.0%	2.0%	5.5%
10 Non-Recyclable Paper	9.7%	4.5%	5.7%	13.7%
Total Paper	**23.9%**			
PLASTIC				
11 PET (#1) Bottles	1.1%	1.0%	0.2%	2.0%
12 PET (#1) Trays and Tubs	0.7%	0.7%	<0.1%	1.3%
13 HDPE (#2) Natural Bottles	0.1%	0.2%	<0.1%	0.3%
14 HDPE (#2) Pigmented Bottles	0.4%	0.4%	<0.1%	0.8%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	1.1%	0.3%	0.9%	1.4%
17 Other #6 -Polystyrene	0.6%	0.4%	0.3%	0.9%
18 Plastic Flower Pots	<0.1%	<0.1%	<0.1%	<0.1%
19 Other Recyclable Containers/Tubs	1.1%	0.3%	0.8%	1.4%
20 Film Plastic - Shopping Bags	0.4%	0.5%	<0.1%	0.8%
21 Film Plastic - Other	7.7%	1.9%	6.0%	9.3%
22 Other Rigid Plastic	1.2%	0.9%	0.4%	1.9%
Total Plastic	**14.4%**			
ORGANIC				
23 Food Waste	23.4%	5.7%	18.4%	28.4%
24 Clothing/Linens/Textiles/Leather	3.9%	3.2%	1.1%	6.7%
25 Carpets/Rugs	0.6%	1.4%	<0.1%	1.9%
26 Rubber	<0.1%	<0.1%	<0.1%	<0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	4.2%	2.2%	2.2%	6.1%
29 Fines	3.1%	0.7%	2.5%	3.7%
30 Miscellaneous Organics	8.3%	1.2%	7.3%	9.4%
Total Organics	**43.6%**			
YARD WASTE				
31 Grass	<0.1%	<0.1%	<0.1%	<0.1%
32 Leaves	<0.1%	<0.1%	<0.1%	<0.1%
33 Brush/Pruning	0.9%	1.5%	<0.1%	2.2%
Total Yard Waste	**0.9%**			

Table 4 - Single Family Municipal Waste Composition - Spring 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	1.1%	1.9%	<0.1%	2.8%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	2.9%	5.5%	<0.1%	7.7%
Total Wood	**4.1%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	0.6%	0.2%	0.4%	0.8%
38 Other Ferrous	0.3%	0.5%	<0.1%	0.8%
Total Ferrous Metals	**0.9%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.3%	0.2%	0.1%	0.4%
40 Aluminum Tins/Foil	1.1%	0.6%	0.6%	1.7%
41 Other Aluminum	<0.1%	<0.1%	<0.1%	<0.1%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	0.2%	0.5%	<0.1%	0.6%
Total Non-Ferrous Metals	**1.6%**			
GLASS				
45 Clear	0.6%	0.5%	0.1%	1.0%
46 Brown	0.3%	0.3%	<0.1%	0.6%
47 Green	0.3%	0.4%	<0.1%	0.6%
48 Non-container Glass	<0.1%	<0.1%	<0.1%	<0.1%
Total Glass	**1.1%**			
INORGANIC				
49 Concrete/Brick/Rock	<0.1%	<0.1%	<0.1%	<0.1%
50 Sheet Rock	<0.1%	<0.1%	<0.1%	<0.1%
51 Latex Paints	<0.1%	<0.1%	<0.1%	<0.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	1.7%	1.9%	<0.1%	3.4%
54 Miscellaneous Inorganic	7.9%	7.7%	1.1%	14.6%
Total Inorganics	**9.6%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**<0.1%**			
TOTALS	**100.0%**			

Note: Composition based on 5 samples

Table 5 - Single Family Subdistrict B Waste Composition - Spring 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	3.1%	1.7%	2.2%	4.0%
2 Corrugated Cardboard	0.7%	0.5%	0.4%	0.9%
3 Magazines	1.2%	1.3%	0.5%	1.8%
4 Paperboard	2.2%	1.0%	1.7%	2.8%
5 Aseptic/Poly-coated	1.7%	1.2%	1.1%	2.3%
6 Office Paper	1.1%	1.1%	0.5%	1.6%
7 Shredded Paper	0.8%	1.4%	<0.1%	1.5%
8 Books	0.6%	1.8%	<0.1%	1.5%
9 Other Recyclable Paper	3.1%	1.6%	2.3%	3.9%
10 Non-Recyclable Paper	12.0%	3.0%	10.4%	13.5%
Total Paper	**26.4%**			
PLASTIC				
11 PET (#1) Bottles	1.0%	0.4%	0.8%	1.2%
12 PET (#1) Trays and Tubs	0.5%	0.2%	0.3%	0.6%
13 HDPE (#2) Natural Bottles	0.2%	0.2%	0.1%	0.3%
14 HDPE (#2) Pigmented Bottles	0.5%	0.4%	0.3%	0.7%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	1.1%	0.5%	0.9%	1.4%
17 Other #6 -Polystyrene	0.6%	0.6%	0.4%	0.9%
18 Plastic Flower Pots	0.1%	0.3%	<0.1%	0.3%
19 Other Recyclable Containers/Tubs	0.9%	0.4%	0.7%	1.1%
20 Film Plastic - Shopping Bags	0.3%	0.1%	0.2%	0.4%
21 Film Plastic - Other	6.7%	1.7%	5.9%	7.6%
22 Other Rigid Plastic	1.6%	2.3%	0.4%	2.8%
Total Plastic	**13.6%**			
ORGANIC				
23 Food Waste	30.6%	8.6%	26.3%	35.0%
24 Clothing/Linens/Textiles/Leather	4.0%	2.6%	2.7%	5.3%
25 Carpets/Rugs	<0.1%	<0.1%	<0.1%	<0.1%
26 Rubber	<0.1%	<0.1%	<0.1%	<0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	5.5%	2.6%	4.2%	6.8%
29 Fines	2.2%	0.2%	2.1%	2.4%
30 Miscellaneous Organics	7.9%	0.8%	7.5%	8.3%
Total Organics	**50.2%**			
YARD WASTE				
31 Grass	0.3%	0.9%	<0.1%	0.7%
32 Leaves	<0.1%	<0.1%	<0.1%	<0.1%
33 Brush/Pruning	1.2%	1.1%	0.6%	1.8%
Total Yard Waste	**1.5%**			

Table 5 - Single Family Subdistrict B Waste Composition - Spring 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.4%	1.1%	<0.1%	0.9%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	0.9%	1.6%	<0.1%	1.7%
Total Wood	**1.3%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.1%	1.0%	0.6%	1.6%
38 Other Ferrous	0.5%	1.1%	<0.1%	1.1%
Total Ferrous Metals	**1.6%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.5%	0.3%	0.3%	0.6%
40 Aluminum Tins/Foil	0.4%	0.4%	0.2%	0.6%
41 Other Aluminum	<0.1%	<0.1%	<0.1%	<0.1%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	0.3%	<0.1%	0.2%
44 Other Non-Ferrous	0.1%	0.4%	<0.1%	0.3%
Total Non-Ferrous Metals	**1.0%**			
GLASS				
45 Clear	1.0%	0.9%	0.5%	1.4%
46 Brown	0.3%	0.4%	0.1%	0.6%
47 Green	0.4%	0.7%	<0.1%	0.8%
48 Non-container Glass	0.2%	0.6%	<0.1%	0.5%
Total Glass	**2.0%**			
INORGANIC				
49 Concrete/Brick/Rock	0.2%	0.7%	<0.1%	0.5%
50 Sheet Rock	<0.1%	<0.1%	<0.1%	<0.1%
51 Latex Paints	<0.1%	<0.1%	<0.1%	<0.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	0.8%	1.5%	<0.1%	1.6%
54 Miscellaneous Inorganic	1.4%	2.0%	0.4%	2.4%
Total Inorganics	**2.4%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**<0.1%**			
TOTALS	**100.0%**			

Note: Composition based on 15 samples

Table 6 - Single Family Subdistrict A Waste Composition - Spring 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.2%	1.8%	1.3%	3.1%
2 Corrugated Cardboard	0.7%	0.6%	0.3%	1.0%
3 Magazines	1.8%	1.8%	0.9%	2.7%
4 Paperboard	2.7%	2.0%	1.7%	3.7%
5 Aseptic/Poly-coated	1.1%	0.8%	0.7%	1.5%
6 Office Paper	1.3%	1.4%	0.5%	2.0%
7 Shredded Paper	0.4%	0.6%	0.1%	0.7%
8 Books	0.7%	1.6%	<0.1%	1.6%
9 Other Recyclable Paper	3.7%	1.9%	2.7%	4.6%
10 Non-Recyclable Paper	11.0%	4.2%	8.9%	13.1%
Total Paper	**25.5%**			
PLASTIC				
11 PET (#1) Bottles	0.7%	0.3%	0.6%	0.9%
12 PET (#1) Trays and Tubs	0.7%	0.4%	0.4%	0.9%
13 HDPE (#2) Natural Bottles	0.2%	0.2%	<0.1%	0.3%
14 HDPE (#2) Pigmented Bottles	0.4%	0.3%	0.2%	0.5%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	0.9%	0.5%	0.6%	1.1%
17 Other #6 -Polystyrene	0.4%	0.3%	0.2%	0.5%
18 Plastic Flower Pots	0.9%	1.6%	<0.1%	1.7%
19 Other Recyclable Containers/Tubs	1.0%	0.8%	0.6%	1.4%
20 Film Plastic - Shopping Bags	0.3%	0.2%	0.2%	0.3%
21 Film Plastic - Other	7.1%	2.9%	5.7%	8.6%
22 Other Rigid Plastic	1.3%	1.3%	0.6%	1.9%
Total Plastic	**13.7%**			
ORGANIC				
23 Food Waste	25.4%	4.9%	22.9%	27.9%
24 Clothing/Linens/Textiles/Leather	5.8%	2.6%	4.5%	7.1%
25 Carpets/Rugs	1.7%	4.2%	<0.1%	3.8%
26 Rubber	<0.1%	<0.1%	<0.1%	<0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	5.1%	2.9%	3.7%	6.6%
29 Fines	2.3%	0.6%	2.0%	2.6%
30 Miscellaneous Organics	7.6%	1.2%	7.0%	8.2%
Total Organics	**47.9%**			
YARD WASTE				
31 Grass	0.4%	1.0%	<0.1%	0.9%
32 Leaves	1.1%	3.0%	<0.1%	2.6%
33 Brush/Pruning	0.3%	0.5%	<0.1%	0.5%
Total Yard Waste	**1.7%**			

Table 6 - Single Family Subdistrict A Waste Composition - Spring 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.6%	1.3%	<0.1%	1.2%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	0.4%	0.6%	0.1%	0.7%
Total Wood	**1.0%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	0.9%	0.6%	0.6%	1.2%
38 Other Ferrous	0.5%	0.7%	0.1%	0.9%
Total Ferrous Metals	**1.4%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.6%	0.7%	0.3%	1.0%
40 Aluminum Tins/Foil	0.5%	0.3%	0.4%	0.7%
41 Other Aluminum	<0.1%	<0.1%	<0.1%	<0.1%
42 Brass	<0.1%	0.1%	<0.1%	0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	0.5%	2.0%	<0.1%	1.5%
Total Non-Ferrous Metals	**1.7%**			
GLASS				
45 Clear	0.8%	1.1%	0.2%	1.3%
46 Brown	0.3%	0.4%	<0.1%	0.4%
47 Green	0.3%	0.6%	<0.1%	0.6%
48 Non-container Glass	0.2%	0.4%	<0.1%	0.4%
Total Glass	**1.5%**			
INORGANIC				
49 Concrete/Brick/Rock	0.3%	0.6%	<0.1%	0.6%
50 Sheet Rock	0.8%	2.0%	<0.1%	1.8%
51 Latex Paints	0.3%	1.0%	<0.1%	0.7%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	0.7%	1.0%	0.2%	1.2%
54 Miscellaneous Inorganic	3.4%	5.8%	0.5%	6.3%
Total Inorganics	**5.4%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**<0.1%**			
TOTALS	**100.0%**			

Note: Composition based on 15 samples

It has been our pleasure working with you. If you have any questions on this report or would like to discuss the results further, please do not hesitate to contact either Stacey or Josh at (703) 471-6150.

Sincerely,

Josh DeGayner
Project Professional
SCS ENGINEERS

Stacey T. Demers
Project Director
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SCS ENGINEERS

July 11, 2013
File No. 02212006.02

Sent via Electronic Mail

Raycharn Liou, Project Manager
Division of Solid Waste Services
Department of Environmental Protection
101 Monroe Street, Sixth Floor
Rockville, Maryland 20850

Subject: Montgomery County Waste Composition Study, Summary Report for Summer 2013

Dear Mr. Liou,

SCS Engineers (SCS) is pleased to submit this summary report on data gathered during waste characterization services performed at the Montgomery County Solid Waste Transfer Station for the Summer 2013 sampling event conducted from June 21th through June 29th, 2013.

Summary of Results

A total of 75 waste samples were manually sorted into 64 distinct material categories during the field activity. The composition of each category is given as a percentage of the waste stream by weight. Results from the waste characterization are presented in the following tables:

- **Table 1** presents the Overall composition based on the weighted average amongst sectors of all 75 samples that were collected and sorted across the five generating sectors.
- **Table 2** presents the Commercial waste composition based on the 30 samples that were collected and sorted from the commercial waste stream.
- **Table 3** presents the Multi-Family composition based on the 10 samples that were collected and sorted from the multi-family waste stream.
- **Table 4** presents the Single-Family Municipal composition based on the 5 samples that were collected and sorted from the single-family municipal waste haulers.
- **Table 5** presents the Single-Family Subdistrict B composition. This composition is based on the 15 samples that were collected and sorted from the waste stream generated by single-family households located in subdistrict B.
- **Table 6** presents the Single-Family Subdistrict A composition. This composition is based on the 15 samples that were collected and sorted from the waste stream generated by single-family households located in subdistrict A.

Table 1 - Weighted Overall Waste Composition - Summer 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.3%	3.9%	1.4%	3.2%
2 Corrugated Cardboard	2.6%	2.4%	2.1%	3.2%
3 Magazines	1.5%	2.1%	1.0%	1.9%
4 Paperboard	2.8%	2.3%	2.2%	3.3%
5 Aseptic/Poly-coated	2.0%	2.2%	1.5%	2.5%
6 Office Paper	1.8%	2.6%	1.2%	2.3%
7 Shredded Paper	0.5%	1.2%	0.2%	0.7%
8 Books	0.2%	0.6%	<0.1%	0.3%
9 Other Recyclable Paper	5.1%	2.9%	4.4%	5.8%
10 Non-Recyclable Paper	9.8%	4.6%	8.8%	10.9%
Total Paper	**28.5%**			
PLASTIC				
11 PET (#1) Bottles	1.4%	1.0%	1.2%	1.7%
12 PET (#1) Trays and Tubs	0.5%	0.5%	0.4%	0.7%
13 HDPE (#2) Natural Bottles	0.3%	0.3%	0.2%	0.4%
14 HDPE (#2) Pigmented Bottles	0.3%	0.3%	0.2%	0.4%
15 #3-#7 Plastic Bottles	<0.1%	0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	0.9%	0.7%	0.8%	1.1%
17 Other #6 -Polystyrene	0.7%	1.4%	0.4%	1.0%
18 Plastic Flower Pots	<0.1%	0.3%	<0.1%	0.1%
19 Other Recyclable Containers/Tubs	1.0%	0.7%	0.9%	1.2%
20 Film Plastic - Shopping Bags	0.2%	0.3%	0.2%	0.3%
21 Film Plastic - Other	8.6%	3.9%	7.7%	9.5%
22 Other Rigid Plastic	2.6%	2.4%	2.0%	3.1%
Total Plastic	**16.7%**			
ORGANIC				
23 Food Waste	20.2%	13.5%	17.1%	23.2%
24 Clothing/Linens/Textiles/Leather	5.6%	6.1%	4.2%	6.9%
25 Carpets/Rugs	0.8%	3.2%	0.1%	1.6%
26 Rubber	<0.1%	0.2%	<0.1%	<0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	3.2%	3.4%	2.5%	4.0%
29 Fines	2.0%	0.8%	1.8%	2.2%
30 Miscellaneous Organics	7.6%	1.5%	7.2%	7.9%
Total Organics	**39.4%**			
YARD WASTE				
31 Grass	0.4%	1.4%	<0.1%	0.7%
32 Leaves	0.2%	1.3%	<0.1%	0.5%
33 Brush/Pruning	1.0%	2.6%	0.4%	1.6%
Total Yard Waste	**1.6%**			

Table 1 - Weighted Overall Waste Composition - Summer 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.6%	3.0%	<0.1%	1.3%
35 Pallets	0.2%	1.1%	<0.1%	0.4%
36 Other Wood	3.2%	6.5%	1.7%	4.7%
Total Wood	**4.0%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	2.3%	7.0%	0.7%	3.9%
38 Other Ferrous	0.6%	1.3%	0.3%	0.9%
Total Ferrous Metals	**2.9%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.5%	0.4%	0.4%	0.6%
40 Aluminum Tins/Foil	0.4%	0.3%	0.3%	0.5%
41 Other Aluminum	<0.1%	0.1%	<0.1%	<0.1%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	0.4%	<0.1%	0.2%
Total Non-Ferrous Metals	**0.8%**			
GLASS				
45 Clear	1.4%	1.5%	1.1%	1.7%
46 Brown	0.4%	0.8%	0.3%	0.6%
47 Green	0.6%	1.0%	0.3%	0.8%
48 Non-container Glass	<0.1%	0.3%	<0.1%	0.1%
Total Glass	**2.4%**			
INORGANIC				
49 Concrete/Brick/Rock	0.1%	0.7%	<0.1%	0.3%
50 Sheet Rock	0.3%	1.6%	<0.1%	0.7%
51 Latex Paints	<0.1%	0.2%	<0.1%	<0.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	1.1%	2.3%	0.6%	1.7%
54 Miscellaneous Inorganic	1.7%	2.8%	1.1%	2.4%
Total Inorganics	**3.3%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	0.3%	<0.1%	<0.1%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**<0.1%**			
TOTALS	**100.0%**			

Note: Composition based on 75 samples

Table 2 - Commercial Waste Composition - Summer 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	2.5%	5.0%	0.7%	4.3%
2 Corrugated Cardboard	3.3%	2.8%	2.3%	4.4%
3 Magazines	1.4%	2.4%	0.5%	2.3%
4 Paperboard	2.6%	2.8%	1.6%	3.6%
5 Aseptic/Poly-coated	2.5%	2.8%	1.5%	3.5%
6 Office Paper	2.2%	3.1%	1.1%	3.3%
7 Shredded Paper	0.4%	0.8%	0.1%	0.7%
8 Books	0.2%	0.6%	<0.1%	0.4%
9 Other Recyclable Paper	4.9%	3.3%	3.8%	6.1%
10 Non-Recyclable Paper	9.5%	5.6%	7.5%	11.5%
Total Paper	**29.6%**			
PLASTIC				
11 PET (#1) Bottles	1.5%	1.2%	1.0%	1.9%
12 PET (#1) Trays and Tubs	0.5%	0.5%	0.3%	0.7%
13 HDPE (#2) Natural Bottles	0.4%	0.4%	0.2%	0.5%
14 HDPE (#2) Pigmented Bottles	0.2%	0.3%	<0.1%	0.3%
15 #3-#7 Plastic Bottles	<0.1%	0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	0.9%	0.7%	0.7%	1.2%
17 Other #6 -Polystyrene	0.9%	1.8%	0.3%	1.6%
18 Plastic Flower Pots	<0.1%	<0.1%	<0.1%	<0.1%
19 Other Recyclable Containers/Tubs	1.1%	0.7%	0.8%	1.3%
20 Film Plastic - Shopping Bags	0.2%	0.3%	<0.1%	0.3%
21 Film Plastic - Other	9.3%	4.7%	7.6%	11.0%
22 Other Rigid Plastic	2.9%	2.8%	1.9%	4.0%
Total Plastic	**17.9%**			
ORGANIC				
23 Food Waste	20.8%	17.2%	14.6%	26.9%
24 Clothing/Linens/Textiles/Leather	5.2%	7.1%	2.6%	7.7%
25 Carpets/Rugs	1.0%	3.6%	<0.1%	2.3%
26 Rubber	<0.1%	0.3%	<0.1%	0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	1.3%	2.6%	0.4%	2.3%
29 Fines	1.9%	0.8%	1.6%	2.2%
30 Miscellaneous Organics	7.2%	1.9%	6.6%	7.9%
Total Organics	**37.4%**			
YARD WASTE				
31 Grass	<0.1%	0.5%	<0.1%	0.3%
32 Leaves	0.3%	1.4%	<0.1%	0.8%
33 Brush/Pruning	0.7%	2.9%	<0.1%	1.8%
Total Yard Waste	**1.0%**			

Table 2 - Commercial Waste Composition - Summer 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	1.0%	3.9%	<0.1%	2.4%
35 Pallets	0.4%	1.4%	<0.1%	0.9%
36 Other Wood	3.7%	7.9%	0.9%	6.6%
Total Wood	**5.1%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	3.1%	9.1%	<0.1%	6.3%
38 Other Ferrous	0.6%	1.5%	<0.1%	1.2%
Total Ferrous Metals	**3.7%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.4%	0.4%	0.3%	0.5%
40 Aluminum Tins/Foil	0.3%	0.3%	0.2%	0.4%
41 Other Aluminum	<0.1%	<0.1%	<0.1%	<0.1%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	0.1%	0.6%	<0.1%	0.3%
Total Non-Ferrous Metals	**0.8%**			
GLASS				
45 Clear	1.1%	1.3%	0.6%	1.5%
46 Brown	0.4%	0.7%	0.1%	0.6%
47 Green	0.4%	0.9%	0.1%	0.8%
48 Non-container Glass	<0.1%	0.2%	<0.1%	0.1%
Total Glass	**1.9%**			
INORGANIC				
49 Concrete/Brick/Rock	0.2%	0.7%	<0.1%	0.4%
50 Sheet Rock	0.1%	0.8%	<0.1%	0.4%
51 Latex Paints	<0.1%	<0.1%	<0.1%	<0.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	0.9%	2.3%	<0.1%	1.7%
54 Miscellaneous Inorganic	1.2%	1.6%	0.6%	1.7%
Total Inorganics	**2.3%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	0.3%	<0.1%	0.2%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**<0.1%**			
TOTALS	**100.0%**			

Note: Composition based on 30 samples

Table 3 - Multi-Family Waste Composition - Summer 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	3.1%	2.5%	1.5%	4.6%
2 Corrugated Cardboard	2.3%	1.7%	1.2%	3.3%
3 Magazines	1.5%	1.2%	0.7%	2.2%
4 Paperboard	3.9%	1.4%	3.0%	4.8%
5 Aseptic/Poly-coated	0.9%	0.5%	0.6%	1.2%
6 Office Paper	1.9%	1.8%	0.8%	3.0%
7 Shredded Paper	0.6%	1.8%	<0.1%	1.7%
8 Books	<0.1%	0.2%	<0.1%	0.2%
9 Other Recyclable Paper	5.1%	2.0%	3.8%	6.3%
10 Non-Recyclable Paper	8.7%	3.3%	6.7%	10.8%
Total Paper	**27.9%**			
PLASTIC				
11 PET (#1) Bottles	1.9%	0.9%	1.4%	2.5%
12 PET (#1) Trays and Tubs	0.7%	0.6%	0.4%	1.1%
13 HDPE (#2) Natural Bottles	0.4%	0.3%	0.2%	0.5%
14 HDPE (#2) Pigmented Bottles	0.6%	0.5%	0.4%	0.9%
15 #3-#7 Plastic Bottles	<0.1%	0.2%	<0.1%	0.2%
16 Expanded Polystyrene (styrofoam)	0.9%	0.3%	0.7%	1.1%
17 Other #6 -Polystyrene	0.3%	0.2%	0.1%	0.5%
18 Plastic Flower Pots	<0.1%	<0.1%	<0.1%	<0.1%
19 Other Recyclable Containers/Tubs	1.2%	0.6%	0.9%	1.6%
20 Film Plastic - Shopping Bags	0.2%	0.1%	0.1%	0.3%
21 Film Plastic - Other	7.5%	3.3%	5.4%	9.5%
22 Other Rigid Plastic	1.8%	1.2%	1.0%	2.6%
Total Plastic	**15.5%**			
ORGANIC				
23 Food Waste	19.1%	6.1%	15.3%	22.9%
24 Clothing/Linens/Textiles/Leather	6.2%	5.9%	2.6%	9.9%
25 Carpets/Rugs	<0.1%	<0.1%	<0.1%	<0.1%
26 Rubber	<0.1%	<0.1%	<0.1%	<0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	8.1%	6.2%	4.3%	11.9%
29 Fines	1.9%	0.6%	1.5%	2.3%
30 Miscellaneous Organics	7.6%	1.2%	6.9%	8.3%
Total Organics	**43.0%**			
YARD WASTE				
31 Grass	<0.1%	<0.1%	<0.1%	<0.1%
32 Leaves	<0.1%	<0.1%	<0.1%	<0.1%
33 Brush/Pruning	<0.1%	0.2%	<0.1%	0.1%
Total Yard Waste	**0.0%**			

Table 3 - Multi-Family Waste Composition - Summer 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	<0.1%	<0.1%	<0.1%	<0.1%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	0.9%	2.2%	<0.1%	2.3%
Total Wood	**0.9%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	2.2%	2.4%	0.7%	3.7%
38 Other Ferrous	0.3%	0.5%	<0.1%	0.6%
Total Ferrous Metals	**2.6%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.8%	0.5%	0.5%	1.1%
40 Aluminum Tins/Foil	0.5%	0.3%	0.3%	0.7%
41 Other Aluminum	<0.1%	<0.1%	<0.1%	<0.1%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	<0.1%	<0.1%	<0.1%
Total Non-Ferrous Metals	**1.3%**			
GLASS				
45 Clear	3.2%	2.5%	1.6%	4.7%
46 Brown	1.1%	1.5%	0.1%	2.0%
47 Green	1.4%	1.8%	0.3%	2.4%
48 Non-container Glass	<0.1%	0.2%	<0.1%	0.2%
Total Glass	**5.6%**			
INORGANIC				
49 Concrete/Brick/Rock	<0.1%	<0.1%	<0.1%	<0.1%
50 Sheet Rock	<0.1%	<0.1%	<0.1%	<0.1%
51 Latex Paints	0.2%	0.4%	<0.1%	0.4%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	0.6%	0.8%	<0.1%	1.1%
54 Miscellaneous Inorganic	2.2%	2.1%	0.9%	3.5%
Total Inorganics	**3.0%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**<0.1%**			
TOTALS	**100.0%**			

Note: Composition based on 10 samples

Table 4 - Single Family Municipal Waste Composition - Summer 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	1.8%	1.2%	0.7%	2.9%
2 Corrugated Cardboard	1.3%	0.7%	0.8%	1.9%
3 Magazines	2.0%	1.2%	0.9%	3.0%
4 Paperboard	5.9%	3.9%	2.5%	9.3%
5 Aseptic/Poly-coated	1.6%	1.3%	0.5%	2.8%
6 Office Paper	0.5%	0.1%	0.4%	0.6%
7 Shredded Paper	<0.1%	<0.1%	<0.1%	<0.1%
8 Books	<0.1%	<0.1%	<0.1%	<0.1%
9 Other Recyclable Paper	7.1%	5.1%	2.6%	11.6%
10 Non-Recyclable Paper	14.1%	4.6%	10.1%	18.1%
Total Paper	**34.4%**			
PLASTIC				
11 PET (#1) Bottles	1.3%	1.0%	0.5%	2.1%
12 PET (#1) Trays and Tubs	0.7%	0.4%	0.3%	1.1%
13 HDPE (#2) Natural Bottles	<0.1%	0.1%	<0.1%	0.2%
14 HDPE (#2) Pigmented Bottles	0.6%	0.4%	0.3%	0.9%
15 #3-#7 Plastic Bottles	<0.1%	<0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	1.1%	0.5%	0.6%	1.5%
17 Other #6 -Polystyrene	0.2%	0.3%	<0.1%	0.5%
18 Plastic Flower Pots	<0.1%	<0.1%	<0.1%	<0.1%
19 Other Recyclable Containers/Tubs	1.3%	0.7%	0.7%	1.9%
20 Film Plastic - Shopping Bags	0.4%	0.4%	<0.1%	0.7%
21 Film Plastic - Other	8.3%	1.1%	7.3%	9.3%
22 Other Rigid Plastic	1.4%	0.8%	0.7%	2.2%
Total Plastic	**15.3%**			
ORGANIC				
23 Food Waste	18.5%	5.0%	14.1%	22.9%
24 Clothing/Linens/Textiles/Leather	4.7%	3.6%	1.6%	7.9%
25 Carpets/Rugs	<0.1%	<0.1%	<0.1%	<0.1%
26 Rubber	<0.1%	<0.1%	<0.1%	<0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	5.3%	2.5%	3.2%	7.5%
29 Fines	2.4%	0.4%	2.0%	2.8%
30 Miscellaneous Organics	8.5%	0.6%	7.9%	9.0%
Total Organics	**39.4%**			
YARD WASTE				
31 Grass	0.6%	1.0%	<0.1%	1.5%
32 Leaves	<0.1%	<0.1%	<0.1%	<0.1%
33 Brush/Pruning	1.6%	2.1%	<0.1%	3.4%
Total Yard Waste	**2.2%**			

Table 4 - Single Family Municipal Waste Composition - Summer 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	<0.1%	<0.1%	<0.1%	<0.1%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	0.7%	0.9%	<0.1%	1.4%
Total Wood	**0.7%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	0.8%	0.7%	0.2%	1.4%
38 Other Ferrous	0.6%	0.5%	0.2%	1.0%
Total Ferrous Metals	**1.4%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.6%	0.7%	<0.1%	1.1%
40 Aluminum Tins/Foil	0.5%	0.3%	0.3%	0.8%
41 Other Aluminum	<0.1%	<0.1%	<0.1%	<0.1%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	<0.1%	<0.1%	<0.1%
Total Non-Ferrous Metals	**1.1%**			
GLASS				
45 Clear	0.7%	0.8%	<0.1%	1.3%
46 Brown	0.4%	0.3%	0.1%	0.6%
47 Green	0.3%	0.3%	<0.1%	0.6%
48 Non-container Glass	0.1%	0.3%	<0.1%	0.4%
Total Glass	**1.5%**			
INORGANIC				
49 Concrete/Brick/Rock	<0.1%	<0.1%	<0.1%	<0.1%
50 Sheet Rock	0.6%	1.3%	<0.1%	1.7%
51 Latex Paints	<0.1%	<0.1%	<0.1%	<0.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	0.9%	1.3%	<0.1%	2.1%
54 Miscellaneous Inorganic	2.5%	2.5%	0.3%	4.6%
Total Inorganics	**4.0%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**<0.1%**			
TOTALS	**100.0%**			

Note: Composition based on 5 samples

Table 5 - Single Family Subdistrict B Waste Composition - Summer 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	1.5%	1.3%	0.8%	2.2%
2 Corrugated Cardboard	1.9%	1.9%	0.9%	2.8%
3 Magazines	1.7%	1.6%	0.9%	2.5%
4 Paperboard	2.2%	1.0%	1.7%	2.7%
5 Aseptic/Poly-coated	1.6%	0.7%	1.2%	1.9%
6 Office Paper	0.6%	0.7%	0.3%	1.0%
7 Shredded Paper	0.7%	1.9%	<0.1%	1.7%
8 Books	0.2%	0.6%	<0.1%	0.5%
9 Other Recyclable Paper	5.4%	2.4%	4.2%	6.6%
10 Non-Recyclable Paper	9.8%	2.3%	8.6%	10.9%
Total Paper	**25.6%**			
PLASTIC				
11 PET (#1) Bottles	1.3%	0.7%	0.9%	1.6%
12 PET (#1) Trays and Tubs	0.6%	0.4%	0.4%	0.8%
13 HDPE (#2) Natural Bottles	<0.1%	0.1%	<0.1%	0.2%
14 HDPE (#2) Pigmented Bottles	0.2%	0.2%	0.1%	0.3%
15 #3-#7 Plastic Bottles	<0.1%	0.1%	<0.1%	0.1%
16 Expanded Polystyrene (styrofoam)	1.0%	0.8%	0.6%	1.4%
17 Other #6 -Polystyrene	0.4%	0.4%	0.2%	0.6%
18 Plastic Flower Pots	0.3%	0.6%	<0.1%	0.6%
19 Other Recyclable Containers/Tubs	1.0%	0.7%	0.7%	1.3%
20 Film Plastic - Shopping Bags	0.5%	0.4%	0.3%	0.7%
21 Film Plastic - Other	6.9%	1.9%	5.9%	7.9%
22 Other Rigid Plastic	2.2%	2.2%	1.1%	3.3%
Total Plastic	**14.3%**			
ORGANIC				
23 Food Waste	21.2%	5.6%	18.3%	24.0%
24 Clothing/Linens/Textiles/Leather	4.9%	2.7%	3.5%	6.3%
25 Carpets/Rugs	1.6%	4.0%	<0.1%	3.6%
26 Rubber	<0.1%	0.2%	<0.1%	0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	3.7%	2.4%	2.5%	4.9%
29 Fines	2.3%	0.8%	1.9%	2.6%
30 Miscellaneous Organics	8.2%	0.7%	7.8%	8.5%
Total Organics	**41.8%**			
YARD WASTE				
31 Grass	1.3%	3.0%	<0.1%	2.9%
32 Leaves	<0.1%	<0.1%	<0.1%	<0.1%
33 Brush/Pruning	2.2%	1.9%	1.2%	3.1%
Total Yard Waste	**3.5%**			

Table 5 - Single Family Subdistrict B Waste Composition - Summer 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	0.2%	0.9%	<0.1%	0.7%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	3.8%	4.9%	1.3%	6.3%
Total Wood	**4.0%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	0.8%	0.6%	0.5%	1.1%
38 Other Ferrous	0.9%	1.4%	0.2%	1.7%
Total Ferrous Metals	**1.7%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.4%	0.4%	0.2%	0.6%
40 Aluminum Tins/Foil	0.5%	0.4%	0.3%	0.7%
41 Other Aluminum	<0.1%	0.3%	<0.1%	0.2%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	<0.1%	<0.1%	<0.1%
Total Non-Ferrous Metals	**0.9%**			
GLASS				
45 Clear	1.6%	1.4%	0.9%	2.2%
46 Brown	0.5%	0.6%	0.2%	0.8%
47 Green	0.5%	0.7%	0.2%	0.9%
48 Non-container Glass	<0.1%	0.2%	<0.1%	0.2%
Total Glass	**2.6%**			
INORGANIC				
49 Concrete/Brick/Rock	0.1%	0.5%	<0.1%	0.4%
50 Sheet Rock	<0.1%	<0.1%	<0.1%	<0.1%
51 Latex Paints	<0.1%	<0.1%	<0.1%	<0.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	2.7%	3.1%	1.1%	4.2%
54 Miscellaneous Inorganic	2.4%	5.0%	<0.1%	5.0%
Total Inorganics	**5.2%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	0.1%	<0.1%	<0.1%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**<0.1%**			
TOTALS	**100.0%**			

Note: Composition based on 15 samples

Table 6 - Single Family Subdistrict A Waste Composition - Summer 2013

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
PAPER				
1 Newspaper/Newsprint Catalogs	1.8%	1.3%	1.1%	2.4%
2 Corrugated Cardboard	0.9%	0.7%	0.6%	1.2%
3 Magazines	1.5%	1.6%	0.7%	2.3%
4 Paperboard	2.2%	0.8%	1.8%	2.7%
5 Aseptic/Poly-coated	1.4%	0.8%	1.0%	1.8%
6 Office Paper	1.2%	2.5%	<0.1%	2.5%
7 Shredded Paper	0.2%	0.9%	<0.1%	0.7%
8 Books	0.4%	0.8%	<0.1%	0.8%
9 Other Recyclable Paper	5.0%	1.8%	4.1%	5.9%
10 Non-Recyclable Paper	12.1%	2.5%	10.8%	13.4%
Total Paper	**26.8%**			
PLASTIC				
11 PET (#1) Bottles	1.0%	0.5%	0.8%	1.3%
12 PET (#1) Trays and Tubs	0.6%	0.5%	0.4%	0.9%
13 HDPE (#2) Natural Bottles	0.1%	0.2%	<0.1%	0.2%
14 HDPE (#2) Pigmented Bottles	0.4%	0.4%	0.2%	0.6%
15 #3-#7 Plastic Bottles	<0.1%	0.1%	<0.1%	<0.1%
16 Expanded Polystyrene (styrofoam)	0.9%	0.6%	0.6%	1.2%
17 Other #6 -Polystyrene	0.4%	0.3%	0.3%	0.6%
18 Plastic Flower Pots	<0.1%	0.1%	<0.1%	0.1%
19 Other Recyclable Containers/Tubs	0.8%	0.6%	0.5%	1.1%
20 Film Plastic - Shopping Bags	0.3%	0.2%	0.1%	0.4%
21 Film Plastic - Other	8.8%	1.9%	7.9%	9.8%
22 Other Rigid Plastic	2.3%	1.8%	1.4%	3.2%
Total Plastic	**15.8%**			
ORGANIC				
23 Food Waste	17.1%	6.0%	14.0%	20.1%
24 Clothing/Linens/Textiles/Leather	8.1%	4.8%	5.6%	10.5%
25 Carpets/Rugs	<0.1%	<0.1%	<0.1%	<0.1%
26 Rubber	<0.1%	<0.1%	<0.1%	<0.1%
27 Tires	<0.1%	<0.1%	<0.1%	<0.1%
28 Diapers & Sanitary Products	5.9%	3.2%	4.3%	7.5%
29 Fines	2.1%	0.7%	1.8%	2.5%
30 Miscellaneous Organics	8.2%	0.6%	7.8%	8.5%
Total Organics	**41.3%**			
YARD WASTE				
31 Grass	0.7%	1.3%	<0.1%	1.4%
32 Leaves	0.6%	2.4%	<0.1%	1.9%
33 Brush/Pruning	1.7%	3.0%	0.2%	3.2%
Total Yard Waste	**3.0%**			

Table 6 - Single Family Subdistrict A Waste Composition - Summer 2013 (continued)

Material Components	Mean Composition	Standard Deviation	95% Confidence Limits Lower	95% Confidence Limits Upper
WOOD				
34 Lumber	<0.1%	0.1%	<0.1%	<0.1%
35 Pallets	<0.1%	<0.1%	<0.1%	<0.1%
36 Other Wood	3.0%	4.8%	0.6%	5.5%
Total Wood	**3.0%**			
FERROUS METAL				
37 Ferous/Bi-metal Cans	1.2%	1.3%	0.5%	1.8%
38 Other Ferrous	0.6%	0.6%	0.3%	0.9%
Total Ferrous Metals	**1.7%**			
NON-FERROUS METAL				
39 Aluminum Cans	0.3%	0.3%	0.2%	0.5%
40 Aluminum Tins/Foil	0.6%	0.4%	0.4%	0.7%
41 Other Aluminum	<0.1%	<0.1%	<0.1%	<0.1%
42 Brass	<0.1%	<0.1%	<0.1%	<0.1%
43 Copper	<0.1%	<0.1%	<0.1%	<0.1%
44 Other Non-Ferrous	<0.1%	0.1%	<0.1%	<0.1%
Total Non-Ferrous Metals	**0.9%**			
GLASS				
45 Clear	0.7%	1.1%	0.1%	1.2%
46 Brown	<0.1%	0.2%	<0.1%	0.1%
47 Green	0.4%	0.5%	0.1%	0.6%
48 Non-container Glass	0.3%	0.5%	<0.1%	0.5%
Total Glass	**1.3%**			
INORGANIC				
49 Concrete/Brick/Rock	0.3%	0.9%	<0.1%	0.8%
50 Sheet Rock	1.8%	4.8%	<0.1%	4.3%
51 Latex Paints	<0.1%	<0.1%	<0.1%	<0.1%
52 Fluorescent Lamps	<0.1%	<0.1%	<0.1%	<0.1%
53 Electronics	0.9%	2.7%	<0.1%	2.3%
54 Miscellaneous Inorganic	2.9%	3.9%	0.9%	4.8%
Total Inorganics	**5.9%**			
HHW				
55 Lead-Acid Batteries	<0.1%	<0.1%	<0.1%	<0.1%
56 Other Rechargeable Batteries	<0.1%	<0.1%	<0.1%	<0.1%
57 Other Batteries	<0.1%	<0.1%	<0.1%	<0.1%
58 Oil-based Paints/Thinners	<0.1%	<0.1%	<0.1%	<0.1%
59 Poisons	<0.1%	<0.1%	<0.1%	<0.1%
60 Corrosives/Solvents	<0.1%	<0.1%	<0.1%	<0.1%
61 Medical	<0.1%	<0.1%	<0.1%	<0.1%
62 Fuel/Lubricants/Auto	<0.1%	<0.1%	<0.1%	<0.1%
63 HW Containers	<0.1%	<0.1%	<0.1%	<0.1%
64 Other Hazardous	<0.1%	<0.1%	<0.1%	<0.1%
Total Household Hazardous Wastes	**<0.1%**			
TOTALS	**100.0%**			

Note: Composition based on 15 samples

It has been our pleasure working with you. If you have any questions on this report or would like to discuss the results further, please do not hesitate to contact either Stacey or Josh at (703) 471-6150.

Sincerely,

Josh DeGayner
Project Professional
SCS ENGINEERS

Stacey T. Demers
Project Director
SCS ENGINEERS

Appendix B
Material Category Definitions

Montgomery County 2012/2013 Solid Waste Composition Study Definitions of Sort Categories

PAPER

1. Newspaper/Newsprint/Inserts: Consists of all paper products printed on daily or weekly newspapers, advertising, and other similar items. Includes any glossy, shiny, or other coated newspaper inserts. Publications can be one color (e.g., black and white) or multi-color.

2. Corrugated Cardboard: Paperboard containers consisting of Kraft (brown) linerboard with corrugated (fluted medium) fillings.

3. Magazines/Catalogs: Publications which are printed on glossy or higher grade paper. This does not include magazines, glossy catalogs, etc., which do not consist of glossy paper throughout (e.g., comic books).

4. Paperboard: Non-corrugated boxes and containers typically used for holding dry food products, detergents, shoes, and other similar packaged goods. Outside of box or container can be printed. Inside surface is typically a dull gray, brown, or white color.

5. Aseptic/Coated Paper Containers: Consist of plastic or waxed coated containers such as gable-topped milk and juice cartons, Chinese food take-out boxes, and juice drink boxes such as those made by Ocean Spray etc.

6. Office Paper: High-grade paper products originating from an office environment such as white or colored printing, writing, or copier paper; computer paper (with or without green bars); computer tab cards; file folders.

7. Shredded Paper: Self explanatory.

8. Books: Paper products consisting of printed pages which are glued or stitched between soft or hard outside covers, including reference manuals, phone books, and text books.

9. Other Recyclable Mixed Paper: Envelopes, junk and unwanted mail, construction paper, wrapping paper, brochures, Kraft paper, and other recyclable papers.

10. Non-Recyclable Paper: All paper products not covered by the above categories, including all tissues, paper towels, and napkins, carbon paper, and other non-recyclable papers.

PLASTICS

11. PET (#l) (Polyethylene Terephthalate) Narrow Neck Bottles: Rigid clear or colored cylindrical bottles or containers with or without base cups for holding carbonated soft drinks, cooking oil, mouthwash, liquor, juice, water, and other food ingredients, etc. The bottom of the bottle or container is coded "1" and usually has a small dot or nipple, not a seam.

12. #1 PET Thermoforms: Thermoforming plastics such as clamshell containers, blister packs, and plastic trays.

13. HDPE (#2) (High Density Polyethylene) Narrow Neck Bottles - Natural: Moderately flexible to stiff translucent cylindrical containers, commonly used for shampoos, detergents, motor oils, antifreeze, transmission fluids, windshield washer fluids, cleaning solutions and syrup, milk, juice or spring water products. The bottom of the container is coded "2" and usually has a seam.

14. HDPE (#2) (High Density Polyethylene) Narrow Neck Bottles - Colored: Same description as above and only bottles or containers are opaque.

15. #3-#7 Bottles: Rigid, narrow-necked bottles with code “3”, “4”, “5”, or “7” on the bottom.

16. Expanded Polystyrene (EPS): Polystyrene foam plastic materials, such as food and electronic packing as well as construction applications.

17. Rigid Polystyrene (RPS): Rigid plastics with code "6" on the bottom, such as polystyrene cups, CD cases, and food service containers (i.e., "clamshells").

18. Plastic Flower Pots: Any shape, size and color of flower or nursery pot including those marked #2 and #5. Excludes pots marked #6 (multi-packs).

19. Other Plastic Containers/Tubs: Any type of plastic container and tubs not covered by the above categories (i.e., yoghurt containers, margarine tubs, etc.).

20. Film Plastic-Shopping Bags: Translucent and opaque shopping bags.

21. Film Plastic-Others: Other translucent and opaque films/bags, such as trash and garbage bags, dry cleaning film.

22. Other Rigid Plastic: Rigid plastic items such as pens, toys.

ORGANICS

23. Food Waste: Putrescible organic materials which are the by-products of activities connected with the growing, preparation, cooking, processing, or consumption of food by human beings or domesticated animals.

24. Clothing/Linens/Textiles/Leather: Apparel and linens made from natural and synthetic fibers, such as clothing, blankets, sheets, towels, curtains, pillows, rags, shoes, belts, handbags, stuffed toys, upholstery, and other fabric products.

25. Carpets/Rugs/Carpet Padding: Self explanatory.

26. Rubber: Items made of natural or synthetic rubber, such as vehicle parts and bicycle tires, rubber bands, condoms, etc.

27. Automobile Tires: Self explanatory.

28. Diapers and Sanitary Products: Disposable diapers, tampons, and sanitary napkins.

29. Fines: Any materials left on the sorting table at the end of the sort that cannot be categorized and are less than 0.5 inches in diameter.

30. Miscellaneous Organics: All other organic materials not covered by the above categories, including feces and dead animals, and organic items too small to sort.

FERROUS

31. Ferrous/Bi-Metal Cans: Steel and bi-metal (steel and tin) food, beverage, and non-hazardous aerosol cans.

32. Other Ferrous: Ferrous scrap materials such as wire coat hangers, household appliances (white goods), nails and screws, auto parts, and other items adhering to a magnet.

NON- FERROUS

33. Aluminum Cans: Aluminum beverage containers.

34. Aluminum Pans/Foil: Aluminum food containers, foil wrap, and foil pans.

35. Other Aluminum: Other aluminum items such as siding, lawn chairs, window frames, rain gutters, etc.

36. Brass: Any alloy of copper and zinc such as door locks.

37. Copper: Materials such as pipes and wire.

38. Other Non-ferrous: Non-magnetizable, non-aluminum metals such as silver, lead, copper, brass, bronze, zinc, stainless steel.

GLASS

39. Clear Glass: Clear glass food and beverage containers, whole and broken.

40. Brown Glass: Brown glass food and beverage containers, whole and broken.

41. Green Glass: Green glass food and beverage containers, whole and broken.

42. Non-Container Glass: Mirrors, leaded crystal, eyeglasses, incandescent light bulbs, auto glass, windows, Pyrex cookware, pottery, drinking glasses.

WOOD

43. Lumber: Painted or unpainted finished (saw cut) lengths of wood from building structures, furniture or vehicles (e.g., cars, boats).

44. Pallets: Finished (saw cut) lumber (e.g., 2 x 4's) nailed or fastened together in a rectangular form to serve as a base for the bulk movement by forklift of containerized products. Includes composite wood such as particle board or plywood.

45. Other Wood: Miscellaneous wood products such as housewares (e.g., bowls, spoons), decorative objects, small furnishings (e.g., lamps, boxes), sawdust, or small animal bedding (e.g., cedar shavings), sawdust.

INORGANICS

46. Concrete/Brick/Rock: Concrete, brick, stones, cut stone, cement, rocks, and gravel.

47. Sheet Rock: Wallboard.

48. Latex Paint: Water-based paints.

49. Fluorescent Lamps: Lighting tubes and bulbs.

50. Electronics: e-waste contains any broken or unwanted electrical or electronic device, including but not limited to computers, cell phones, printers, routers, digital cameras, and TVs, etc.

51. Miscellaneous Inorganic: Other inorganic items not otherwise classified.

YARD WASTE

52. Grass: Clippings collected from lawns after mowing.

53. Leaves: Foliage, the leaves of growing plants and trees.

54. Brush/Pruning: Woody plant material derived from bush, hedge, and tree trimmings. Branches up to four inches in diameter are also included.

HOUSEHOLD HAZARDOUS WASTE SUBCATEGORIES

Note: The hazardous waste packed with Containers, the weights for both the hazardous waste and containers must be estimated and reported.

55. Lead Acid Batteries: Lead-acid batteries from automobiles, trucks, buses, boats, motorcycles, etc.

56. Other Rechargeable Batteries: All other rechargeable batteries, e.g., Ni-Cd, Ni-MH, Li-ion, etc.

57. Other Batteries: Disposable batteries, such as household dry-cell batteries from flashlights, transistor radios, hearing aids, calculators, and other products requiring small electric currents for their operation.

58. Paints/Thinners: Oil-based paint or thinners and any other flammable liquid including stains, furniture polish, wood preservatives, and rust proofing agents.

59. Poisons: Any toxic waste items thus marked such as pesticides and insecticides.

60. Corrosives/Solvents: Any toxic waste items thus marked including swimming pool chemicals, oven cleaner, drain cleaner, and photographic chemicals.

61. Medical: Any item contaminated with blood and other body fluid. Include syringes, needles, dressings, etc.

62. Fuel/Lubricants/Auto: Any waste item thus marked including motor oil, transmission fluid, brake fluid and antifreeze.

63. HW Containers: The empty containers for hazardous materials and chemicals.

64. Other Hazardous: Any other hazardous material not otherwise described.

Appendix C
Health and Safety Plan

Site-Specific Health and Safety Plan

Montgomery County Waste Characterization

Rev. 2 – October 1, 2012

REQUIRED APPROVAL			
SCS OSHC or designee:	John Tabella	Date:	10/3/12
SCS PM:	Josh DeGayner	Date:	10/3/12

Project No.:	02212006.02
Project Name:	Montgomery County Quarterly Waste Composition
Site Address:	16101 Frederick Road
Client Contact:	Raycharn Liou – (240)-777-6428

EMERGENCY TELEPHONE NUMBERS	
Fire:	911 or 240-683-6520 (non emergency)
Police:	911 or 301-279-8000 (non-emergency)
Hospital	301-548-5700 (Shady Grove Medical Center)
Ambulance:	911
WorkCare	1-800-455-6155
The directions and information on the nearest hospital are found on Page **3.**	

ACKNOWLEDGEMENT PAGE

"I have read the attached Health and Safety Plan for the Montgomery County Waste Composition dated 10/1/12. I have discussed any questions and/or concerns that I have regarding the contents of this document with the designated SCS project safety representative, and I understand its requirements. I understand that failure to comply with safety regulations, the Health and Safety Plan, the Recycling Center Health and Safety Plan, and failure to use safety equipment, or wandering outside of the area designated by DSWS Project Manager shall be grounds for immediate dismissal."

Name	Signature	Company	Date

Table of Contents

1 INTRODUCTION

At SCS, protection of human health and the environment is paramount. This Site-Specific Health and Safety Plan (SSHSP) provides information to identify hazards that may be present and/or introduced by project's activities onto SCS job sites, and details needed precautions that employees should follow to protect themselves. Tasks performed on site or during projects should be analyzed to determine if physical or chemical hazards requiring safeguards or additional Personal Protective Equipment (PPE) exist. This plan will be modified as necessary if any new hazards are identified during the project that require that additional safeguards be put in place. This plan is in the draft stage, approval will be gained from the SCS Office Safety and Health Coordinator prior to any field activities.

PROJECT ORGANIZATION

Project Manager:	Josh DeGayner	703-674-7653
Project Director:	Stacey Demers	703-471-6150
Client Representative:	Raycharn Liou	240-777-6428

SCOPE OF WORK – WASTE CHARACTERIZATION

Waste characterization involves collecting field samples and sorting the municipal solid waste into designated categories. The data that is generated from the field activities will be compiled and presented to the Montgomery County Division of Solid Waste Services (DSWS).

There have been no reported serious or fatal incidents attributed specifically to the performance of waste characterization studies. However, accidents may occur due to the potential hazards associated with the presence of heavy equipment at the site, the components of the waste itself (potentially sharp objects, broken glass), climatic conditions, and carelessness. At transfer stations, combustion of the waste materials on the tipping floor or in "Hot Loads" from refuse vehicles can present potential hazards.

The presence of heavy equipment in operation at the site (end loaders, graders, transfer station compactors, garbage trucks, etc.) presents potential hazards which can be avoided with the use of general common sense and staying visible. The equipment operators generally are involved in performing their tasks and may be unaware of the presence of other individuals within the immediate area. Personnel will be trained to be aware of the movement and location of equipment at all times. Also, highly visible clothing, including safety vests and hard hats, is required.

The components of municipal solid waste present potential physical hazards. These include, but are not limited to, cuts from broken glass and sharp metal objects; splinters from pieces of wood; punctures from nails and other sharp objects; and scrapes and abrasions from the general handling of the solid waste. There also exists the potential for exposure to household products, such as bleach, cleansers, and other toxic chemicals.

To alleviate the possibility of injury, caution should be employed at all times when physically handling the solid waste. Protective clothing, including gloves and safety glasses, should be worn at all times. If there is any question about the handling of a component of solid waste, the Crew Chief should be notified.

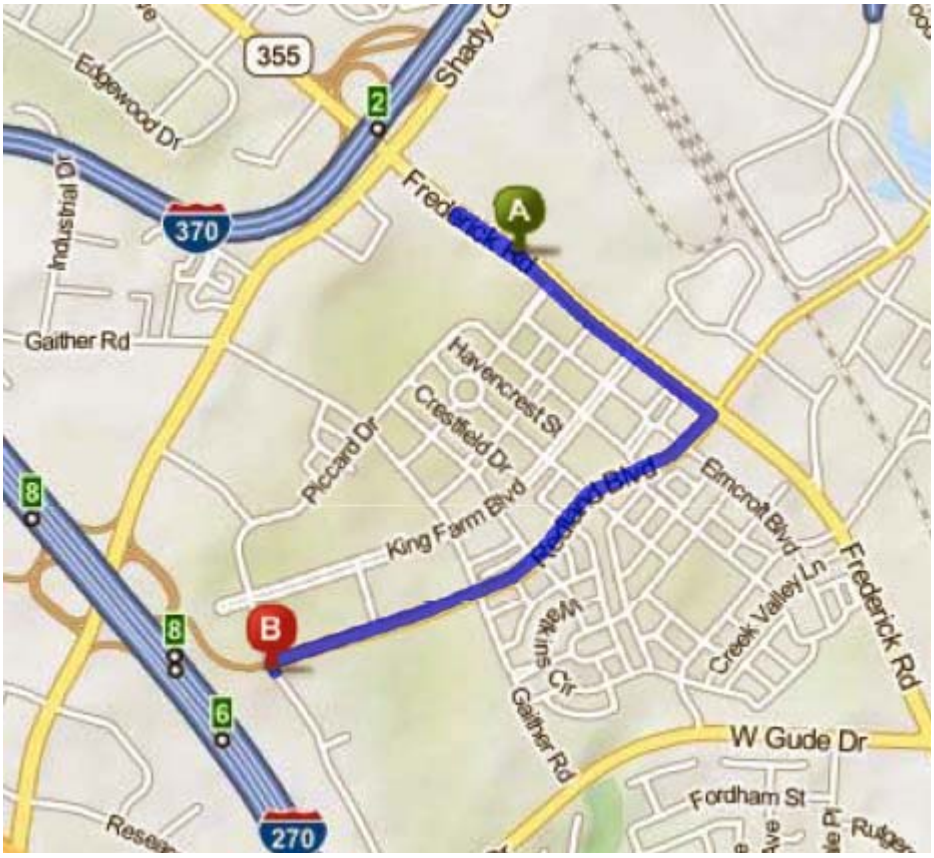
The waste characterization will be performed indoors, but not in a climate controlled area. Caution should be taken to avoid the possibility of heat stress due to protective clothing or weather, or frostbite in areas of extreme cold. Depending on temperature, portable heaters may be used to warm sorting personnel.

Landfill gas (LFG) is produced by the anaerobic decomposition of organic waste materials placed in a landfill. LFG is typically composed of 50 to 60 percent methane, 40 to 50 percent carbon dioxide, and trace amounts of various other gases, including odorous and possible toxic compounds. At the Montgomery County Solid Waste Transfer Station, the generation of LFG is not expected to be a concern.

Refuse deposited at the Transfer Station can pose a potential fire hazard. Fires can be started through carelessness, sparks, or from "Hot Loads" handled at the refuse facilities. If fire or smoke is observed, DSWS personnel should be notified immediately, all SCS personnel and subcontractors should leave the immediate area at once, and the local emergency fire department should be notified.

2 EMERGENCY RESPONSE AND MEDICAL TREATMENT PROCEDURES

EMERGENCY CONTACT AND NOTIFICATION INFORMATION



1. Head **northwest** from the Transfer Station (**A**) on Frederick Rd/MD-355
2. Make a **U-turn** onto Frederick Rd, heading **southeast.**
3. Turn **Right** onto **Redland Blvd.**
4. Turn **Left** onto **Piccard Dr**.
5. Arrive at **Shady Grove Medical Center** (**B**) on the **Right**.

Figure 1. Map to the Hospital and Directions

Nearest Hospital Address:

Shady Grove Medical Center
1396 Piccard Drive
Rockville, MD 20850
301-548-5700

ACCIDENT OR INCIDENT REPORTING SYSTEM

In the event of an emergency at the site, project personnel should call 911 for emergency assistance. After the immediate emergency situation has been addressed by emergency personnel, SCS project personnel should call the SCS Project Manager and the Client Representative and inform them of the situation. The Project Manager should evaluate the nature of the emergency and direct project personnel actions from that point.

NOTIFICATION PROCEDURES FOR INCIDENTS (CLIENT, LOCAL, STATE, OR FEDERAL)

Site personnel should contact their supervisor immediately when an accident or injury occurs, and provide any needed information so that additional notifications can be determined and completed as needed.

METHODS TO SUMMON EMERGENCY RESPONSE TEAM

Emergency services can be summoned through 911, as this service is active in the area.

RESCUE AND MEDICAL TREATMENT REQUIREMENTS

Stop work authority should be exercised when an injury or accident occurs. The appropriate emergency agency should be contacted and first aid administered, if possible. If the injury is not life-threatening and does not require emergency response, contact WorkCare at (800) 455-6155. First aid kits and fire extinguishers are available in each SCS work truck. Additional first aid or medical support is available at the site near the PPE storage area at the rear of the building.

3 SITE DESCRIPTION

LOCATION DESCRIPTION

The facility is located at 16101 Frederick Road (Route 355), Derwood, Maryland. The site is generally used as a transfer station and materials recovery facility. SCS will be conducting field work on the transfer station floor (sample collection) and in the recycling center (sample sorting).

4 GENERAL FIELD SAFETY PROCEDURES

General Standard Operating Procedures (SOPs) and additional SCS Health and Safety procedures and requirements are included in the current SCS Injury Illness Protection Program (IIPP) and on the SCS intranet. These documents are considered a part of this plan.

SCS team members will conduct themselves in a professional manner at all times. The following restrictions will also be observed by all SCS personnel and subcontractors to SCS .

- Working while under the influence of intoxicants, narcotics, or controlled substances is

prohibited.

- Smoking anywhere on site is prohibited.
- Loose clothing will not be worn on-site. Long hair will be worn up inside hard hat.
- Eating, drinking, chewing gum, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited on-site, unless in designated break areas.
- No personnel will be admitted to the site without the proper safety equipment, clearance or other approval.
- All personnel must comply with established safety procedures. Any staff member who does not comply with safety policy, as established by the Site Manager, will be immediately dismissed from the site.
- No unapproved work clothes or equipment will be allowed on-site.
- Prescription drugs should not be taken by personnel where the potential for contact with toxic substances exist. Use must be specifically approved by a qualified physician.
- Work areas for various operational activities will be established.
- Work areas will be established based on prevailing site conditions and are subject to change. Personnel should check with the Site Manager for current and appropriate procedures regularly.
- Contact with contaminated or potentially contaminated material should be avoided. Whenever possible, do not walk through puddles, mud, or any discolored ground surface. Do not kneel on the ground. Do not lean, sit or place equipment on drums, containers, or vehicles.
- Due caution will be observed when proceeding on foot through open areas. Personnel will not cross the line of cones that will separate the sorting area from the area where heavy equipment will be operating.
- Any medical emergency supersedes routine safety requirements.

APPLICABLE STANDARD OPERATING PROCEDURES (SOPS) AND PROGRAMS

The following SOPs are incorporated by reference and available on the SCS intranet.

	SOP Number and Name		SOP Number and Name
X	01 - General Code of Safe Work Practices		22 - Safe Procedures for Working with Sites That Contain Hydrogen Sulfide
X	04 - JTSA and PPE Assessment Procedures	X	24 - Avoidance of Slips, Trips, and Falls
	05 - Work Permits	X	25 - Avoidance and Prevention of Heat and Cold Stress, and Other Weather-Related Hazards
X	06 - Forklift and Heavy Machinery Operations		26 - All-Terrain Vehicles and Watercraft
	07 - Compressed Air and Compressed Gas Cylinders		27 - OSHA and Other Regulatory Inspections
	08 - Drilling and Well Installation Procedures		
	09 - Electrical Safety		**Appendix Letter and Program Name**
	10 - Fall Protection	X	B - Hazard Communication
X	11 - Fire Extinguishers		C - HAZWOPER
	12 - Hand and Power Tools		D - Exposure Assessment
	13 - Working Safely with Ladders	X	E - PPE Other Than Respiratory Protection
	14 - Landfill Leachate and Condensate Safe Procedures	X	F - Respiratory Protection
	15 - Lockout and Tagout	X	G - Motor Vehicle and Fleet Safety
	17 - Materials Use and Handling		H - Hearing Conservation
	18 - Polyethylene (PE) Pipe Work Safe Procedures	X	I - Bloodborne Pathogens
X	19 - Site Sanitation Procedures		J - Excavation and Construction Earthwork Program
	20 - Safe Work Practices for Scaffolds		K - Confined Space Entry
X	21 - Safe Procedures for Biological Hazards (Snakes, Insects, Vegetation, Bacteria)		L - Ergonomics Program

JOB TASK SAFETY ANALYSIS (JTSA) AND PPE ASSESSMENT

JTSAs for activities performed at this site have been completed as indicated below and are included as **Attachment 1**. A completed JTSA is required for all work tasks performed at the site. **JTSAs are designed to identify steps which involve potential hazards to employees and should be reviewed and understood (and signed providing evidence of understanding) before performing any task at the site. If additional steps or hazards are present, the JTSA should be revised (and the revision signed by all affected staff) to indicate that all items have been appropriately addressed and are understood before proceeding with the task.**

Unless identified in an attached Job Task Safety Analysis (JTSA) form, all project tasks are anticipated to only require **Level D** PPE, as defined by the Occupational Safety and Health Administration (OSHA). For employees on the transfer station tipping floor, Level D has been modified to include disposable dust masks and hearing protection, per the County's request.

SCS field personnel (including subcontractors) will be informed in the use of safety equipment and will be required to wear protective clothing appropriate for the tasks in which they will be involved.

Extra equipment will be located on-site. This equipment will include the following items:

- Dust Masks
- Tyvek Coverall Suits
- Gloves (nitrile and HexArmor: SharpsMaster II)
- High Visibility Safety Vests
- Eye Protection
- Ear Protection
- Hard Hats
- First Aid Kit

Sufficient water for personal use will be brought on-site daily.

SAFE OBSERVATIONS

The SCS SAFE Observation Checklist will be used by field and project personnel. The goal is for SCS staff to make at least one (1) documented observation per quarter during site activities.

OTHER INSPECTION PROCEDURES

Periodic site inspections may be made by the Project Supervisor, Project Manager, and Regional Compliance Auditor or Safety Specialist. There is also the potential for the client or regulatory agencies to visit and inspect the site. SCS personnel are to perform tasks in compliance with all contractual, regulatory, and company requirements at all times.

SITE CONTROL

SCS and its subcontractors will be restricted in site usage to the Recycling Station and Transfer Station areas. A pickup truck will be used to transfer waste samples from the Transfer Station to the Recycling Facility, where sorting will occur. **Under no circumstances will SCS employees or subcontractors enter other buildings and areas of the Solid Waste Transfer Station Facility.**

Our clients are responsible for providing SCS employees with safe site access, which includes sites that are free of threats from transients or other aggressive people or animals. If an SCS employee encounters an aggressive person or animal, they should withdraw from the site and contact the Site Representative and their SCS supervisor. The Site Owner is responsible for removing the threats, and SCS employees should not take any affirmative action of their own.

DECONTAMINATION PROCEDURES

The risks of illness due to ingestion of diseased or decomposing materials from the work site are significant. To minimize these risks, all personnel should remove and store the outer layer of their protective clothing (i.e., coveralls, gloves, hard hat, etc.) on-site. Hands, face, and nails should be thoroughly washed, or scrubbed, with soap and water prior to engaging in any activity likely to transmit materials encountered on-site into the mouth. If waste materials come in contact with the skin, that crew member will be temporarily excused to thoroughly wash the affected area with soap and water. A hand washing station will be rented by SCS.

HANDLING OF HAZARDOUS WASTE MATERIALS

Hazardous materials will be avoided during sample selection. If hazardous materials are encountered during the waste sorting activities, they will be segregated from the normal waste and recycling streams and put in separate containers. The contents of these containers will be reported to Montgomery County DSWS, and disposed of by County Personnel.

Caution will be taken when handling mercury-containing wastes such as fluorescent light bulbs. Care will be taken to not break the glass bulb, and to avoid samples with excess amounts of fluorescent light bulbs. Gloves and Tyvek suits will provide skin protection from mercury compounds.

Extreme care will be taken when handling and disposing of hazardous materials. If subcontractors encounter any material that may be considered hazardous, they will be instructed to report it to the Site Manager immediately.

HOUSEKEEPING REQUIREMENTS

A portable toilet and hand-washing station will be staged near the sorting area. Hand sanitizer and soap will be made available to assist with decontamination. The designated break area will be located to the rear of the Recycling Facility on the grass lawn area.

5 SITE HAZARDS

Chemical and Physical Agent Hazards

The following chemical and physical hazards should be considered before performing any task or work at the site. The analysis will depend on a thorough understanding of the site's physical characteristics and the task(s) being performed.

Toxic Compounds: Non-Methane Organic Compounds (NMOCs), as well as inorganic toxic contaminants such as mercury, and sometimes even radioactive contaminants such as tritium, may be present on a site. NMOCs include such toxic compounds as benzene, toluene, chloroform, vinyl chloride, carbon tetrachloride, and trichloroethane, which, although commonly less than 1 percent by weight, are hazardous. These potential hazards should be evaluated on a case-by-case basis. Additional precautions will be established as needed.

Poisons: Pesticides, cleaners, or other toxic materials of various types may be present in the waste stream. Avoid contact with these items. Pay close attention to where you walk and what you touch such that materials do not accidentally come into contact with skin, eyes, mouth, or clothing. Immediately remove any contaminated clothing, and wash with soapy water any skin that becomes contaminated. Avoid contact at all times.

Flammables: Fuel such as gasoline and diesel may be present in the waste stream. Additionally, paint thinners or other flammable materials may be present in the waste. The primary risk associated with these materials is fire. Keep all ignition sources away from flammable materials. Do not smoke, unless in designated areas. Pay close attention to where you walk and what you touch such that materials do not accidentally come into contact with skin, eyes, mouth, or clothing. Immediately remove any contaminated clothing, and wash with soapy water any skin that becomes contaminated. Avoid contact at all times.

Oxidizers: Fertilizers, pool chemicals, chlorine, or other oxidizers may be present in the waste stream. These materials may be in use at water treatment plants or in the waste at the site. The primary risk from oxidizers is an increased fire potential. Keep fire and fuel or oil away from oxidizers. Do not smoke, unless in designated areas. Pay close attention to where you walk and what you touch such that materials do not accidentally come into contact with skin, eyes, mouth, or clothing. Immediately remove any contaminated clothing, and wash with soapy water any skin that becomes contaminated. Avoid contact at all times.

Corrosives: Acidic and caustic materials may be present in the waste stream. These materials may be in use at water treatment plants or in the waste at the site. The primary risk from corrosives is damage to the skin or eyes. Pay close attention to where you walk and what you touch such that materials do not accidentally come into contact with skin, eyes, mouth, or clothing. Immediately remove any contaminated clothing, and wash with soapy water any skin that becomes contaminated. Avoid contact at all times.

Physical Hazards

The following physical hazards should be considered before performing any task or work at the landfill. Depending on the task(s) being performed, any or all of these hazards may be present.

Heavy Equipment: Compactors, bull dozers, loaders, track hoes, forklifts and large trucks, and other vehicles are present at the Transfer Station. Loud noise and limited visibility can increase the threat of being run over or crushed by these vehicles. Wear high-visibility vests (recommend Class III) and coordinate with vehicle operators when working in the vicinity of these pieces of equipment. Heavy equipment hazards are especially present at or near the tipping floor. When working in this area, equipment operators must be notified. The use of a second person (as a spotter) should be done when working in this area

Heat-Related Injuries: Elevated body temperatures can cause serious injury or death. Working outdoors or in the sun increases the chance of heat-related injuries. This hazard is especially critical when PPE (such as coveralls or rain gear) is worn, since heat from the body becomes trapped inside clothing. Personnel should drink plenty of liquids and take breaks as needed. The following describes the various effects of heat-related injuries.

Heat Disorders and Health Effects:

- **Heat Stroke:** This disorder occurs when the body's system of temperature regulation (e.g., sweating and evaporation) fails and body temperature rises to critical levels. The condition is caused by a combination of highly variable factors, and its occurrence is difficult to predict. Heat stroke is a serious hazard, however. Primary signs and symptoms are confusion, irrational behavior, loss of consciousness, convulsions, a lack of sweating (usually), hot, dry skin, and an abnormally high body temperature. If a worker shows signs of possible heat stroke, call 911 to obtain **immediate** medical assistance. The worker should be placed in a shady area, and his or her outer clothing should be removed. The worker's skin should also be wetted and air movement around the body increased to improve evaporative cooling until professional methods of cooling are initiated and the seriousness of the condition can be assessed. Fluids should be replaced as soon as possible--by mouth only if the worker is conscious. The medical outcome of an episode of heat stroke depends on the victim's physical fitness and the timing and effectiveness of first aid treatment. Regardless of the worker's protests, **no** employee suspected of being ill from heat stroke should be sent home or left unattended unless a physician has specifically approved such an order.

- **Heat Exhaustion:** The signs and symptoms of heat exhaustion include clammy skin, headache, nausea, vertigo, weakness, thirst, and giddiness. Fortunately, heat exhaustion responds readily to prompt treatment. This condition, however, should not be dismissed lightly, for several reasons. One is that fainting associated with heat exhaustion can be dangerous because the victim may be operating machinery or controlling an operation that should not be left unattended. The victim could also be injured when he or she faints. While the signs and symptoms associated with heat exhaustion are similar to those of heat stroke, the notable difference (with heat

exhaustion) is clammy skin. Workers suffering from heat exhaustion should be removed from hot environments and given fluid replacement, by mouth only if the workers are conscious. They should also be encouraged to get adequate rest.

- **Heat Rashes:** The most common problem occurring in hot work environments is heat rash. Prickly heat is manifested as red papules and usually appears in areas where the clothing is restrictive. As sweating increases, the papules give rise to a prickling sensation. Prickly heat occurs in skin that is persistently wetted by unevaporated sweat, and papules may become infected if they are not treated. In most cases, heat rash will disappear when the affected individual returns to a cool environment.

- **Heat Fatigue:** One factor that predisposes individuals to heat fatigue is the lack of acclimatization. Use of a program of acclimatization and training for work in hot environments are advisable. The signs and symptoms of heat fatigue include impaired performance of skilled sensorimotor, high-concentration, or high-vigilance activities. The sole treatment available for heat fatigue is to remove heat stress and increase fluid replacement before a more serious heat-related condition develops.

Cold-Related Injuries: In winter weather conditions, there is a potential for injury from cold, including dehydration, frostbite, heavy shivering, excessive fatigue, drowsiness, irritability, and euphoria. If workers show these symptoms, work should cease and affected personnel rest in heated buildings or vehicles.

Biological Hazards

Rodents, poisonous insects, snakes, other animals and/or plants are a natural part of any ecosystem. They are sometimes difficult to eliminate or avoid on some sites because of the location. Employees should be aware of the potential for encountering these types of animals and plants. Where possible, nesting places should be removed or access to them should be limited. If several infestations occur, remedies should be discussed with a supervisor and the client (see **SCS IIPP, SOP-21**, for precautions and treatment for biological hazards). The following could be encountered in performance of the operation, maintenance, and monitoring functions of a project:

Hantavirus: Infection typically occurs by the inhalation of tiny airborne droplets of fresh or dried rodent excretions. Transmission to humans may also occur through direct contact with rodents or rodent-contaminated materials, and ingestion of contaminated food or water is also a possible route of transmission. Sweeping or "shaking out" rodent-contaminated materials should be avoided unless performed using respiratory protection. The early symptoms of hantavirus disease are flu-like (fever, chills, muscle aches). For a very short period of time, the infected person starts to feel better. Then, within 1 to 2 days, he or she may develop shortness of breath. The disease gets worse quickly and leads to respiratory failure, a condition known as Hantavirus Pulmonary Syndrome (HPS). About half of all HPS patients experience these symptoms, which usually occur 1 to 5 weeks from contracting the illness.

Snakes: Timber rattlesnakes and copperheads are poisonous snakes that are known to inhabit Maryland. Not all rattlesnakes give audible warning before they strike. Extra caution should be

taken if tools or other materials are dropped in highly vegetated areas, around rocks, into stockpiles of pipe or other objects, or when walking through highly vegetated areas where visibility (of the ground) is limited. The most active times for rattlesnakes are morning, late afternoon, and early evening; however, encounters could happen at any time of the day. Walking loudly, shuffling feet, or making noise while working is recommended.

Bloodborn Pathogens: Human blood can contain harmful viruses such as the Human Immunodeficiency Virus (HIV) and Hepatitis B Virus (HBV). Contact with affected blood, as well as materials contaminated by this blood, can result in transmitting viruses and the life-threatening conditions they cause.

SCS has adopted a Bloodborne Pathogen Exposure Control Plan to protect employees who may come into contact with blood, or materials contaminated with blood, during the performance of tasks. Although the program is intended to comply with OSHA's Bloodborne Pathogens Standard, 29 CFR 1910.1030, the primary purpose for adopting the plan is to help employees avoid bloodborne pathogens at work.

When an employee is involved in an exposure incident, it must be reported in accordance with the Health and Safety Injury and Illness Prevention Plan. All employees involved in an exposure incident will be offered post-exposure evaluation and follow-up, in accordance with the OSHA standard. Follow-up will include:

- Documentation of the route of exposure and the circumstances related to the incident.
- If possible, identification of the source individual and, if possible, the status of the source individual. The blood of the source individual will be tested (after consent is obtained) for HIV/HBV infectivity.
- Results of testing of the source individual will be made available to the exposed employee, along with applicable laws and regulations concerning disclosure of the identity and infectivity of the source individual.
- The employee will be offered the option of having blood collected for testing of that employee's HIV/HBV serological status. The blood sample will be preserved for at least 90 days to allow the employee to decide if the blood should be tested for HIV serological status. However, if the employee decides, prior to that time, that testing will be conducted, the appropriate action can be taken and the blood sample discarded.
- The employee will be offered post-exposure counseling in accordance with current recommendations of the U.S. Public Health Service.
- The employee will be given appropriate counseling concerning precautions to take during the period after the exposure incident. The employee will also be given information regarding potential illnesses and procedures for reporting related symptoms to appropriate personnel.

6 ADDITIONAL REQUIREMENTS

All SCS Employees and their subcontractors will adhere to Montgomery County's Recycling Center Health and Safety Plan.

At the client's request, SCS employees working on the transfer station floor to collect samples will wear a disposable nuisance dust mask and hearing protection. The nuisance dust masks are for comfort use and only for nuisance dusts at the jobsite. These masks do not provide respiratory protection such as provided by a NIOSH approved respirator.

Attachment 1 – Job Task Safety Analysis and PPE Assessment Form

JOB TASK SAFETY ANALYSIS AND PPE ASSESSMENT FORM-
JTSA-ES- 16- WASTE SORT

Job Task Safety Analysis Form-01				
Task Type (Check all that Apply)	Solid Waste	**Task Description (include an estimate of task duration in hrs/day)** Four - Eight Day seasonal waste sorts, approximately 8 hours per day.		**Location or Project:** Montgomery County Maryland Waste Characterization **Date Revised: 8/30/12** **Project #/Revision #: 02212006.02**
Analysis Team Member	**Position Title**		**Reviewed by**	**Position Title**
Josh DeGayner	Staff Professional		John Tabella	OHSC
Brent Dielman	Project Professional			
Zeb Graham	Foreman			
Special Training Required		Bloodborne pathogens training		
Applicable SAFE Checklist(s): Specify type and category number		Environmental Services/Solid Waste Checklist		

This form is the certification that the hazard assessment has been performed for the workplace as required by 29 CFR 1910.132.

Job Task Step	Potential Environmental and Personnel Hazards[1]	Critical Actions	PPE Required
1. Drive to site, set up sorting table and containers.	Heavy lifting Slips/trips/falls Vehicle traffic	• Check in w/facility • Ensure work area is secured/isolated • Use buddy system • Employ safe lifting behaviors • Stretch/warm-up	Head: Hardhat Body: Safety vest, Tyvek Foot: Steel--toe ANSI boots Hand: Nitrile + Leather outer glove Respiratory: None Hearing: None Eye/Face: Safety glasses
2. Collect solid waste samples from the tipping floor area	Heavy lifting Vehicle/HE traffic Slips/trips/falls Medical/bio waste Sharps Chemical exposures	• Use buddy system • Stay visible • Use safe lifting • Set up away from traffic • Avoid Heavy EQ traffic	Head: Hardhat Body: Safety vest, Tyvek Foot: Steel--toe ANSI boots Hand: Nitrile + Puncture Resistant Gloves Respiratory: Dust mask Hearing: Earplugs Eye/Face: Safety glasses
3. Hand-sort solid waste materials on the sorting table. (At the Recycling Center)	Heavy lifting Vehicle/HE traffic Slips/trips/falls Medical/bio waste Sharps Chemical exposures Stress/hygiene concerns	• Use buddy system • Stay visible • Use safe lifting • Set up away from traffic • Brush trash (vs digging) • Wash hands freq. • Stay hydrated • Shift breaks	Head: Hardhat Body: Safety vest, Tyvek Foot: Steel--toe ANSI boots Hand: Nitrile + Puncture Resistant Gloves Respiratory: Dust mask (optional) Hearing: Earplugs (optional) Eye/Face: Safety glasses

Job Task Step	Potential Environmental and Personnel Hazards[1]	Critical Actions	PPE Required
4. Cleanup and Decontaminate	Heavy lifting Slips/trips/falls Vehicle traffic	• Ensure work area is secured/isolated • Use buddy system • Employ safe lifting behaviors • Stretch/warm-up • Decontaminate PPE	Head: Hardhat Body: Safety vest, Tyvek Foot: Steel--toe ANSI boots Hand: Nitrile + Leather outer glove Respiratory: Dust mask (optional) Hearing: None Eye/Face: Safety glasses
5. Demob	Vehicle/HE traffic	• Check out w/facility	Head: None Body: High Visibility Vest Foot: Steel--toe ANSI boots Hand: None Respiratory: None Hearing: None Eye/Face: None
End of JTSA Form			