New York City MSW Composting Report

Appendix A
Waste Characterization for Composting Pilot Study

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Staten Island Botanical Garden

Waste Characterization for Composting Pilot Study

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Report

Section 1
Introduction

As part of a pilot study of municipal solid waste composting, the New York City Department of Sanitation (NYCDOS) sent approximately 300 tons of residential refuse to a composting facility operated by Bedminster Bioconversion, Inc. in Marlboro, Massachusetts. The Staten Island Botanical Garden, Inc. retained Camp Dresser & McKee Inc. (CDM) to characterize the residential refuse sent to the Marlboro facility. NYCDOS collected the waste in its Staten Island District 2 on Saturday, February 24, 2001, and Monday through Thursday, February 26 through March 1, 2001. A total of 37 truckloads of residential refuse from preselected collection routes were sent to Marlboro. Prior to being shipped to Marlboro, each truckload was dumped on a paved area at the leaf composting facility at the Fresh Kills landfill on Staten Island. CDM performed the characterization work at the leaf composting facility at Fresh Kills from Monday, February 26 through Friday, March 2.

Assisted by a front-end loader and operator from Organic Recycling, Inc. and temporary workers supplied by Labor Ready, Inc., CDM collected a total of 70 samples from the 37 truckloads of waste and sorted them into 13 primary categories and 14 secondary categories. The material in each category was weighed and the resulting data analyzed to estimate the composition of the waste and the statistical reliability of the results. The average weight of the 70 samples was 313 pounds and the total quantity of waste sorted was 11 tons.

Section 2 of this report describes the procedures used in characterizing the residential refuse. Section 3 presents the results.

Section 2
Study Procedures

This section describes selection of collection trucks for sampling, sampling procedures, and sorting and weighing procedures. In addition, this section provides definitions of the waste categories used in the study.

2.1 Selection of Collection Trucks to Include in the Study

The New York City Department of Sanitation (DOS) selected Staten Island District 2 (SI2) as the source of the residential refuse to be included in the composting pilot study. DOS selected SI2 because it is adjacent to the waste transfer point at the Fresh Kills landfill and because it had the same residential recycling rate in 2000 as New York City as a whole, 23.4 percent. SI2 has four largely separate collection areas called sections, designated 21, 22, 23 and 24.

DOS informed CDM that collection trucks from Staten Island District 2 (SI2) would be sent to the Marlboro, Massachusetts composting facility as follows:

- 8 trucks collecting on Saturday, February 24 (to be sent to Marlboro on Monday)
- 7 trucks collecting on Monday, February 26 (to be sent to Marlboro on Tuesday)
- 7 trucks collecting on Tuesday, February 27 (to be sent to Marlboro on Wednesday)
- 7 trucks collecting on Wednesday, February 28 (to be sent to Marlboro on Thursday)
- 8 trucks collecting on Thursday, March 1 (to be sent to Marlboro on Friday)

Thus, a total of 37 trucks would be sent to the Marlboro composting facility during the 5 days of the portion of the pilot study devoted to residential waste. CDM allocated these 37 trucks among the four sections of SI2 as shown in Table 2-1. Based on the relative quantities of residential waste generated in the four sections during 2000, the target number of trucks from each section was as follows:

- 10 trucks from Section 21
- 9 trucks from Section 22
- 8 trucks from Section 23
- 10 trucks from Section 24

DOS provided detailed descriptions of 105 collection routes used in SI2 during a week at the time of year when the study occurred. CDM determined that among these 105

routes were 61 distinct routes (see Table A-1 in Appendix A). A route was classified as distinct if more than half of the lines in its description did not appear in the description of any other route.

CDM allocated the 37 trucks among the 61 distinct collection routes so as to include the right number of trucks from each section and the right number of routes for each day of the study. None of the 61 distinct collection routes had more than one truck included in the study. (See Table A-1 in Appendix A.)

For each census block group in SI2, CDM collected data on population, level of education, median household income, and per-capita income. Eight block groups were identified that had significantly higher or lower income and/or educational level than the others. CDM made adjustments in the list of 37 selected collection routes to avoid over- or underrepresentation of these eight block groups.

The final list of collection routes selected for inclusion in the study is shown in Table 2-2.

Table 2-2 also includes two alternate collection routes for each of the 5 days of the study. The alternate routes were selected using the same basic procedure used to select the preferred routes. A degree of overlap in the alternate routes proved to be unavoidable, however, and the first alternate for Thursday is almost the same route as the second alternate for Monday.

CDM collected and sorted 70 samples from the 37 trucks directed to the transfer point. Therefore, two samples were collected from all but four of the 37 trucks. Little could have been gained from further analysis aimed at identifying which four routes should be sampled only once. Within the limits of the target number of samples from each section shown in Table 2-1, therefore, the four truckloads to be sampled only once were chosen at random. The number of samples collected from each of the 37 truckloads is shown in Table 2-2.

In addition to showing the target number of samples from each section of SI2, Table 2-1 shows the actual number of samples from each section. DOS sent all of the primary targeted truckloads of waste to the transfer point except one. On Friday of the week of field work, DOS substituted a designated alternate collection route in Section 21 for the target route in Section 22. As a result, the total number of samples from Section 21 was approximately 1.5 more than its theoretical share and the total number of samples from Section 22 was approximately 1.5 less than its theoretical share.

2.2 Sampling Procedures

The selected truckloads of residential waste were dumped on a paved area at the leaf composting facility during the night prior to each day of field work. The truckloads were kept separate from each other. Each morning of the 5 days of field work, the CDM sampling coordinator was given a diagram indicating the section of SI2 and the

Table 2-1
Distribution of Truckloads and Samples
Among the Sections of Staten Island District 2

Section	Annual tonnage in 2000	Percentage of total tonnage in 2000	Theoretical share of 37 truckloads	Target number of truckloads	Actual number of truckloads	Theoretical share of 70 samples	Target number of samples	Actual number of samples
21	13,968	26.4%	9.78	10	11	18.49	18	20
22	12,467	23.6%	8.72	9	8	16.51	17	15
23	12,113	22.9%	8.48	8	8	16.04	16	16
24	14,322	27.1%	10.02	10	10	18.96	19	19
Total	52,869	100.0%	37.0	37	37	70.0	70	70

Table 2-2
Collection Routes Selected for Inclusion in Study

CDM route designation	Section in which route begins	Day of week	Date	NYCDOS route designation			Actually included in study?	Number of samples collected
				Days of week	Number of trucks	Route number		
Selected Routes for Saturday								
26	21	Sat	2/24/01	Wed/Sat	4	2	Yes	2
28	21	Sat	2/24/01	Wed/Sat	4	4	Yes	1
50	22	Sat	2/24/01	Wed/Sat	4.5	1	Yes	1
53	22	Sat	2/24/01	Wed/Sat	4.5	4	Yes	2
75	23	Sat	2/24/01	Wed/Sat	3	1	Yes	2
77	23	Sat	2/24/01	Wed/Sat	3	3	Yes	2
102	24	Sat	2/24/01	Wed/Sat	3.5	1	Yes	2
104	24	Sat	2/24/01	Wed/Sat	3.5	3	Yes	2
Alternate Routes for Saturday (in this order)								
52	22	Sat	2/24/01	Wed/Sat	4.5	3	No	0
105	22	Sat	2/24/01	Wed/Sat	4.5	4.5	No	0
Selected Routes for Monday								
3	21	Mon	2/26/01	Mon/Thu	5.5	3	Yes	2
5	21	Mon	2/26/01	Mon/Thu	5.5	5	Yes	2
31	22	Mon	2/26/01	Mon/Thu	4.5	3	Yes	2
55	23	Mon	2/26/01	Mon/Thu	5	2	Yes	2
79	24	Mon	2/26/01	Mon/Thu	7	2	Yes	2
81	24	Mon	2/26/01	Mon/Thu	7	4	Yes	2
83	24	Mon	2/26/01	Mon/Thu	7	6	Yes	2
Alternate Routes for Monday (in this order)								
56	23	Mon	2/26/01	Mon/Thu	5	3	No	0
2	21	Mon	2/26/01	Mon/Thu	5.5	2	No	0
Selected Routes for Tuesday								
8	21	Tue	2/27/01	Tue/Fri	4.5	2	Yes	2
10	21	Tue	2/27/01	Tue/Fri	4.5	4	Yes	2
34	22	Tue	2/27/01	Tue/Fri	5	2	Yes	2
37	22	Tue	2/27/01	Tue/Fri	5	5	Yes	2
59	23	Tue	2/27/01	Tue/Fri	4	1	Yes	2
62	23	Tue	2/27/01	Tue/Fri	4	4	Yes	2
87	24	Tue	2/27/01	Tue/Fri	3.5	3	Yes	2
Alternate Routes for Tuesday (in this order)								
7	21	Tue	2/27/01	Tue/Fri	4.5	1	No	0
86	24	Tue	2/27/01	Tue/Fri	3.5	2	No	0
Selected Routes for Wednesday								
12	21	Wed	2/28/01	Wed/Sat	5	1	Yes	2
15	21	Wed	2/28/01	Wed/Sat	5	4	Yes	2
38	22	Wed	2/28/01	Wed/Sat	6	1	Yes	2
40	22	Wed	2/28/01	Wed/Sat	6	3	Yes	2
43	22	Wed	2/28/01	Wed/Sat	6	6	Yes	2
65	23	Wed	2/28/01	Wed/Sat	4	3	Yes	2
89	24	Wed	2/28/01	Wed/Sat	4	2	Yes	2
Alternate Routes for Wednesday (in this order)								
91	24	Wed	2/28/01	Wed/Sat	4	4	No	0
64	23	Wed	2/28/01	Wed/Sat	4	2	No	0
Selected Routes for Thursday								
17	21	Thu	3/1/01	Mon/Thu	4	1	Yes	2
20	21	Thu	3/1/01	Mon/Thu	4	4	Yes	2
45	22	Thu	3/1/01	Mon/Thu	3	2	No	0
67	23	Thu	3/1/01	Mon/Thu	4	1	Yes	2
69	23	Thu	3/1/01	Mon/Thu	4	3	Yes	2
92	24	Thu	3/1/01	Mon/Thu	6	1	Yes	2
94	24	Thu	3/1/01	Mon/Thu	6	3	Yes	1
96	24	Thu	3/1/01	Mon/Thu	6	5	Yes	2
Alternate Routes for Thursday (in this order)								
18	21	Thu	3/1/01	Mon/Thu	4	2	Yes	1
44	22	Thu	3/1/01	Mon/Thu	3	1	No	0

collection route from which each truckload had come. The diagram was in the form of a table with a column for each row of loads on the pavement.

Under the direct supervision of the sampling coordinator, an employee of Organic Recycling, Inc. collected the samples using a front-end loader. The bucket of the front-end loader was large enough to hold large items of waste such as mattresses and sofas.

As indicated above, two samples were collected from 33 of the 37 truckloads of waste (a total of 66 samples) and one sample was collected from each of the remaining four truckloads. When two samples were collected, they were collected from different places in the load. The target sample size was 250-to-300 pounds.

For each sample, the sampling coordinator recorded the following at the top of a data form like that shown in Figure 2-1:

- The sample number (1 for the first sample collected on Monday through 70 for the last sample collected on Friday)
- The date the sample was collected from the load of waste
- The number of the section of SI2 in which the load of waste was collected
- The number of the collection route

The date the load of waste was collected and the DOS truck identification number for each sampled load were added to the data forms later.

The front-end loader deposited each sample on a 9-by-12-foot tarp outside the maintenance building at the leaf composting facility. The sampling coordinator maintained a diagram of the sample storage area indicating the number and location of each sample. When sampling was complete, netting was placed over the samples to minimize the amount of waste removed by wind and seagulls.

2.3 Sorting Procedures

Sorting proceeded as follows for each sample:

- The sampling coordinator gave the CDM sorting supervisor a data form with information identifying the sample filled in at the top (see Section 2.2 and Figure 2-1).
- The tarp and sample were dragged into the maintenance building.
- Large items (e.g., mattresses, furniture, carpeting) were removed from the sample and set aside for weighing.

Figure 2-1
Data Form

Sample #:	Section:	Route:	Truck #:
Collection date:	Sorting date:	Sorting team:	

Paper		Food waste	Yard waste	Other degradables	Bulk wood
	Total:	Total:	Total:	Total:	Total:

Plastic	Textiles	Glass & ceramics	Large composites	Nondegrad. fines	Unclassifiable fines
Total:	Total:	Total:	Total:	Total:	Total:

Metal	Subsort of metal (does not add to total for metal)				
	Aluminum	Brass	Copper	Lead	Other (specify)
Total:	Total:	Total:	Total:	Total:	Total:

Other nondegrad.	Subsort of other nondegradables (does not add to total for other nondegradables)				
	Electronics	Other electrical	Insulated wiring	Batteries (specify)	Other (specify)
	Total:	Total:	Total:		
	Light bulbs	Fluorescent tubes	Gypsum board		
Total:	Total:	Total:	Total:	Total:	Total:

Notes	Total weight of sample

- The remainder of the sample was moved by increments into one of the two sorting boxes. The sorting boxes are 4 feet wide, 6 feet long, and 10 inches deep, and sit on stands approximately 33 inches high.

- Containers for 12 of the 13 primary sorting categories (see Section 2.4 below) were arranged around the sorting box and the waste was sorted into the containers. The sorting supervisor and the CDM field supervisor checked the containers periodically for accuracy of sorting.

- When a relatively small quantity of small pieces of waste remained on the half-inch mesh screen mounted 1.5 inches off the bottom of the sorting box, sorting became unproductive and was called to a halt. The sorting box was dumped in such a way that the material that had fallen through the screen was kept separate from the material that had remained on top of the screen. The two piles of material were placed in separate containers. The material from above the screen was categorized as "unclassifiable fines," the 13th primary sorting category. The material from below the screen was categorized as food waste, "other degradables," "other nondegradables," a combination of these, or unclassifiable fines, based on the judgement of the sorting supervisor.

- The containers were brought to the scale, checked again for accuracy of sorting, and weighed.

- The scale was set at minus the tare weight of the containers, each container was placed on the scale, and the weight shown on the scale's digital display was recorded as the weight of the waste in the container.

- The containers were dumped in a rolloff container provided by DOS.

When the primary sorting was complete, the CDM field supervisor sorted the metal and "other nondegradables" categories into the 14 secondary categories (see Section 2.4.2 below).

2.4 Waste Category Definitions

This section defines the 13 primary waste categories and 14 secondary waste categories used in the study. The results of the study should not be interpreted without reference to the category definitions.

2.4.1 Primary Categories

Paper. All paper, including plastic-coated paper and paper in bulky items such as paperboard barrels and thick-walled paperboard tubes.

Food Waste. All items produced or gathered for use as food, including the inedible portions, except large bones and shells. Includes the contents of beverage containers, including water. Includes coffee grounds. In practice, some food waste becomes part of the fines category.

Yard Waste. Leaves, grass clippings, shrub and garden trimmings, weeds and wild grasses, pine needles and cones, twigs, vegetative ground litter, small uprooted plants, and dirt that cannot readily be separated from the plant material. Also includes fruits, nuts, flowers and seed casings fallen from trees. Does not include cut flowers. Does not include uprooted shrubs or tree parts more than one half inch in diameter.

Other Degradables. Includes all small, readily biodegradable items that do not fit the definition of paper, food waste or yard waste. Includes disposable diapers and their contents, sanitary napkins, animal feces, cut flowers and dryer lint.

Bulk Wood. All plywood, chipboard, and particle board. All wooden and wicker furniture. All dimensional lumber with two dimensions greater than one half inch. All uprooted shrubs and all tree branches greater than one half inch in diameter. On a weight basis, this category includes almost all wood in residential refuse.

Textiles. Includes all separate items consisting of woven fabrics. Includes rugs, carpeting, and woven carpet padding. Includes towels and washcloths, cloth napkins and cloth place mats. Includes woven curtains and drapes, awnings, tents, and tarpaulins. Includes bed pillows, comforters, and quilted jackets and coats.

Plastic. All items consisting primarily of plastic. Includes polyethylene of all densities, polyethylene terephthalate (PET or PETE), polystyrene (both solid and foam), polypropylene, polyvinyl chloride (PVC), acrylonitrile butadiene styrene (ABS), polyurethane (both solid and foam), and a variety of other polymers.

Metal. All items consisting primarily of metal.

Glass and Ceramics. Items consisting primarily of glass or ceramics. Includes glass mirrors. Does not include light bulbs or fluorescent tubes, which are included in "other nondegradables." In practice, does not include broken beverage containers, because the broken pieces are too dangerous to handle. Broken beverage containers tend to end up as "unclassifiable fines" (see below).

Large Composite Items. All large items consisting of material from more than one of the other waste categories. Includes mattresses, box springs, and stuffed furniture, including large cushions.

Nondegradable Fines. All inorganic materials that can be separated from the other categories of waste and that consist of or will break down to small particles that are generally not objectionable in compost. Includes dirt, sand, ashes, and cat litter. Does not include broken glass.

Other Nondegradables. All materials that are not readily biodegradable and that do not fit any of the waste categories defined above. Includes wood that does not fit the definition of "bulk wood" above. Includes leather items. Includes gypsum board, bricks, cinder blocks, concrete, asphalt, stones, and gravel. Generally includes small

and medium-sized items consisting of materials from more than one other waste category. Includes all footwear not primarily composed of plastic. Includes lightbulbs, fluorescent tubes, batteries, electronic and electrical devices, and insulated electrical wiring and cables.

Unclassifiable Fines. Includes material that passes through the half-inch wire mesh screen mounted 1.5 inches above the bottom of the sorting box (bottom fines), if this material can not be classified as food waste, other degradables, classifiable fine inorganics, or other nondegradables. Also includes small pieces of material left on top of the screen at the point when sorting becomes too inefficient to justify continuing (top fines). Generally includes pieces of broken beverage containers.

2.4.2 Secondary Categories

2.4.2.1 Subcategories of Metal

Aluminum. All items consisting primarily of aluminum, including but not limited to aluminum beverage cans, aluminum foil and disposable pans, aluminum pet food containers, aluminum cookware, aluminum aerosol spray cans, and aluminum lawn furniture. Does not include bimetal (aluminum and steel) cans.

Brass. All items consisting primarily of brass, including but not limited to brass plumbing fixtures and parts, keys, antennas, and decorative items. Brass is an alloy that is typically about two-thirds copper and one-third zinc but often contains up to 2 percent lead and occasionally contains 5 or 10 percent lead.

Copper. All items consisting primarily of copper, including but not limited to copper tubing, uninsulated copper wire, and U.S. coins other than nickels. Does not include the copper in insulated copper wiring, electronic devices, electric motors, or other electrical devices.

Lead. All items consisting in substantial part of lead, including but not limited to wheel weights, ceiling fan balancing weights, lead-acid batteries, lead wine bottle caps (wrapped around the bottle mouth), and tin-lead solder. Includes tin-lead solder if separate in the sample, but does not include the lead in soldered devices such as circuit boards (see "electronics" below).

Pot Metal. All items consisting primarily of die-cast, nonmagnetic, silver-gray metal. Largest component is generally zinc. The term "pot metal" is also used to refer to alloys of copper and lead used for bearing surfaces, but that is not the type of pot metal typically found in residential refuse.

Ferrous Metal. All items consisting primarily of iron and steel. This category typically includes essentially all of the metal that does not fit any of the subcategories described above.

2.4.2.2 Subcategories of "Other Nondegradables"

Electronics. Devices that contain a circuit board of significant size relative to the size of the device, and insulated wiring attached to such devices. Includes computers, computer monitors and printers, touchtone telephones, boom boxes, radios, calculators, microwave ovens, video cameras, and stereo components other than speakers.

Other Electrical Devices. Electrical devices other than electronics, light bulbs, and fluorescent tubes. Includes insulated wiring attached to such devices, but does not include extension cords or other detached wiring (see "insulated wiring" below). Includes mechanical devices with electric motors such as vacuum cleaners and garbage disposals. Includes speakers, power tools, lamps, flashlights, and most toasters and toaster ovens. Includes electrical fixtures such as switches, receptacles (outlets), and lighting fixtures.

Insulated Wiring. All wire covered with plastic or other insulation, except such wiring attached to electronics or electrical devices. Includes electrical cable and extension cords, cable television wiring, and telephone wire. Includes printer cables and other detached wiring associated with computers.

Light Bulbs. All incandescent light bulbs except those inside electrical devices. Includes the bases of broken light bulbs.

Fluorescent Tubes. All lighting tubes and bulbs based on fluorescent technology.

Gypsum Board. Wallboard with a layer of gypsum sandwiched between two thin layers of paper.

Batteries. All batteries except lead-acid batteries, which are included in the metal category and the lead subcategory of the metal category.

- The standard deviation is the square route of the mean of the squares of the differences.

The standard deviation is a standard function in spreadsheet programs and many calculators.

Confidence interval. The range of values, centered on the mean, that has a specified statistical probability of including the true value of the parameter being sampled. The 90-percent confidence interval has a 90-percent statistical probability of including the true value.

Confidence level. The likelihood that the actual value falls within the corresponding confidence interval. A 90-percent confidence level corresponds to a 90-percent confidence interval. The confidence level is selected in advance based on a tradeoff. The tradeoff is between great confidence that the true value lies within a wide range and lower confidence that the true value lies within a narrow range.

Student t value. A standard statistical value corresponding to a specific number of samples and a specific confidence level. Most basic statistics books have tables of Student t values. These values were first calculated in the early 1900s by W. S. Gossett, who used the pseudonym "Student" at that time.

Uncertainty value. The absolute difference between the mean and either the upper or lower limit of the confidence interval. It is the product of the Student t value and the standard deviation, divided by the square root of the number of samples. Each waste category in each group of samples has its own distinct uncertainty value.

Precision level. The uncertainty value divided by the mean. Note that the "precision level" decreases as precision increases, so a lower precision level is better. Each waste category in each group of samples has its own distinct precision level.

Weighted-average precision level. An overall precision level for a group of samples and waste categories, calculated by weighting the precision levels of the individual waste categories in proportion to the relative abundance of the individual waste categories.

3.2 Results of Sampling and Sorting

This section, together with Appendix B, presents the results of the waste sampling and sorting. Table B-1 in Appendix B shows the weight data for the primary waste categories for each sample. In addition to the quantity of paper shown in Table B-1, the sorted refuse contained at least $45 in paper currency.

Table B-2 in Appendix B shows the composition of each waste sample based on the weight data for the primary waste categories shown in B-1. The mean (average) values across the bottom of Table B-2 are the average composition of the 70 samples,

based on the primary waste categories. Just below the mean composition values are the standard deviations for the percentages in each column.

Table B-3 in Appendix B shows the weight data for the secondary waste categories for each sample (the raw results of subsorting the metal and "other nondegradables" categories). Table B-4 in Appendix B shows the percentage of each secondary waste category in each sample, based on the weight data in Table B-3. As in Table B-2, average percentages and standard deviations for each secondary category are shown at the bottom of Table B-4.

A waste composition study is essentially a statistical exercise, and statistical analysis requires that the samples have equal statistical weight. Because the samples have different numbers of pounds, the pound data (tables B-1 and B-3) are converted to percentage compositions (tables B-2 and B-4) to give the samples equal statistical weight.

Tables 3-1 and 3-2 show the average percentages and the standard deviations from across the bottom of tables B-2 and B-4. In addition, tables 3-1 and 3-2 show the derivation of uncertainty factors and precision levels for the sorting results, as well as the 90-percent confidence interval for each waste category. Note that in Table 3-1 the sum of the uncertainty values for the individual waste categories is the same as the overall (weighted average) precision level. This is always true for data sets of this type.

3.3.1 Results of Primary Sorting

During the 5 days of field work, 70 samples totaling 21,934 pounds were sorted into 13 primary categories. The average sample size of 313 pounds exceeded the guaranteed average by 63 pounds.

The weighted average precision level for the 13 primary waste categories was 9.4 percent at 90-percent confidence. This is an excellent level of precision in waste characterization work. It indicates that there is a 90-percent probability that the true composition of the loads of waste sent to the Marlboro composting facility was within 9.4 percent of the composition presented in Table 3-1.

Combining the 13 primary waste categories into only three categories—degradables, nondegradables, and unclassifiable fines—improves the weighted average precision level to 3.2 percent at 90-percent confidence.

As shown by Table 3-1, the degradable categories totaled 55.5 percent of the sorted waste, the nondegradable categories totaled 40.2 percent, and the unclassifiable fines accounted for the remaining 4.3 percent. In considering the feasibility of composting in light of these values, the following should be kept in mind:

- Most of the nondegradable fines (3.5 percent of the total and 8.7 percent of the nondegradables) will become part of the compost.

Table 3-1
Composition of the Sorted Samples with Statistical Analysis

Waste category	Average percentage in the 70 samples (x)	Standard deviation (s)	Student t value (t*) for 70 samples (n) and 90% confidence	Uncertainty value for 90% confidence ($U_{90}=t^*s/n^{1/2}$)	Precision level at 90% confidence (U_{90}/x)	90% confidence interval ($x-U_{90}$ to $x+U_{90}$)
Paper	32.1%	5.2%	1.668	1.0%	3.2%	31.0% to 33.1%
Food waste	15.9%	4.5%	1.668	0.89%	5.6%	15.0% to 16.8%
Yard waste	1.6%	3.4%	1.668	0.67%	41.6%	0.94% to 2.3%
Other degradables	6.0%	3.5%	1.668	0.69%	11.6%	5.3% to 6.7%
Total degradables	55.5%	7.1%	1.668	1.4%	2.5%	54.1% to 56.9%
Bulk wood	3.4%	3.0%	1.668	0.60%	17.7%	2.8% to 4.0%
Plastic	15.4%	3.4%	1.668	0.68%	4.4%	14.8% to 16.1%
Textiles	5.3%	4.3%	1.668	0.86%	16.3%	4.4% to 6.2%
Glass and ceramics	3.3%	2.5%	1.668	0.50%	15.2%	2.8% to 3.8%
Metal	3.1%	1.4%	1.668	0.28%	9.0%	2.9% to 3.4%
Large composite items	1.0%	4.5%	1.668	0.90%	91.4%	0.084% to 1.9%
Nondegradable fines	3.5%	3.8%	1.668	0.76%	21.7%	2.7% to 4.2%
Other nondegradables	5.1%	6.0%	1.668	1.2%	23.4%	3.9% to 6.3%
Total nondegradables	40.2%	7.3%	1.668	1.5%	3.6%	38.7% to 41.6%
Unclassifiable fines	4.3%	1.7%	1.668	0.34%	7.9%	4.0% to 4.7%
Total of 13 individual categories	100.0%	---	---	9.4%	---	---
Weighted-average precision level based on the 13 individual categories	---	---	---	---	9.4%	---
Weighted-average precision level based on degradables, nondegradables, and unclassifiable fines	---	---	---	---	3.2%	---

Table 3-2
Composition of Subsorted Waste Categories with Statistical Analysis

Waste category	Average percentage in the 70 samples (x)	Standard deviation (s)	Student t value (t*) for 70 samples (n) and 90% confidence	Uncertainty value for 90% confidence ($U_{90}=t^*s/n^{1/2}$)	Precision level at 90% confidence (U_{90}/x)	90% confidence interval ($x-U_{90}$ to $x+U_{90}$)
Aluminum	0.75%	0.40%	1.668	0.080%	10.6%	0.67% to 0.83%
Brass[1]	0.039%	0.078%	1.668	0.015%	39.7%	0.024% to 0.055%
Copper	0.0047%	0.017%	1.668	0.0033%	69.7%	0.0014% to 0.0080%
Lead	0.0020%	0.012%	1.668	0.0025%	121.0%	0.000% to 0.0045%
Pot metal[2]	0.010%	0.039%	1.668	0.0077%	74.1%	0.0027% to 0.018%
Ferrous metal	2.3%	1.4%	1.668	0.28%	11.8%	2.1% to 2.6%
All metal (from Table 3-1)	3.1%	1.4%	1.668	0.28%	9.0%	2.9% to 3.4%
Electronics	0.52%	1.4%	1.668	0.28%	52.5%	0.25% to 0.80%
Other electrical devices	0.70%	1.8%	1.668	0.35%	50.4%	0.35% to 1.0%
Insulated wiring	0.10%	0.3%	1.668	0.055%	54.4%	0.046% to 0.16%
Light bulbs	0.046%	0.13%	1.668	0.025%	54.6%	0.021% to 0.071%
Fluorescent tubes	0.00%	0.00%	1.668	0.00%	---	0.00% to 0.00%
Gypsum board	1.3%	3.1%	1.668	0.62%	47.5%	0.68% to 1.9%
Batteries	0.11%	0.12%	1.668	0.024%	22.2%	0.085% to 0.13%
Other "other nondegradables"	2.4%	4.8%	1.668	0.95%	40.2%	1.4% to 3.3%
All "other nondegradables" (from Table 3-1)	5.1%	6.0%	1.668	1.2%	23.4%	3.9% to 6.3%

[1]Alloys of copper and zinc with some lead
[2]Primarily zinc

- A substantial portion of the unclassifiable fines (4.3 percent of the total) is small pieces of paper and food waste that will become part of the compost. The abundance of broken glass in the unclassifiable fines was relatively low.

- On the other hand, the degradable waste categories are not completely degradable. Some paper is resistant to composting, food waste contains bones, yard waste contains twigs that resist composting, and "other degradables" include the plastic covers of diapers.

3.3.2 Results of Secondary Sorting

Table 3-2 shows the results of subsorting the metal and "other nondegradables" categories.

3.3.2.1 Subcategories of Metal

Almost three fourths of the metal was ferrous metal, most of which can be removed from the composting process using magnets. Almost one fourth of the metal was aluminum. Brass, copper, lead and pot metal (primarily zinc) accounted for a total of less than 2 percent of the metal. A small percentage of the ferrous metal was plated with brass, but quantifying the brass plating was beyond the scope of this study.

With respect to composting, the most significant object in the subsorted metal was half a pound of fine tin-lead solder on a light plastic spool. If the solder broke into small pieces that all ended up in the compost, the solder could contribute 86 parts per million of lead (dry basis) to the compost derived from 5 tons of refuse. New York's lead standard for Class I compost is 250 parts per million. The estimate of 86 parts per million is based on the solder being 40-percent lead, the refuse being 30-percent moisture, and the 5 tons of refuse yielding one third as much compost (both refuse and compost on a dry basis). Because the size-reduction process at Bedminster Bioconversion composting facilities does not include violent shredding, it is unlikely that all of the solder would become part of the compost from a Bedminster facility.

The copper in the metal category included at least 35 pennies, 6 dimes and a quarter.

In Table 3-2, the 90-percent confidence interval for lead extends to zero. This does not mean it is possible that the residential refuse sent to Marlboro contained no lead. The fact that the confidence interval extends to zero is an indication that the standard statistical formulas do not work well for waste categories that appear in only a few samples. The means for these waste categories are low compared to their statistical variability, so the confidence intervals for these categories are large compared to their means. Because the means are low, the large confidence intervals may extend to zero, or even below zero.

No lead-acid batteries were found in the samples. Other types of batteries are addressed in Sections 3.3.3 and 3.3.4.

3.3.2.2 Subcategories of "Other Nondegradables"

The great majority of the insulated wiring was copper wiring. Almost all of the electronics, other electrical devices, and insulated wiring are large enough to be pulled out or screened out during either the material preparation or compost refinement process.

The majority of the light bulbs in the samples were broken, and the broken glass could not be recovered for weighing with the light bulbs. This reduced the result for this subcategory significantly.

A significant portion of the gypsum board category could break down into pieces small enough to be included in the compost. On the other hand, the facility operator might prefer to pull the gypsum board out prior to composting to remove the potential for the sulfur in the gypsum to cause odor problems. Gypsum is hydrous calcium sulfate, which is 18.6 percent sulfur by weight.

Batteries are addressed in sections 3.3.3 and 3.3.4.

The 90-percent confidence interval for fluorescent tubes in Table 3-2 begins and ends at zero. This does not mean the residential refuse sent to Marlboro contained no fluorescent tubes. It means only that the 11 tons of sorted refuse contained no fluorescent tubes. Because none of the 70 sorted samples contained a fluorescent tube, the variability among the samples in each season was zero and the statistical confidence interval is zero. This is another illustration of the fact that statistics are not reality. Rather, statistics are a mathematical tool used to estimate how close to reality the results of a study are likely to be. Although we know there are fluorescent tubes in residential refuse, the results of this study indicate that their number is small.

3.3.3 Results of Examination of Bottom Fines

The bottom fines are the small pieces of waste that fall through the half-inch mesh ("hardware cloth") mounted 1.5 inches above the bottom of each sorting box. The CDM field supervisor thoroughly stirred and sifted through the bottom fines from each sample using a pair of permanent disk-shaped magnets approximately 2 inches in diameter (one magnet in each hand). The purpose of this exercise was to find objects that could contaminate compost.

Eight button batteries were found in the bottom fines. Button batteries are the very small batteries used in watches, calculators and hearing aids. They are magnetic and were found on the magnets used to stir the fines. Seven of the button batteries appear to be of the silver oxide type and the seventh is a zinc-air battery. It is significant that no mercury (mercuric oxide) batteries were found. Battery manufacturers have discontinued many mercuric oxide batteries.

No other objects with particular significance for composting were found in the bottom fines.

3.3.4 Overall Results for Batteries

Table 3-3 presents an accounting of the loose batteries found in the 11 tons of refuse sorted during the 5 days of field work. Sixty-eight percent of the 304 batteries found were AA batteries of the alkaline and zinc-carbon types.

In New York State, the particle size of Class I compost must not exceed 10 millimeters (0.39 inches). The diameter of AA, C, D and 9-volt batteries, as well as the nickel-cadmium and "other" batteries shown in Table 3-3, is 0.5 inches or greater, and the batteries do not degrade during composting. Therefore, none of these batteries should be present in compost qualifying as Class I. Most of the AAA batteries should be screened out as well.

If not screened out, the nickel-cadmium batteries could contribute 7 parts per million of cadmium (dry basis) to the compost derived from 5 tons of refuse. New York's cadmium standard for Class I compost is 10 parts per million on a dry basis. The estimate of 7 parts per million is based on the batteries being 17.5-percent cadmium, the refuse being 30-percent moisture, and the 5 tons of refuse yielding one third as much compost (both refuse and compost on a dry basis). It is unlikely that the three nickel-cadmium batteries, which were combined in one plastic-wrapped battery pack, would not be screened out of the compost.

3.3.5 Summary of Results

Table 3-4 summarizes the results of the primary and secondary sorting. Each value in Table 3-4 is the same as the corresponding value in Table 3-1 or Table 3-2.

Table 3-3
Loose Batteries Found in the Sorted Refuse

Configuration	Total number	Number per ton of refuse	Percent of total number of batteries found	Average weight (lbs)	Total weight (lbs)	Weight per ton of refuse (lbs)	Percent of total weight of batteries
AAA	27	2.5	8.9%	0.026	0.71	0.065	3.0%
AA	207	18.9	67.9%	0.05	10.4	0.94	44.0%
C	24	2.2	7.9%	0.15	3.6	0.33	15.3%
D	23	2.1	7.5%	0.31	7.2	0.66	30.5%
9V	14	1.3	4.6%	0.096	1.3	0.12	5.7%
3x1.2V NiCd	1	0.091	0.33%	0.094	0.094	0.0085	0.40%
Button	8	0.7	2.6%	0.0026	0.021	0.0019	0.089%
Other	1	0.091	0.33%	0.24	0.24	0.022	1.0%
Total	305	27.8	100.0%	---	23.5	2.1	100.0%

Table 3-4
Summary of Results

Waste category	Average percentage in the 70 samples	90% confidence interval
Paper	32.1%	31.0% to 33.1%
Food waste	15.9%	15.0% to 16.8%
Yard waste	1.6%	0.94% to 2.3%
Other degradables	6.0%	5.3% to 6.7%
All degradables	55.5%	54.1% to 56.9%
Bulk wood	3.4%	2.8% to 4.0%
Plastic	15.4%	14.8% to 16.1%
Textiles	5.3%	4.4% to 6.2%
Glass and ceramics	3.3%	2.8% to 3.8%
Metal		
Aluminum	0.75%	0.67% to 0.83%
Brass[1]	0.039%	0.024% to 0.055%
Copper	0.0047%	0.0014% to 0.0080%
Lead	0.0020%	0.000% to 0.0045%
Pot metal[2]	0.010%	0.0027% to 0.018%
Ferrous	2.3%	2.1% to 2.6%
Total metal	3.1%	2.9% to 3.4%
Large composite items	1.0%	0.084% to 1.9%
Nondegradable fines	3.5%	2.7% to 4.2%
Other nondegradables		
Electronics	0.52%	0.25% to 0.80%
Other electrical devices	0.70%	0.35% to 1.0%
Insulated wiring	0.10%	0.046% to 0.16%
Light bulbs	0.046%	0.021% to 0.071%
Fluorescent tubes	0.00%	0.00% to 0.00%
Gypsum board	1.3%	0.68% to 1.9%
Batteries	0.11%	0.085% to 0.13%
Other	2.4%	1.4% to 3.3%
All "other nondegradables"	5.1%	3.9% to 6.3%
All nondegradables	40.2%	38.7% to 41.6%
Unclassifiable fines	4.3%	4.0% to 4.7%
Total	100.0%	---

[1]Alloys of copper and zinc with some lead
[2]Primarily zinc

Table A-1
List of Collection Routes and Selection of Routes to Include in Study

CDM route desig-nation	Section in which route ends	Section in which route begins, if different	Day of week	Date	Primary over-lapping route	Overlap with primary over-lapping route[1]	Other over-lapping route	Overlap with other over-lapping route[1]	CDM desig-nation of distinct routes[2]	Include in study? 1 = yes 0 = no	Use as alternate? 1 = yes 0 = no
1	21	---	Mon	2/26/2001	---	---	---	---	1	0	0
2	21	---	Mon	2/26/2001	---	---	---	---	2	0	1
3	21	---	Mon	2/26/2001	---	---	---	---	3	1	0
4	21	---	Mon	2/26/2001	---	---	---	---	4	0	0
5	21	---	Mon	2/26/2001	---	---	---	---	5	1	0
6	21	22	Mon	2/26/2001	---	---	---	---	6	0	0
7	21	---	Tue	2/27/2001	---	---	---	---	7	0	1
8	21	---	Tue	2/27/2001	---	---	---	---	8	1	0
9	21	---	Tue	2/27/2001	---	---	---	---	9	0	0
10	21	---	Tue	2/27/2001	---	---	---	---	10	1	0
11	21	24	Tue	2/27/2001	---	---	---	---	11	0	0
12	21	---	Wed	2/28/2001	---	---	---	---	12	1	0
13	21	---	Wed	2/28/2001	---	---	---	---	13	0	0
14	21	---	Wed	2/28/2001	---	---	---	---	14	0	0
15	21	---	Wed	2/28/2001	---	---	---	---	15	1	0
16	21	---	Wed	2/28/2001	---	---	---	---	16	0	0
17	21	---	Thu	3/1/2001	1	79%	---	---	1	1	0
18	21	---	Thu	3/1/2001	2	91%	---	---	2	0	1
19	21	---	Thu	3/1/2001	3	62%	---	---	3	0	0
20	21	---	Thu	3/1/2001	4	75%	---	---	4	1	0
21	21	---	Fri	3/2/2001	7	85%	---	---	7	0	0
22	21	---	Fri	3/2/2001	8	97%	---	---	8	0	0
23	21	---	Fri	3/2/2001	9	100%	---	---	9	0	0
24	21	---	Fri	3/2/2001	10	81%	---	---	10	0	0
25	21	---	Sat	2/24/2001	12	87%	---	---	12	0	0
26	21	---	Sat	2/24/2001	13	75%	---	---	13	1	0
27	21	---	Sat	2/24/2001	15	79%	---	---	15	0	0
28	21	---	Sat	2/24/2001	16	90%	---	---	16	1	0
Total	---	---	---	---	---	---	---	---	---	10	3

Table A-1, continued
List of Collection Routes and Selection of Routes to Include in Study

CDM route desig-nation	Section in which route ends	Section in which route begins, if different	Day of week	Date	Primary over-lapping route	Overlap with primary over-lapping route[1]	Other over-lapping route	Overlap with other over-lapping route[1]	CDM desig-nation of distinct routes[2]	Include in study? 1 = yes 0 = no	Use as alternate? 1 = yes 0 = no
29	22	---	Mon	2/26/2001	---	---	---	---	17	0	0
30	22	---	Mon	2/26/2001	---	---	---	---	18	0	0
31	22	---	Mon	2/26/2001	---	---	---	---	19	1	0
32	22	---	Mon	2/26/2001	---	---	---	---	20	0	0
33	22	---	Tue	2/27/2001	---	---	---	---	21	0	0
34	22	---	Tue	2/27/2001	---	---	---	---	22	1	0
35	22	---	Tue	2/27/2001	---	---	---	---	23	0	0
36	22	---	Tue	2/27/2001	---	---	---	---	24	0	0
37	22	---	Tue	2/27/2001	---	---	---	---	25	1	0
38	22	---	Wed	2/28/2001	---	---	---	---	26	1	0
39	22	---	Wed	2/28/2001	---	---	---	---	27	0	0
40	22	---	Wed	2/28/2001	---	---	---	---	28	1	0
41	22	---	Wed	2/28/2001	---	---	---	---	29	0	0
42	22	---	Wed	2/28/2001	---	---	---	---	30	0	0
43	22	---	Wed	2/28/2001	---	---	---	---	31	1	0
44	22	---	Thu	3/1/2001	6	41%	---	---	32	0	1
45	22	---	Thu	3/1/2001	30	76%	---	---	18	1	0
46	22	---	Thu	3/1/2001	31	88%	---	---	19	0	0
47	22	---	Fri	3/2/2001	33	79%	---	---	21	0	0
48	22	---	Fri	3/2/2001	35	41%	34	36%	22/23	0	0
49	22	---	Fri	3/2/2001	36	63%	35	37%	24	0	0
50	22	---	Sat	2/24/2001	39	75%	38	8%	27	1	0
51	22	---	Sat	2/24/2001	40	61%	---	---	28	0	0
52	22	---	Sat	2/24/2001	41	76%	---	---	29	0	1
53	22	---	Sat	2/24/2001	42	68%	---	---	30	1	0
Total	---	---	---	---	---	---	---	---	---	9	2

Table A-1, continued
List of Collection Routes and Selection of Routes to Include in Study

CDM route desig-nation	Section in which route ends	Section in which route begins, if different	Day of week	Date	Primary over-lapping route	Overlap with primary over-lapping route[1]	Other over-lapping route	Overlap with other over-lapping route[1]	CDM desig-nation of distinct routes[2]	Include in study? 1 = yes 0 = no	Use as alternate? 1 = yes 0 = no
54	23	---	Mon	2/26/2001	---	---	---	---	33	0	0
55	23	---	Mon	2/26/2001	---	---	---	---	34	1	0
56	23	---	Mon	2/26/2001	---	---	---	---	35	0	1
57	23	---	Mon	2/26/2001	---	---	---	---	36	0	0
58	23	---	Mon	2/26/2001	---	---	---	---	37	0	0
59	23	---	Tue	2/27/2001	---	---	---	---	38	1	0
60	23	---	Tue	2/27/2001	---	---	---	---	39	0	0
61	23	---	Tue	2/27/2001	---	---	---	---	40	0	0
62	23	---	Tue	2/27/2001	---	---	---	---	41	1	0
63	23	---	Wed	2/28/2001	---	---	---	---	42	0	0
64	23	---	Wed	2/28/2001	---	---	---	---	43	0	1
65	23	---	Wed	2/28/2001	---	---	---	---	44	1	0
66	23	---	Wed	2/28/2001	---	---	---	---	45	0	0
67	23	---	Thu	3/1/2001	54	78%	---	---	33	1	0
68	23	---	Thu	3/1/2001	55	70%	---	---	34	0	0
69	23	---	Thu	3/1/2001	56	35%	---	---	46	1	0
70	23	---	Thu	3/1/2001	58	78%	57	22%	37	0	0
71	23	---	Fri	3/2/2001	59	100%	---	---	38	0	0
72	23	---	Fri	3/2/2001	60	100%	---	---	39	0	0
73	23	---	Fri	3/2/2001	61	100%	---	---	40	0	0
74	23	---	Fri	3/2/2001	62	100%	---	---	41	0	0
75	23	---	Sat	2/24/2001	63	79%	---	---	42	1	0
76	23	---	Sat	2/24/2001	64	81%	---	---	43	0	0
77	23	---	Sat	2/24/2001	66	79%	65	27%	45	1	0
Total	---	---	---	---	---	---	---	---	---	8	2

Table A-1, continued
List of Collection Routes and Selection of Routes to Include in Study

CDM route desig-nation	Section in which route ends	Section in which route begins, if different	Day of week	Date	Primary over-lapping route	Overlap with primary over-lapping route[1]	Other over-lapping route	Overlap with other over-lapping route[1]	CDM desig-nation of distinct routes[2]	Include in study? 1 = yes 0 = no	Use as alternate? 1 = yes 0 = no
78	24	---	Mon	2/26/2001	---	---	---	---	47	0	0
79	24	---	Mon	2/26/2001	---	---	---	---	48	1	0
80	24	---	Mon	2/26/2001	---	---	---	---	49	0	0
81	24	---	Mon	2/26/2001	---	---	---	---	50	1	0
82	24	---	Mon	2/26/2001	---	---	---	---	51	0	0
83	24	---	Mon	2/26/2001	---	---	---	---	52	1	0
84	24	---	Mon	2/26/2001	---	---	---	---	53	0	0
85	24	---	Tue	2/27/2001	---	---	---	---	54	0	0
86	24	---	Tue	2/27/2001	---	---	---	---	55	0	1
87	24	---	Tue	2/27/2001	---	---	---	---	56	1	0
88	24	---	Wed	2/28/2001	---	---	---	---	57	0	0
89	24	---	Wed	2/28/2001	---	---	---	---	58	1	0
90	24	---	Wed	2/28/2001	---	---	---	---	59	0	0
91	24	---	Wed	2/28/2001	---	---	---	---	60	0	1
92	24	---	Thu	3/1/2001	78	95%	---	---	47	1	0
93	24	---	Thu	3/1/2001	79	94%	---	---	48	0	0
94	24	---	Thu	3/1/2001	80	96%	---	---	49	1	0
95	24	---	Thu	3/1/2001	81	74%	---	---	50	0	0
96	24	---	Thu	3/1/2001	82	84%	---	---	51	1	0
97	24	---	Thu	3/1/2001	83	89%	---	---	52	0	0
98	24	---	Fri	3/2/2001	85	100%	---	---	54	0	0
99	24	---	Fri	3/2/2001	86	100%	---	---	55	0	0
100	24	---	Fri	3/2/2001	87	100%	---	---	56	0	0
101	24	22	Fri	3/2/2001	37	50%	---	---	37	0	0
102	24	---	Sat	2/24/2001	88	75%	---	---	57	1	0
103	24	---	Sat	2/24/2001	89	81%	---	---	58	0	0
104	24	---	Sat	2/24/2001	90	85%	---	---	59	1	0
105	24	22	Sat	2/24/2001	91	24%	43	8%	61	0	1
Total	---	---	---	---	---	---	---	---	---	10	3

[1]This is the number of lines in the route description that match lines in the description of the overlapping route, divided by the total number of lines in the route description.
[2]A route is counted as distinct if more than half of the lines in its description are not found in the description of any other route.

Monday total	7	2
Tuesday total	7	2
Wednesday total	7	2
Thursday total	8	2
Friday total	0	0
Saturday total	8	2
Total for week	37	10

Table B-1
Pounds of Each Primary Waste Category in Each Sample

Sample number	Waste collection date	Sampling & sorting date	Section	Route	Truck number	Paper	Food waste	Yard waste	Other degradables	Bulk wood	Plastic	Textiles	Glass & ceramics	Metal	Large composites	Nondegradable fines	Other nondegradables	Unclassifiable fines	Total
1	2/24/2001	2/26/2001	24	3	25BR245	81.8	44.0	0.0	9.9	17.6	30.8	12.5	3.3	10.8	0.0	11.4	1.9	4.7	228.7
2	2/24/2001	2/26/2001	24	3	25BR245	103.4	58.3	0.9	17.2	29.1	40.4	12.8	5.7	20.8	0.0	19.3	17.0	3.5	328.4
3	2/24/2001	2/26/2001	22	4	25CN362	70.1	46.5	2.1	27.1	19.8	44.9	0.0	9.3	6.5	0.0	18.4	9.3	10.3	264.3
4	2/24/2001	2/26/2001	22	4	25CN362	88.3	35.8	55.7	13.5	3.7	64.1	7.7	33.9	10.6	0.0	28.9	49.6	14.8	406.6
5	2/24/2001	2/26/2001	21	2	25CF179	92.4	69.8	0.3	27.0	32.2	46.1	32.6	9.5	5.8	0.0	8.7	17.0	6.8	348.2
6	2/24/2001	2/26/2001	21	2	25CF179	82.5	30.1	0.0	26.2	2.8	37.8	17.6	2.5	7.7	0.0	15.0	21.7	1.4	245.3
7	2/24/2001	2/26/2001	24	1	25CF167	117.1	60.6	0.0	14.8	7.1	45.5	15.0	12.1	11.2	0.0	4.7	34.5	12.7	335.3
8	2/24/2001	2/26/2001	24	1	25CF167	96.7	53.4	0.1	5.1	10.1	57.5	8.9	12.1	12.3	0.0	1.6	37.5	13.2	308.5
9	2/24/2001	2/26/2001	23	3	25CN040	100.7	58.4	0.0	20.4	8.0	49.7	20.3	12.3	6.6	0.0	11.6	5.5	12.1	305.6
10	2/24/2001	2/26/2001	23	3	25CN040	109.7	32.3	31.9	12.5	7.6	42.0	11.6	16.2	17.8	0.0	6.2	15.4	16.1	319.3
11	2/24/2001	2/26/2001	22	1	25BR170	126.4	81.0	0.0	55.2	34.3	57.4	38.6	20.9	11.0	0.0	14.1	1.4	17.1	457.4
12	2/24/2001	2/26/2001	23	1	25CN056	101.3	43.8	0.0	39.8	4.9	44.8	5.4	16.1	6.2	0.0	11.7	2.6	10.5	287.1
13	2/24/2001	2/26/2001	23	1	25CN056	95.5	47.9	16.2	23.3	11.9	32.3	3.0	13.4	8.4	0.0	6.8	8.8	11.8	279.3
14	2/24/2001	2/26/2001	21	4	25CF181	94.6	28.4	30.5	8.5	5.6	44.1	19.4	5.4	6.7	9.6	5.9	8.3	6.3	273.3
15	2/26/2001	2/27/2001	24	6	25BF781	205.4	96.8	0.7	15.8	10.0	104.4	31.1	9.6	14.4	0.0	29.0	8.6	28.9	554.7
16	2/26/2001	2/27/2001	24	6	25BF781	168.0	109.0	0.0	0.0	8.7	91.2	10.6	6.2	16.6	0.0	2.0	12.4	30.2	454.9
17	2/26/2001	2/27/2001	22	3	25BR170	144.9	68.1	0.0	72.1	46.3	60.9	7.2	3.6	31.9	0.0	14.3	3.6	27.7	480.6
18	2/26/2001	2/27/2001	22	3	25BR170	77.9	34.0	0.8	10.3	16.3	49.7	11.8	19.5	11.6	0.0	10.2	4.3	12.1	258.5
19	2/26/2001	2/27/2001	21	5	25BR288	174.1	57.9	0.0	21.0	6.1	72.6	44.7	5.2	15.4	0.0	5.7	14.7	29.9	447.3
20	2/26/2001	2/27/2001	21	5	25BR288	192.5	95.8	2.7	43.8	0.5	88.9	6.3	16.6	16.4	0.0	19.1	50.9	29.1	562.6
21	2/26/2001	2/27/2001	23	2	25CN058	173.4	77.5	1.0	53.2	4.8	111.0	12.0	22.8	14.0	0.0	8.3	9.2	30.6	517.8
22	2/26/2001	2/27/2001	23	2	25CN056	151.1	99.1	0.1	32.8	1.0	77.4	8.5	5.0	11.6	0.0	5.4	5.6	22.0	419.6
23	2/26/2001	2/27/2001	24	4	25BR302	144.0	68.7	0.0	24.8	3.2	74.5	11.2	10.2	14.7	5.6	6.3	14.4	16.9	394.5
24	2/26/2001	2/27/2001	24	4	25BR302	143.8	48.8	2.8	14.6	18.4	64.0	9.3	18.8	14.3	72.8	16.7	16.0	15.3	455.6
25	2/26/2001	2/27/2001	24	2	25CF101	70.1	35.0	0.0	9.8	17.0	21.7	6.7	3.4	4.7	0.0	3.0	3.1	12.1	186.6
26	2/26/2001	2/27/2001	24	2	25CF101	75.8	21.9	0.1	4.4	4.1	29.0	17.7	3.9	3.8	0.0	0.3	19.1	7.4	187.5
27	2/26/2001	2/27/2001	21	3	25BR286	60.5	11.4	0.0	6.8	4.9	23.4	16.2	1.7	3.4	0.0	21.8	4.5	7.3	161.9
28	2/26/2001	2/27/2001	21	3	25BR286	77.5	47.3	16.8	13.5	14.3	52.9	11.8	8.8	24.9	0.0	1.0	35.4	31.3	335.5
29	2/27/2001	2/28/2001	24	3	25CF101	65.5	47.1	0.0	27.6	6.3	48.2	46.0	5.3	10.0	0.0	1.0	4.6	10.9	272.5
30	2/27/2001	2/28/2001	24	3	25CF101	62.1	24.4	1.3	16.4	2.0	21.9	7.8	4.1	8.0	0.0	1.5	0.9	5.1	155.5
31	2/27/2001	2/28/2001	23	1	25CN018	36.0	10.6	13.0	2.2	4.8	20.4	6.1	1.8	1.7	0.0	0.8	3.6	2.2	103.2
32	2/27/2001	2/28/2001	23	1	25CN018	62.5	20.7	0.0	10.4	1.7	29.6	1.5	6.4	4.7	15.8	0.9	12.3	7.1	173.6
33	2/27/2001	2/28/2001	21	4	25CF179	73.1	23.2	0.0	5.8	13.6	46.6	11.5	22.6	11.4	0.0	0.1	6.7	7.2	221.8
34	2/27/2001	2/28/2001	21	4	25CF179	123.7	62.8	2.6	15.0	17.6	37.4	8.9	37.2	6.9	0.0	3.2	2.4	20.1	337.8
35	2/27/2001	2/28/2001	21	2	25CN362	109.5	41.2	8.0	19.7	7.8	36.2	30.9	6.7	11.0	0.0	5.0	2.1	16.9	295.0
36	2/27/2001	2/28/2001	21	2	25CN362	109.9	27.5	29.6	13.0	10.6	41.0	6.4	10.4	6.7	0.0	8.6	57.4	23.4	344.5
37	2/27/2001	2/28/2001	22	5	25BR170	81.2	38.3	2.0	4.5	0.3	39.5	13.1	5.8	24.2	0.0	55.5	0.6	13.6	278.6
38	2/27/2001	2/28/2001	22	5	25BR170	74.2	38.9	0.8	19.7	20.8	32.8	8.7	8.9	10.3	0.0	23.5	12.8	11.5	262.9
39	2/27/2001	2/28/2001	23	4	25CN039	178.5	82.3	0.0	29.8	5.0	85.5	22.8	10.8	14.0	30.8	14.3	32.3	20.5	526.6
40	2/27/2001	2/28/2001	23	4	25CN039	101.1	39.6	1.4	6.6	0.0	25.9	31.6	4.6	3.9	0.0	4.9	14.3	9.1	243.0
41	2/27/2001	2/28/2001	22	2	25CF180	61.1	23.3	22.3	0.0	3.1	41.8	11.0	4.3	8.6	0.0	6.0	0.3	13.9	195.7
42	2/27/2001	2/28/2001	22	2	25CF180	76.8	40.9	0.0	18.7	17.1	32.7	14.9	3.6	8.8	0.0	10.0	35.6	11.3	270.4
43	2/28/2001	3/1/2001	24	2	25BR781	105.5	43.9	0.1	15.6	3.1	56.6	11.6	9.4	13.0	0.0	0.6	7.4	4.4	271.2
44	2/28/2001	3/1/2001	24	2	25BR781	107.3	82.2	0.8	19.5	2.1	40.1	3.4	8.0	11.6	0.0	7.3	19.0	9.4	310.7
45	2/28/2001	3/1/2001	22	3	25BR170	107.7	46.9	0.4	31.9	13.7	59.6	31.1	7.8	8.8	0.0	17.3	6.4	16.7	348.3
46	2/28/2001	3/1/2001	22	3	25BR170	132.9	59.0	0.0	28.3	10.9	47.9	11.9	8.4	9.8	0.0	9.6	9.3	9.4	337.4
47	2/28/2001	3/1/2001	21	4	25BR166	106.4	55.8	2.8	27.5	4.9	50.4	4.3	15.2	8.4	0.0	8.8	5.4	12.0	301.9
48	2/28/2001	3/1/2001	21	4	25BR166	109.4	84.7	0.1	14.2	8.5	60.4	10.8	7.0	8.8	0.0	3.7	6.9	10.3	324.8
49	2/28/2001	3/1/2001	22	6	25CN056	68.2	33.0	0.1	24.2	2.6	39.0	7.1	33.0	5.4	0.0	0.6	5.7	12.3	231.2
50	2/28/2001	3/1/2001	22	6	25CN056	118.2	77.6	2.0	21.5	8.2	43.5	10.5	4.9	8.2	0.0	14.9	2.1	17.7	329.3
51	2/28/2001	3/1/2001	23	3	25CN018	74.6	48.0	0.3	15.8	1.3	33.2	13.7	4.6	5.3	0.0	1.0	63.6	4.3	265.7
52	2/28/2001	3/1/2001	23	3	25CN018	91.8	24.2	0.0	6.1	0.0	26.2	2.4	15.6	4.7	0.0	13.5	101.6	12.8	298.9
53	2/28/2001	3/1/2001	21	1	25BR289	85.2	65.5	1.5	21.6	14.8	62.6	41.1	10.9	9.7	0.0	12.4	3.3	13.2	341.8
54	2/28/2001	3/1/2001	21	1	25BR289	95.8	59.3	0.0	35.2	8.1	47.9	21.6	5.7	11.1	0.0	11.2	8.3	21.4	325.6
55	2/28/2001	3/1/2001	22	1	25CN226	109.4	43.6	0.2	12.3	11.6	60.2	43.7	3.3	9.7	168.3	6.1	7.6	16.1	482.1
56	2/28/2001	3/1/2001	22	1	25CN226	120.7	54.0	0.0	19.6	14.7	54.1	19.2	3.3	10.0	0.0	10.4	8.5	23.3	337.8
57	3/1/2001	3/2/2001	24	5	25CF004	37.4	23.4	0.2	10.7	6.2	23.0	21.7	5.2	2.9	0.0	18.5	2.0	4.6	155.8
58	3/1/2001	3/2/2001	24	1	25BR781	67.1	19.5	0.8	5.7	5.5	34.6	2.6	2.8	4.4	0.0	3.1	3.1	7.0	156.2
59	3/1/2001	3/2/2001	23	1	25BR245	86.8	40.1	0.0	4.8	40.5	60.5	23.5	18.3	3.5	0.0	4.9	26.4	12.3	321.6
60	3/1/2001	3/2/2001	21	1	25CN406	72.5	63.5	14.0	22.1	26.5	31.6	9.4	10.7	6.1	0.0	5.7	56.9	10.5	329.5
61	3/1/2001	3/2/2001	24	3	25BR302	80.4	46.3	0.2	5.3	5.5	76.0	8.2	5.8	11.7	0.0	59.2	5.3	7.3	311.2
62	3/1/2001	3/2/2001	23	3	25CN040	132.4	104.3	0.2	22.9	5.3	61.1	32.7	14.8	16.3	0.0	5.5	3.8	16.7	416.0
63	3/1/2001	3/2/2001	21	4	25CF181	74.4	28.8	0.0	20.1	35.0	27.2	6.4	3.8	10.3	0.0	24.6	29.2	14.7	274.5
64	3/1/2001	3/2/2001	21	2	25CF006	91.9	46.5	7.9	18.2	4.5	39.6	14.2	12.8	8.6	0.0	7.7	2.9	9.2	264.0
65	3/1/2001	3/2/2001	24	5	25CF004	91.7	92.2	7.7	17.2	6.5	37.7	101.3	8.2	6.4	0.0	2.4	9.6	10.4	391.3
66	3/1/2001	3/2/2001	24	1	25BR781	83.0	72.9	0.0	15.2	4.4	35.8	33.5	4.0	6.0	0.0	17.2	15.0	12.7	299.7
67	3/1/2001	3/2/2001	23	1	25BR245	96.3	57.8	0.1	9.5	6.2	52.7	23.3	8.4	7.2	0.0	4.9	21.3	10.5	298.2
68	3/1/2001	3/2/2001	21	1	25CN406	85.3	47.2	31.2	20.4	18.9	48.6	3.2	11.0	7.2	0.0	7.5	72.3	20.1	372.9
69	3/1/2001	3/2/2001	23	3	25CN040	59.6	33.6	3.2	40.3	2.0	46.1	3.1	1.7	3.7	0.0	7.0	6.5	12.8	219.6
70	3/1/2001	3/2/2001	21	4	25CF181	46.1	15.5	3.7	6.4	0.0	20.0	3.3	10.6	3.1	0.0	4.7	4.4	13.1	130.9
Total						6,973	3,552	321	1,325	733	3,375	1,151	696	692	293	733	1,132	960	21,934
Mean (Average)						99.6	50.7	4.6	18.9	10.5	48.2	16.4	9.9	9.9	4.2	10.5	16.2	13.7	313

Table B-2
Percentage of Each Primary Waste Category in Each Sample

Sample number	Waste collection date	Sampling & sorting date	Section	Route	Truck number	Paper	Food waste	Yard waste	Other degrad-ables	Bulk wood	Plastic	Textiles	Glass & ceram-ics	Metal	Large com-posites	Nonde-gradable fines	Other nonde-grad-ables	Unclass-ifiable fines	Total
1	2/24/2001	2/26/2001	24	3	25BR245	35.8%	19.2%	0.0%	4.3%	7.7%	13.5%	5.5%	1.4%	4.7%	0.0%	5.0%	0.7%	2.1%	99.9%
2	2/24/2001	2/26/2001	24	3	25BR245	31.5%	17.8%	0.3%	5.2%	8.9%	12.3%	3.9%	1.7%	6.3%	0.0%	5.9%	5.2%	1.1%	100.0%
3	2/24/2001	2/26/2001	22	4	25CN362	26.5%	17.6%	0.8%	10.3%	7.5%	17.0%	0.0%	3.5%	2.5%	0.0%	7.0%	3.4%	3.9%	99.9%
4	2/24/2001	2/26/2001	22	4	25CN362	21.7%	8.8%	13.7%	3.3%	0.9%	15.8%	1.9%	8.3%	2.6%	0.0%	7.1%	12.2%	3.6%	100.0%
5	2/24/2001	2/26/2001	21	2	25CF179	26.5%	20.0%	0.1%	7.8%	9.2%	13.2%	9.4%	2.7%	1.7%	0.0%	2.5%	4.9%	2.0%	100.0%
6	2/24/2001	2/26/2001	21	2	25CF179	33.6%	12.3%	0.0%	10.7%	1.1%	15.4%	7.2%	1.0%	3.1%	0.0%	6.1%	8.9%	0.6%	100.1%
7	2/24/2001	2/26/2001	24	1	25CF167	34.9%	18.1%	0.0%	4.4%	2.1%	13.6%	4.5%	3.6%	3.3%	0.0%	1.4%	10.3%	3.8%	100.0%
8	2/24/2001	2/26/2001	24	1	25CF167	31.3%	17.3%	0.0%	1.7%	3.3%	18.6%	2.9%	3.9%	4.0%	0.0%	0.5%	12.2%	4.3%	100.0%
9	2/24/2001	2/26/2001	23	3	25CN040	33.0%	19.1%	0.0%	6.7%	2.6%	16.3%	6.6%	4.0%	2.2%	0.0%	3.8%	1.6%	4.0%	100.0%
10	2/24/2001	2/26/2001	23	3	25CN040	34.4%	10.1%	10.0%	3.9%	2.4%	13.2%	3.6%	5.1%	5.6%	0.0%	1.9%	4.9%	5.0%	100.0%
11	2/24/2001	2/26/2001	22	1	25BR170	27.6%	17.7%	0.0%	12.1%	7.5%	12.5%	8.4%	4.6%	2.4%	0.0%	3.1%	0.3%	3.7%	100.0%
12	2/24/2001	2/26/2001	23	1	25CN056	35.3%	15.3%	0.0%	13.9%	1.7%	15.6%	1.9%	5.6%	2.2%	0.0%	4.1%	0.9%	3.7%	100.0%
13	2/24/2001	2/26/2001	23	1	25CN056	34.2%	17.2%	5.8%	8.3%	4.3%	11.6%	1.1%	4.8%	3.0%	0.0%	2.4%	3.2%	4.2%	100.0%
14	2/24/2001	2/26/2001	21	4	25CF181	34.6%	10.4%	11.2%	3.1%	2.0%	16.1%	7.1%	2.0%	2.5%	3.5%	2.2%	3.0%	2.3%	100.0%
15	2/26/2001	2/27/2001	24	6	25BF781	37.0%	17.5%	0.1%	2.8%	1.8%	18.8%	5.6%	1.7%	2.6%	0.0%	5.2%	1.6%	5.2%	100.0%
16	2/26/2001	2/27/2001	24	6	25BF781	36.9%	24.0%	0.0%	0.0%	1.9%	20.1%	2.3%	1.4%	3.6%	0.0%	0.4%	2.7%	6.6%	100.0%
17	2/26/2001	2/27/2001	22	3	25BR170	30.1%	14.2%	0.0%	15.0%	9.6%	12.7%	1.5%	0.7%	6.6%	0.0%	3.0%	0.7%	5.8%	100.0%
18	2/26/2001	2/27/2001	22	3	25BR170	30.1%	13.2%	0.3%	4.0%	6.3%	19.2%	4.6%	7.5%	4.5%	0.0%	3.9%	1.7%	4.7%	100.0%
19	2/26/2001	2/27/2001	21	5	25BR288	38.9%	12.9%	0.0%	4.7%	1.4%	16.2%	10.0%	1.2%	3.4%	0.0%	1.3%	3.3%	6.7%	100.0%
20	2/26/2001	2/27/2001	21	5	25BR288	34.2%	17.0%	0.5%	7.8%	0.1%	15.8%	1.1%	3.0%	2.9%	0.0%	3.4%	9.0%	5.2%	100.0%
21	2/26/2001	2/27/2001	23	2	25CN056	33.5%	15.0%	0.2%	10.3%	0.9%	21.4%	2.3%	4.4%	2.7%	0.0%	1.6%	1.8%	5.9%	100.0%
22	2/26/2001	2/27/2001	23	2	25CN056	36.0%	23.6%	0.0%	7.8%	0.2%	18.4%	2.0%	1.2%	2.8%	0.0%	1.3%	1.3%	5.2%	100.0%
23	2/26/2001	2/27/2001	24	4	25BR302	36.5%	17.4%	0.0%	6.3%	0.8%	18.9%	2.8%	2.6%	3.7%	1.4%	1.6%	3.6%	4.3%	100.0%
24	2/26/2001	2/27/2001	24	4	25BR302	31.6%	10.7%	0.6%	3.2%	4.0%	14.0%	2.0%	4.1%	3.1%	16.0%	3.7%	3.5%	3.4%	100.0%
25	2/26/2001	2/27/2001	24	2	25CF101	37.6%	18.8%	0.0%	5.3%	9.1%	11.6%	3.6%	1.8%	2.5%	0.0%	1.6%	1.7%	6.5%	100.0%
26	2/26/2001	2/27/2001	24	2	25CF101	40.4%	11.7%	0.1%	2.3%	2.2%	15.5%	9.4%	2.1%	2.0%	0.0%	0.2%	10.2%	3.9%	100.0%
27	2/26/2001	2/27/2001	21	3	25BR286	37.4%	7.0%	0.0%	4.2%	3.0%	14.5%	10.0%	1.0%	2.1%	0.0%	13.5%	2.6%	4.5%	99.8%
28	2/26/2001	2/27/2001	21	3	25BR286	23.1%	14.1%	5.0%	4.0%	4.3%	15.8%	3.5%	2.6%	7.4%	0.0%	0.3%	10.6%	9.3%	100.0%
29	2/27/2001	2/28/2001	24	3	25CF101	24.0%	17.3%	0.0%	10.1%	2.3%	17.7%	16.9%	1.9%	3.7%	0.0%	0.4%	1.8%	4.0%	100.2%
30	2/27/2001	2/28/2001	24	3	25CF101	39.9%	15.7%	0.8%	10.5%	1.3%	14.1%	5.0%	2.6%	5.1%	0.0%	1.0%	0.6%	3.3%	100.0%
31	2/27/2001	2/28/2001	23	1	25CN018	34.9%	10.3%	12.6%	2.1%	4.6%	19.8%	5.9%	1.7%	1.7%	0.0%	0.8%	3.5%	2.1%	100.0%
32	2/27/2001	2/28/2001	23	1	25CN018	36.0%	11.9%	0.0%	6.0%	1.0%	17.1%	0.9%	3.7%	2.7%	9.1%	0.5%	7.1%	4.1%	100.0%
33	2/27/2001	2/28/2001	21	4	25CF179	33.0%	10.5%	0.0%	2.6%	6.1%	21.0%	5.2%	10.2%	5.1%	0.0%	0.0%	3.0%	3.2%	100.0%
34	2/27/2001	2/28/2001	21	4	25CF179	36.6%	18.6%	0.8%	4.4%	5.2%	11.1%	2.6%	11.0%	2.0%	0.0%	0.9%	0.7%	6.0%	100.0%
35	2/27/2001	2/28/2001	21	2	25CN362	37.1%	14.0%	2.7%	6.7%	2.6%	12.3%	10.5%	2.3%	3.7%	0.0%	1.7%	0.7%	5.7%	100.0%
36	2/27/2001	2/28/2001	21	2	25CN362	31.9%	8.0%	8.6%	3.8%	3.1%	11.9%	1.9%	3.0%	1.9%	0.0%	2.5%	16.7%	6.8%	100.0%
37	2/27/2001	2/28/2001	22	5	25BR170	29.1%	13.7%	0.7%	1.6%	0.1%	14.2%	4.7%	2.1%	8.7%	0.0%	19.9%	0.2%	4.9%	100.0%
38	2/27/2001	2/28/2001	22	5	25BR170	28.2%	14.8%	0.3%	7.5%	7.9%	12.5%	3.3%	3.4%	3.9%	0.0%	8.9%	4.9%	4.4%	100.0%
39	2/27/2001	2/28/2001	23	4	25CN039	33.9%	15.6%	0.0%	5.7%	0.9%	16.2%	4.3%	2.1%	2.7%	5.8%	2.7%	6.1%	3.9%	100.0%
40	2/27/2001	2/28/2001	23	4	25CN039	41.6%	16.3%	0.6%	2.7%	0.0%	10.7%	13.0%	1.9%	1.6%	0.0%	2.0%	5.9%	3.7%	100.0%
41	2/27/2001	2/28/2001	22	2	25CF180	31.2%	11.9%	11.4%	0.0%	1.6%	21.4%	5.6%	2.2%	4.4%	0.0%	3.1%	0.2%	7.1%	100.0%
42	2/27/2001	2/28/2001	22	2	25CF180	28.4%	15.1%	0.0%	6.9%	6.3%	12.1%	5.5%	1.3%	3.3%	0.0%	3.7%	13.2%	4.2%	100.0%
43	2/28/2001	3/1/2001	24	2	25BR781	38.9%	16.2%	0.0%	5.8%	1.1%	20.9%	4.3%	3.5%	4.8%	0.0%	0.2%	2.7%	1.6%	100.0%
44	2/28/2001	3/1/2001	24	2	25BR781	34.5%	26.5%	0.3%	6.3%	0.7%	12.9%	1.1%	2.6%	3.7%	0.0%	2.3%	6.1%	3.0%	100.0%
45	2/28/2001	3/1/2001	22	3	25BR170	30.9%	13.5%	0.1%	9.2%	3.9%	17.1%	8.9%	2.2%	2.5%	0.0%	5.0%	1.9%	4.8%	100.0%
46	2/28/2001	3/1/2001	22	3	25BR170	39.4%	17.5%	0.0%	8.4%	3.2%	14.2%	3.5%	2.5%	2.9%	0.0%	2.8%	2.8%	2.8%	100.0%
47	2/28/2001	3/1/2001	21	4	25BR166	35.2%	18.5%	0.9%	9.1%	1.6%	16.7%	1.4%	5.0%	2.8%	0.0%	2.9%	1.8%	4.0%	100.0%
48	2/28/2001	3/1/2001	21	4	25BR166	33.7%	26.1%	0.0%	4.4%	2.6%	18.6%	3.3%	2.2%	2.7%	0.0%	1.1%	2.2%	3.2%	100.0%
49	2/28/2001	3/1/2001	22	6	25CN056	29.5%	14.3%	0.0%	10.5%	1.1%	16.9%	3.1%	14.3%	2.3%	0.0%	0.3%	2.5%	5.3%	100.0%
50	2/28/2001	3/1/2001	22	6	25CN056	35.9%	23.6%	0.6%	6.5%	2.5%	13.2%	3.2%	1.5%	2.5%	0.0%	4.5%	0.6%	5.4%	100.0%
51	2/28/2001	3/1/2001	23	3	25CN018	28.1%	18.1%	0.1%	5.9%	0.5%	12.5%	5.2%	1.7%	2.0%	0.0%	0.4%	23.9%	1.6%	100.0%
52	2/28/2001	3/1/2001	23	3	25CN018	30.7%	8.1%	0.0%	2.0%	0.0%	8.8%	0.8%	5.2%	1.6%	0.0%	4.5%	34.0%	4.3%	100.0%
53	2/28/2001	3/1/2001	21	1	25BR289	24.9%	19.2%	0.4%	6.3%	4.3%	18.3%	12.0%	3.2%	2.8%	0.0%	3.6%	1.0%	3.9%	100.0%
54	2/28/2001	3/1/2001	21	1	25BR289	29.4%	18.2%	0.0%	10.8%	2.5%	14.7%	6.6%	1.8%	3.4%	0.0%	3.4%	2.5%	6.6%	100.0%
55	2/28/2001	3/1/2001	22	1	25CN226	22.7%	9.0%	0.0%	2.6%	2.4%	12.5%	9.1%	0.7%	2.0%	32.8%	1.3%	1.6%	3.3%	100.0%
56	2/28/2001	3/1/2001	22	1	25CN226	35.7%	16.0%	0.0%	5.8%	4.4%	16.0%	5.7%	1.0%	3.0%	0.0%	3.1%	2.5%	6.9%	100.0%
57	3/1/2001	3/2/2001	24	5	25CF004	24.0%	15.0%	0.1%	6.9%	4.0%	14.8%	13.9%	3.3%	1.9%	0.0%	11.9%	1.3%	3.0%	100.0%
58	3/1/2001	3/2/2001	24	1	25BR781	43.0%	12.5%	0.5%	3.6%	3.5%	22.2%	1.7%	1.8%	2.8%	0.0%	2.0%	2.0%	4.5%	100.0%
59	3/1/2001	3/2/2001	23	1	25BR245	27.0%	12.5%	0.0%	1.5%	12.6%	18.8%	7.3%	5.7%	1.1%	0.0%	1.5%	8.2%	3.8%	100.0%
60	3/1/2001	3/2/2001	21	1	25CN406	22.0%	19.3%	4.2%	6.7%	8.0%	9.6%	2.9%	3.2%	1.9%	0.0%	1.7%	17.3%	3.2%	100.0%
61	3/1/2001	3/2/2001	24	3	25BR302	25.8%	14.9%	0.1%	1.7%	1.8%	24.4%	2.6%	1.9%	3.8%	0.0%	19.0%	1.7%	2.3%	100.0%
62	3/1/2001	3/2/2001	23	3	25CN040	31.8%	25.1%	0.0%	5.5%	1.3%	14.7%	7.9%	3.6%	3.9%	0.0%	1.3%	0.9%	4.0%	100.0%
63	3/1/2001	3/2/2001	21	4	25CF181	27.1%	10.5%	0.0%	7.3%	12.8%	9.9%	2.3%	1.4%	3.8%	0.0%	9.0%	10.6%	5.4%	100.0%
64	3/1/2001	3/2/2001	21	2	25CF008	34.8%	17.6%	3.0%	6.9%	1.7%	15.0%	5.4%	4.8%	3.3%	0.0%	2.9%	1.1%	3.5%	100.0%
65	3/1/2001	3/2/2001	24	5	25CF004	23.4%	23.6%	2.0%	4.4%	1.7%	9.6%	25.9%	2.1%	1.6%	0.0%	0.6%	2.5%	2.7%	100.0%
66	3/1/2001	3/2/2001	24	1	25BR781	27.7%	24.3%	0.0%	5.1%	1.5%	11.9%	11.2%	1.3%	2.0%	0.0%	5.7%	5.0%	4.2%	100.0%
67	3/1/2001	3/2/2001	23	1	25BR245	32.3%	19.4%	0.0%	3.2%	2.1%	17.7%	7.8%	2.8%	2.4%	0.0%	1.6%	7.1%	3.5%	100.0%
68	3/1/2001	3/2/2001	21	1	25CN406	22.9%	12.7%	8.4%	5.5%	5.1%	13.0%	0.9%	2.9%	1.9%	0.0%	2.0%	19.4%	5.4%	100.0%
69	3/1/2001	3/2/2001	23	3	25CN040	27.1%	15.3%	1.5%	18.4%	0.9%	21.0%	1.4%	0.8%	1.7%	0.0%	3.2%	3.0%	5.8%	100.0%
70	3/1/2001	3/2/2001	21	4	25CF181	35.2%	11.8%	2.8%	4.9%	0.0%	15.3%	2.5%	8.1%	2.4%	0.0%	3.6%	3.3%	10.0%	99.9%
Mean (Average)						32.1%	15.9%	1.6%	6.0%	3.4%	15.4%	5.3%	3.3%	3.1%	1.0%	3.5%	5.1%	4.3%	100.0%
Std. Deviation						5.2%	4.5%	3.4%	3.5%	3.0%	3.4%	4.3%	2.5%	1.4%	4.5%	3.8%	6.0%	1.7%	---

Table B-3
Pounds of Each Secondary Waste Category in Metal and "Other Nondegradables"

Sample number	Waste collection date	Sampling & sorting date	Section	Route	Alumi-num	Brass	Copper	Lead	Pot metal	Ferrous metal	Elec-tronics	Other elec-trical devices	Insu-lated wiring	Light bulbs	Fluores-cent tubes	Gypsum board	Batteries	Other "other nonde-gradables"
1	2/24/2001	2/26/2001	24	3	1.7	0.0	0.012	0.0	0.0	9.1	0.0	0.7	0.0	0.0	0.0	0.0	1.08	0.1
2	2/24/2001	2/26/2001	24	3	1.0	0.1	0.0	0.0	0.0	19.7	0.9	15.6	0.0	0.05	0.0	0.2	0.00	0.3
3	2/24/2001	2/26/2001	22	4	1.6	0.5	0.0	0.0	0.3	4.2	0.0	1.9	0.2	0.2	0.0	0.0	0.63	6.4
4	2/24/2001	2/26/2001	22	4	2.7	0.0	0.2	0.0	0.4	7.3	0.1	1.8	2.9	0.1	0.0	19.5	0.39	24.8
5	2/24/2001	2/26/2001	21	2	1.8	0.1	0.0	0.0	0.6	3.3	3.1	2.8	0.4	0.1	0.0	10.5	0.15	0.0
6	2/24/2001	2/26/2001	21	2	1.0	0.1	0.0	0.0	0.0	6.6	0.0	15.3	0.0	0.0	0.0	0.0	0.56	5.8
7	2/24/2001	2/26/2001	24	1	1.6	1.3	0.0	0.0	0.3	8.0	0.0	1.3	0.4	0.1	0.0	27.8	0.03	4.9
8	2/24/2001	2/26/2001	24	1	2.3	0.3	0.0	0.0	0.0	9.7	0.7	0.0	0.05	0.0	0.0	0.0	0.73	36.1
9	2/24/2001	2/26/2001	23	3	2.4	0.1	0.0	0.0	0.0	4.1	0.3	2.4	0.1	0.05	0.0	0.0	0.79	1.9
10	2/24/2001	2/26/2001	23	3	1.6	0.4	0.0	0.0	0.0	15.8	1.5	0.0	0.1	0.05	0.0	9.6	0.54	3.7
11	2/24/2001	2/26/2001	22	1	4.5	0.0	0.0	0.0	0.0	6.5	0.3	0.0	0.0	0.0	0.0	0.0	0.00	1.1
12	2/24/2001	2/26/2001	23	1	1.2	0.3	0.0	0.0	0.0	4.7	0.0	1.6	0.0	0.05	0.0	0.0	0.15	0.8
13	2/24/2001	2/26/2001	23	1	2.0	0.0	0.0	0.0	0.0	6.4	0.0	0.9	0.0	0.05	0.0	0.0	0.15	7.7
14	2/24/2001	2/26/2001	21	4	1.4	0.0	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.00	8.3
15	2/26/2001	2/27/2001	24	6	4.6	0.7	0.006	0.5	0.0	8.6	2.1	5.1	0.6	0.05	0.0	0.0	0.30	0.5
16	2/26/2001	2/27/2001	24	6	3.7	0.2	0.0	0.0	0.0	12.7	1.3	0.1	0.0	0.05	0.0	7.8	1.05	2.1
17	2/26/2001	2/27/2001	22	3	2.2	0.4	0.0	0.0	0.0	29.3	0.0	0.1	0.0	0.3	0.0	0.0	1.91	1.3
18	2/26/2001	2/27/2001	22	3	2.7	0.0	0.0	0.0	0.0	8.9	0.4	0.0	1.9	0.05	0.0	0.0	0.05	1.9
19	2/26/2001	2/27/2001	21	5	3.4	0.5	0.0	0.0	0.0	11.5	2.1	3.6	0.0	0.2	0.0	0.0	0.17	8.6
20	2/26/2001	2/27/2001	21	5	2.6	0.2	0.0	0.0	0.0	13.6	0.2	0.1	0.2	0.05	0.0	47.2	0.05	3.1
21	2/26/2001	2/27/2001	23	2	6.0	0.0	0.0	0.0	0.0	8.0	1.5	0.0	0.0	0.05	0.0	0.0	1.08	6.6
22	2/26/2001	2/27/2001	23	2	4.8	0.7	0.0	0.0	0.0	6.1	0.05	0.0	0.05	0.1	0.0	0.0	0.35	5.1
23	2/26/2001	2/27/2001	24	4	2.5	0.0	0.004	0.0	0.0	12.2	4.1	2.1	0.1	0.05	0.0	0.0	0.45	7.6
24	2/26/2001	2/27/2001	24	4	3.8	0.0	0.0	0.0	0.05	10.5	1.1	0.0	0.0	0.05	0.0	0.0	0.03	14.8
25	2/26/2001	2/27/2001	24	2	0.7	0.1	0.0	0.0	0.0	3.9	2.5	0.5	0.05	0.05	0.0	0.0	0.00	0.0
26	2/26/2001	2/27/2001	24	2	1.2	0.0	0.2	0.1	0.0	2.3	16.8	1.7	0.0	0.0	0.0	0.0	0.00	0.6
27	2/26/2001	2/27/2001	21	3	0.4	0.0	0.0	0.0	0.0	3.0	0.0	0.1	0.5	0.0	0.0	0.0	1.01	2.9
28	2/26/2001	2/27/2001	21	3	2.8	0.05	0.0	0.0	0.0	22.1	2.6	0.1	0.4	0.1	0.0	30.5	0.25	1.5
29	2/27/2001	2/28/2001	24	3	1.9	0.0	0.024	0.0	0.0	8.1	0.0	0.0	0.0	0.05	0.0	2.2	0.87	1.5
30	2/27/2001	2/28/2001	24	3	2.9	0.0	0.1	0.0	0.0	5.0	0.0	0.0	0.2	0.0	0.0	0.6	0.10	0.0
31	2/27/2001	2/28/2001	23	1	0.2	0.0	0.0	0.0	0.0	1.5	1.2	0.1	1.9	0.2	0.0	0.0	0.05	0.2
32	2/27/2001	2/28/2001	23	1	1.3	0.0	0.006	0.0	0.0	3.4	9.8	0.0	0.5	0.1	0.0	0.5	0.56	0.8
33	2/27/2001	2/28/2001	21	4	2.1	0.0	0.0	0.0	0.0	9.3	0.0	2.1	0.05	0.05	0.0	0.0	0.10	4.4
34	2/27/2001	2/28/2001	21	4	2.2	0.0	0.0	0.0	0.0	4.7	0.0	0.5	0.2	0.05	0.0	0.0	0.17	1.5
35	2/27/2001	2/28/2001	21	2	4.8	0.0	0.0	0.0	0.0	6.2	0.0	0.0	0.05	0.05	0.0	1.3	0.10	0.6
36	2/27/2001	2/28/2001	21	2	1.7	0.05	0.0	0.0	0.0	5.0	2.4	41.4	0.0	0.1	0.0	0.0	0.41	13.1
37	2/27/2001	2/28/2001	22	5	1.8	0.0	0.0	0.0	0.0	22.4	0.0	0.0	0.0	0.1	0.0	0.0	0.05	0.5
38	2/27/2001	2/28/2001	22	5	1.0	0.0	0.0	0.0	0.0	9.3	0.6	6.0	0.0	0.05	0.0	0.0	0.10	6.1
39	2/27/2001	2/28/2001	23	4	2.8	0.05	0.03	0.0	0.0	11.1	25.2	0.3	0.0	0.05	0.0	2.7	0.38	3.7
40	2/27/2001	2/28/2001	23	4	1.0	0.0	0.0	0.0	0.0	2.9	0.1	6.7	0.0	0.2	0.0	0.0	0.10	7.2
41	2/27/2001	2/28/2001	22	2	1.9	0.0	0.0	0.0	0.0	6.7	0.0	0.0	0.3	0.0	0.0	0.0	0.00	0.0
42	2/27/2001	2/28/2001	22	2	1.7	0.0	0.0	0.0	0.0	7.1	0.3	0.1	0.2	0.05	0.0	31.5	0.18	3.3
43	2/28/2001	3/1/2001	24	2	7.3	0.0	0.0	0.0	0.0	5.7	0.0	0.0	0.05	0.1	0.0	0.0	0.15	7.1
44	2/28/2001	3/1/2001	24	2	4.3	0.0	0.0	0.0	0.0	7.3	5.4	5.1	0.1	0.2	0.0	4.4	0.15	3.7
45	2/28/2001	3/1/2001	22	3	2.7	0.0	0.0	0.0	0.8	5.3	5.8	0.0	0.0	0.05	0.0	0.0	0.58	0.0
46	2/28/2001	3/1/2001	22	3	2.8	0.1	0.006	0.0	0.0	6.9	2.8	0.2	0.05	0.05	0.0	0.0	0.72	5.5
47	2/28/2001	3/1/2001	21	4	2.8	0.0	0.0	0.0	0.0	5.6	0.0	0.4	1.5	1.0	0.0	0.1	0.50	1.9
48	2/28/2001	3/1/2001	21	4	3.9	0.0	0.0	0.0	0.0	4.9	1.7	1.3	0.5	0.1	0.0	0.0	0.24	3.1
49	2/28/2001	3/1/2001	22	6	1.2	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.1	0.2	0.0	0.6	0.50	4.3
50	2/28/2001	3/1/2001	22	6	3.2	0.0	0.0	0.0	0.1	4.9	0.0	0.1	0.1	0.5	0.0	0.5	0.35	0.6
51	2/28/2001	3/1/2001	23	3	1.7	0.0	0.0	0.0	0.0	3.6	0.0	0.0	0.05	0.0	0.0	0.0	0.40	63.2
52	2/28/2001	3/1/2001	23	3	1.9	0.6	0.0	0.0	0.0	2.2	2.9	11.1	0.0	0.0	0.0	6.4	1.25	79.9
53	2/28/2001	3/1/2001	21	1	2.2	0.0	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.05	0.0	0.0	0.00	3.3
54	2/28/2001	3/1/2001	21	1	2.7	0.1	0.006	0.0	0.0	8.3	0.0	0.0	0.0	0.05	0.0	5.6	0.00	2.7
55	2/28/2001	3/1/2001	22	1	2.4	0.1	0.1	0.0	0.0	7.1	0.4	0.05	0.0	0.05	0.0	3.6	0.20	3.3
56	2/28/2001	3/1/2001	22	1	4.3	0.0	0.0	0.0	0.0	5.7	0.9	2.7	0.05	0.05	0.0	0.5	0.40	3.9
57	3/1/2001	3/2/2001	24	5	1.3	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.1	0.0	0.0	0.45	1.5
58	3/1/2001	3/2/2001	24	1	2.3	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.1	0.0	1.5	0.00	1.5
59	3/1/2001	3/2/2001	23	1	0.2	1.1	0.0	0.0	0.0	2.2	0.0	5.6	0.0	0.05	0.0	16.2	0.00	4.6
60	3/1/2001	3/2/2001	21	1	1.8	0.0	0.0	0.0	0.0	4.3	0.3	0.0	0.0	0.05	0.0	1.1	0.10	55.4
61	3/1/2001	3/2/2001	24	3	3.2	0.4	0.078	0.0	0.0	8.0	0.3	0.8	0.0	0.05	0.0	0.0	0.32	3.9
62	3/1/2001	3/2/2001	23	3	3.0	0.1	0.0	0.0	0.0	13.3	1.0	1.0	0.6	0.05	0.0	0.0	0.55	0.6
63	3/1/2001	3/2/2001	21	4	1.5	0.05	0.1	0.0	0.0	8.7	0.4	0.1	2.6	0.3	0.0	2.6	0.03	23.2
64	3/1/2001	3/2/2001	21	2	1.7	0.05	0.0	0.0	0.0	6.9	1.8	0.1	0.05	0.0	0.0	0.0	0.00	1.0
65	3/1/2001	3/2/2001	24	5	1.8	0.0	0.0	0.0	0.0	4.6	0.0	6.9	0.0	0.1	0.0	0.0	0.03	2.6
66	3/1/2001	3/2/2001	24	1	1.5	0.0	0.0	0.0	0.0	4.5	0.1	1.1	0.0	0.1	0.0	2.5	0.74	10.5
67	3/1/2001	3/2/2001	23	1	2.8	0.05	0.0	0.0	0.0	4.4	0.2	0.2	0.0	0.05	0.0	20.5	0.20	0.2
68	3/1/2001	3/2/2001	21	1	1.7	0.0	0.0	0.0	0.0	5.5	1.7	0.9	0.1	0.0	0.0	64.2	0.05	5.3
69	3/1/2001	3/2/2001	23	3	1.4	0.0	0.0	0.0	0.0	2.3	0.2	0.0	0.0	0.05	0.0	0.0	0.00	6.3
70	3/1/2001	3/2/2001	21	4	0.6	0.3	0.0	0.0	0.0	2.2	0.05	0.1	0.05	1.3	0.0	0.0	0.41	2.5
Total					164	9.0	0.9	0.6	2.5	516	107	153	17	8	0.0	322	23	502
Mean (Average)					2.3	0.13	0.01	0.009	0.04	7.4	1.5	2.2	0.25	0.11	0.0	4.6	0.33	7.2

Table B-4
Percentage of Each Secondary Waste Category in Metal and "Other Nondegradables"

Sample number	Waste collection date	Sampling & sorting date	Section	Route	Alumi-num	Brass	Copper	Lead	Pot metal	Ferrous metal	Elec-tronics	Other elec-trical devices	Insu-lated wiring	Light bulbs	Fluores-cent tubes	Gypsum board	Batteries	Other "other nonde-gradables"
1	2/24/2001	2/26/2001	24	3	0.7%	0.00%	0.01%	0.00%	0.00%	4.0%	0.00%	0.31%	0.00%	0.00%	0.0%	0.0%	0.39%	0.04%
2	2/24/2001	2/26/2001	24	3	0.3%	0.03%	0.00%	0.00%	0.00%	6.0%	0.27%	4.8%	0.00%	0.02%	0.0%	0.1%	0.00%	0.08%
3	2/24/2001	2/26/2001	22	4	0.6%	0.19%	0.00%	0.00%	0.09%	1.6%	0.00%	0.72%	0.08%	0.08%	0.0%	0.0%	0.15%	2.4%
4	2/24/2001	2/26/2001	22	4	0.7%	0.00%	0.05%	0.00%	0.10%	1.8%	0.02%	0.44%	0.71%	0.02%	0.0%	4.8%	0.10%	6.1%
5	2/24/2001	2/26/2001	21	2	0.5%	0.03%	0.00%	0.00%	0.17%	0.9%	0.89%	0.80%	0.11%	0.03%	0.0%	3.0%	0.04%	0.0%
6	2/24/2001	2/26/2001	21	2	0.4%	0.04%	0.00%	0.00%	0.00%	2.7%	0.00%	6.2%	0.00%	0.00%	0.0%	0.0%	0.29%	2.4%
7	2/24/2001	2/26/2001	24	1	0.5%	0.39%	0.00%	0.00%	0.09%	2.4%	0.00%	0.39%	0.12%	0.03%	0.0%	8.3%	0.01%	1.5%
8	2/24/2001	2/26/2001	24	1	0.7%	0.10%	0.00%	0.00%	0.00%	3.1%	0.23%	0.00%	0.02%	0.00%	0.0%	0.0%	0.23%	11.7%
9	2/24/2001	2/26/2001	23	3	0.8%	0.03%	0.00%	0.00%	0.00%	1.3%	0.10%	0.79%	0.03%	0.02%	0.0%	0.0%	0.23%	0.6%
10	2/24/2001	2/26/2001	23	3	0.5%	0.13%	0.00%	0.00%	0.00%	4.9%	0.47%	0.00%	0.03%	0.02%	0.0%	3.0%	0.19%	1.1%
11	2/24/2001	2/26/2001	22	1	1.0%	0.00%	0.00%	0.00%	0.00%	1.4%	0.07%	0.00%	0.00%	0.00%	0.0%	0.0%	0.00%	0.2%
12	2/24/2001	2/26/2001	23	1	0.4%	0.10%	0.00%	0.00%	0.00%	1.6%	0.00%	0.56%	0.00%	0.02%	0.0%	0.0%	0.05%	0.3%
13	2/24/2001	2/26/2001	23	1	0.7%	0.00%	0.00%	0.00%	0.00%	2.3%	0.00%	0.32%	0.00%	0.02%	0.0%	0.0%	0.05%	2.8%
14	2/24/2001	2/26/2001	21	4	0.5%	0.00%	0.00%	0.00%	0.00%	1.9%	0.00%	0.00%	0.00%	0.00%	0.0%	0.0%	0.00%	3.0%
15	2/26/2001	2/27/2001	24	6	0.8%	0.12%	0.00%	0.09%	0.00%	1.6%	0.38%	0.92%	0.11%	0.01%	0.0%	0.0%	0.05%	0.08%
16	2/26/2001	2/27/2001	24	6	0.8%	0.04%	0.00%	0.00%	0.00%	2.8%	0.29%	0.02%	0.00%	0.01%	0.0%	1.7%	0.24%	0.5%
17	2/26/2001	2/27/2001	22	3	0.5%	0.08%	0.00%	0.00%	0.00%	6.1%	0.00%	0.02%	0.00%	0.06%	0.0%	0.0%	0.35%	0.3%
18	2/26/2001	2/27/2001	22	3	1.0%	0.00%	0.00%	0.00%	0.00%	3.4%	0.15%	0.00%	0.74%	0.02%	0.0%	0.0%	0.02%	0.7%
19	2/26/2001	2/27/2001	21	5	0.8%	0.11%	0.00%	0.00%	0.00%	2.6%	0.47%	0.80%	0.00%	0.04%	0.0%	0.0%	0.04%	1.9%
20	2/26/2001	2/27/2001	21	5	0.5%	0.04%	0.00%	0.00%	0.00%	2.4%	0.04%	0.02%	0.04%	0.01%	0.0%	8.4%	0.01%	0.6%
21	2/26/2001	2/27/2001	23	2	1.2%	0.00%	0.00%	0.00%	0.00%	1.5%	0.29%	0.00%	0.00%	0.01%	0.0%	0.0%	0.19%	1.3%
22	2/26/2001	2/27/2001	23	2	1.1%	0.17%	0.00%	0.00%	0.00%	1.5%	0.01%	0.00%	0.01%	0.02%	0.0%	0.0%	0.08%	1.2%
23	2/26/2001	2/27/2001	24	4	0.6%	0.00%	0.00%	0.00%	0.00%	3.1%	1.0%	0.53%	0.03%	0.01%	0.0%	0.0%	0.08%	1.9%
24	2/26/2001	2/27/2001	24	4	0.8%	0.00%	0.00%	0.00%	0.01%	2.3%	0.24%	0.00%	0.00%	0.01%	0.0%	0.0%	0.01%	3.3%
25	2/26/2001	2/27/2001	24	2	0.4%	0.05%	0.00%	0.00%	0.00%	2.1%	1.3%	0.27%	0.03%	0.03%	0.0%	0.0%	0.00%	0.0%
26	2/26/2001	2/27/2001	24	2	0.6%	0.00%	0.11%	0.05%	0.00%	1.2%	9.0%	0.91%	0.00%	0.00%	0.0%	0.0%	0.00%	0.3%
27	2/26/2001	2/27/2001	21	3	0.2%	0.00%	0.00%	0.00%	0.00%	1.9%	0.00%	0.06%	0.31%	0.00%	0.0%	0.0%	0.43%	1.8%
28	2/26/2001	2/27/2001	21	3	0.8%	0.01%	0.00%	0.00%	0.00%	6.6%	0.77%	0.03%	0.12%	0.03%	0.0%	9.1%	0.07%	0.4%
29	2/27/2001	2/28/2001	24	3	0.7%	0.00%	0.01%	0.00%	0.00%	3.0%	0.00%	0.00%	0.00%	0.02%	0.0%	0.8%	0.48%	0.5%
30	2/27/2001	2/28/2001	24	3	1.9%	0.00%	0.06%	0.00%	0.00%	3.2%	0.00%	0.00%	0.13%	0.00%	0.0%	0.4%	0.06%	0.0%
31	2/27/2001	2/28/2001	23	1	0.2%	0.00%	0.00%	0.00%	0.00%	1.5%	1.2%	0.10%	1.8%	0.19%	0.0%	0.0%	0.05%	0.15%
32	2/27/2001	2/28/2001	23	1	0.7%	0.00%	0.00%	0.00%	0.00%	2.0%	5.6%	0.00%	0.29%	0.06%	0.0%	0.3%	0.35%	0.5%
33	2/27/2001	2/28/2001	21	4	0.9%	0.00%	0.00%	0.00%	0.00%	4.2%	0.00%	0.95%	0.02%	0.02%	0.0%	0.0%	0.05%	2.0%
34	2/27/2001	2/28/2001	21	4	0.7%	0.00%	0.00%	0.00%	0.00%	1.4%	0.00%	0.15%	0.06%	0.01%	0.0%	0.0%	0.06%	0.4%
35	2/27/2001	2/28/2001	21	2	1.6%	0.00%	0.00%	0.00%	0.00%	2.1%	0.00%	0.00%	0.02%	0.02%	0.0%	0.4%	0.03%	0.2%
36	2/27/2001	2/28/2001	21	2	0.5%	0.01%	0.00%	0.00%	0.00%	1.4%	0.70%	12.0%	0.00%	0.03%	0.0%	0.0%	0.12%	3.8%
37	2/27/2001	2/28/2001	22	5	0.6%	0.00%	0.00%	0.00%	0.00%	8.0%	0.00%	0.00%	0.00%	0.04%	0.0%	0.0%	0.02%	0.16%
38	2/27/2001	2/28/2001	22	5	0.4%	0.00%	0.00%	0.00%	0.00%	3.5%	0.23%	2.3%	0.00%	0.02%	0.0%	0.0%	0.04%	2.3%
39	2/27/2001	2/28/2001	23	4	0.5%	0.01%	0.01%	0.00%	0.00%	2.1%	4.8%	0.06%	0.00%	0.01%	0.0%	0.5%	0.07%	0.7%
40	2/27/2001	2/28/2001	23	4	0.4%	0.00%	0.00%	0.00%	0.00%	1.2%	0.04%	2.8%	0.00%	0.08%	0.0%	0.0%	0.04%	2.9%
41	2/27/2001	2/28/2001	22	2	1.0%	0.00%	0.00%	0.00%	0.00%	3.4%	0.00%	0.00%	0.15%	0.00%	0.0%	0.0%	0.00%	0.0%
42	2/27/2001	2/28/2001	22	2	0.6%	0.00%	0.00%	0.00%	0.00%	2.6%	0.11%	0.04%	0.07%	0.02%	0.0%	11.6%	0.07%	1.2%
43	2/28/2001	3/1/2001	24	2	2.7%	0.00%	0.00%	0.00%	0.00%	2.1%	0.00%	0.00%	0.02%	0.04%	0.0%	0.0%	0.06%	2.6%
44	2/28/2001	3/1/2001	24	2	1.4%	0.00%	0.00%	0.00%	0.00%	2.3%	1.7%	1.6%	0.03%	0.06%	0.0%	1.4%	0.05%	1.2%
45	2/28/2001	3/1/2001	22	3	0.8%	0.00%	0.00%	0.00%	0.23%	1.5%	1.7%	0.00%	0.00%	0.01%	0.0%	0.0%	0.17%	0.0%
46	2/28/2001	3/1/2001	22	3	0.8%	0.03%	0.00%	0.00%	0.00%	2.0%	0.83%	0.06%	0.01%	0.01%	0.0%	0.0%	0.24%	1.6%
47	2/28/2001	3/1/2001	21	4	0.9%	0.00%	0.00%	0.00%	0.00%	1.9%	0.00%	0.13%	0.50%	0.33%	0.0%	0.0%	0.17%	0.6%
48	2/28/2001	3/1/2001	21	4	1.2%	0.00%	0.00%	0.00%	0.00%	1.5%	0.52%	0.40%	0.15%	0.03%	0.0%	0.0%	0.09%	1.0%
49	2/28/2001	3/1/2001	22	6	0.5%	0.00%	0.00%	0.00%	0.00%	1.8%	0.00%	0.00%	0.04%	0.09%	0.0%	0.3%	0.22%	1.9%
50	2/28/2001	3/1/2001	22	6	1.0%	0.00%	0.00%	0.00%	0.03%	1.5%	0.00%	0.03%	0.03%	0.15%	0.0%	0.2%	0.11%	0.2%
51	2/28/2001	3/1/2001	23	3	0.6%	0.00%	0.00%	0.00%	0.00%	1.4%	0.00%	0.00%	0.02%	0.00%	0.0%	0.0%	0.15%	23.8%
52	2/28/2001	3/1/2001	23	3	0.6%	0.20%	0.00%	0.00%	0.00%	0.7%	0.97%	3.7%	0.00%	0.00%	0.0%	2.1%	0.44%	26.7%
53	2/28/2001	3/1/2001	21	1	0.6%	0.00%	0.00%	0.00%	0.00%	2.2%	0.00%	0.00%	0.00%	0.01%	0.0%	0.0%	0.00%	1.0%
54	2/28/2001	3/1/2001	21	1	0.8%	0.03%	0.00%	0.00%	0.00%	2.5%	0.00%	0.00%	0.00%	0.02%	0.0%	1.7%	0.00%	0.8%
55	2/28/2001	3/1/2001	22	1	0.5%	0.02%	0.02%	0.00%	0.00%	1.5%	0.08%	0.01%	0.00%	0.01%	0.0%	0.7%	0.04%	0.7%
56	2/28/2001	3/1/2001	22	1	1.3%	0.00%	0.00%	0.00%	0.00%	1.7%	0.27%	0.80%	0.01%	0.01%	0.0%	0.1%	0.09%	1.2%
57	3/1/2001	3/2/2001	24	5	0.8%	0.00%	0.00%	0.00%	0.00%	1.0%	0.00%	0.00%	0.00%	0.06%	0.0%	0.0%	0.29%	0.9%
58	3/1/2001	3/2/2001	24	1	1.5%	0.00%	0.00%	0.00%	0.00%	1.3%	0.00%	0.00%	0.00%	0.06%	0.0%	1.0%	0.00%	1.0%
59	3/1/2001	3/2/2001	23	1	0.1%	0.34%	0.00%	0.00%	0.00%	0.7%	0.00%	1.7%	0.00%	0.02%	0.0%	5.0%	0.00%	1.4%
60	3/1/2001	3/2/2001	21	1	0.5%	0.00%	0.00%	0.00%	0.00%	1.3%	0.09%	0.00%	0.00%	0.02%	0.0%	0.3%	0.03%	16.8%
61	3/1/2001	3/2/2001	24	3	1.0%	0.13%	0.03%	0.00%	0.00%	2.6%	0.10%	0.26%	0.00%	0.02%	0.0%	0.0%	0.10%	1.2%
62	3/1/2001	3/2/2001	23	3	0.7%	0.01%	0.00%	0.00%	0.00%	3.2%	0.24%	0.24%	0.14%	0.01%	0.0%	0.0%	0.14%	0.13%
63	3/1/2001	3/2/2001	21	4	0.5%	0.02%	0.04%	0.00%	0.00%	3.2%	0.15%	0.02%	0.95%	0.11%	0.0%	0.9%	0.01%	8.5%
64	3/1/2001	3/2/2001	21	2	0.6%	0.02%	0.00%	0.00%	0.00%	2.6%	0.68%	0.04%	0.02%	0.00%	0.0%	0.0%	0.00%	0.4%
65	3/1/2001	3/2/2001	24	5	0.5%	0.00%	0.00%	0.00%	0.00%	1.2%	0.00%	1.8%	0.00%	0.03%	0.0%	0.0%	0.01%	0.7%
66	3/1/2001	3/2/2001	24	1	0.5%	0.00%	0.00%	0.00%	0.00%	1.5%	0.03%	0.37%	0.00%	0.03%	0.0%	0.8%	0.23%	3.5%
67	3/1/2001	3/2/2001	23	1	0.9%	0.02%	0.00%	0.00%	0.00%	1.5%	0.07%	0.07%	0.00%	0.02%	0.0%	6.9%	0.07%	0.05%
68	3/1/2001	3/2/2001	21	1	0.5%	0.00%	0.00%	0.00%	0.00%	1.5%	0.46%	0.24%	0.03%	0.00%	0.0%	17.2%	0.01%	1.4%
69	3/1/2001	3/2/2001	23	3	0.6%	0.00%	0.00%	0.00%	0.00%	1.0%	0.09%	0.00%	0.00%	0.02%	0.0%	0.0%	0.00%	2.8%
70	3/1/2001	3/2/2001	21	4	0.5%	0.23%	0.00%	0.00%	0.00%	1.7%	0.04%	0.08%	0.04%	0.99%	0.0%	0.0%	0.23%	1.9%
Mean (Average)					0.8%	0.04%	0.005%	0.002%	0.010%	2.3%	0.52%	0.70%	0.10%	0.05%	0.0%	1.3%	0.11%	2.4%
Std. Deviation					0.4%	0.08%	0.017%	0.012%	0.04%	1.4%	1.4%	1.8%	0.27%	0.13%	0.0%	3.1%	0.12%	4.8%