

Chapter 16: West Plains

COMMUNITY PROFILE

The City of West Plains is located in South Central Missouri (in Howell County) and is a member of the South Central Solid Waste Management District (District P). West Plains is the largest city in District P and has the major manufacturing and economic base in the area. It is also one of the fastest growing cities in the southern part of Missouri (second to Springfield) and in recent years has doubled in size. The West Plains Transfer Station is owned and operated by the City of West Plains. The facility collects solid waste from West Plains and the surrounding communities. West Plains is located on Highway 63 and is 203 miles southwest of St. Louis, 108 miles east of Springfield, and 276 miles southeast of Kansas City.

Demographics:

	West Plains	Howell County
Area (sq. miles)	8.46	927.67
Population (1990)	8913	31,447
Density (per sq. mile)	1054	34
Pop. Change since 1980	15.1%	9.2%
Number of households	3,814	12,436
Persons per household	2.20	2.48
High school graduates	29.3%	34.9%
Median Family Income	\$21,250	\$20,154
Percent below poverty level	28.8%	25.4%

Solid Waste Collection

Most solid waste collection services are municipally owned and operated. Curbside recycling is mandatory for the City of West Plains.

Solid Waste Disposal

Since there is no landfill in District P, the waste collected at this transfer station is transferred to the Hartsville Landfill in Wright County (75 miles away). The West Plains Transfer Station receives approximately 11,704 tons of waste per year from West Plains and the surrounding areas in Howell County. The tipping fee is \$40.00 per ton with a \$10.00 minimum.

Waste Disposal and Reduction Programs

The City of West Plains Recycling Center (city owned and operated) has been open for 7 years and collects cardboard; mixed paper; newsprint; magazines; plastics #1, #2, #3, #4, and #5; aluminum can, tin cans, and glass. The City collects approximately 931.5 tons of recyclables per year. West Plains Recycling (private) collects the same materials as the City plus white goods. The City does pick up white goods, but delivers them to West Plains Recycling for disposal. The Solid Waste Management District collects household hazardous waste in the area on a monthly basis.

City of West Plains Transfer Station Results

Information about sample size and composition are listed in tables 16-1 to 16-8.

All weights are listed in pounds and all volumes are in cubic feet

SORT #1

Sort Conditions

The first sort was conducted February 10-11, 1997. A grassy section beside the transfer station was used for the sort. The weather was cold and overcast.

Statistics	
Estimated MSW (lbs) Collected by Site During Sampling Period	30,769
Total Sample Weight (lbs)	2994.1
Significance Test Results	.000
Number of Samples Collected	12

OTHER WASTE CATEGORIES			
Over-the-counter Medication (OTC)	0	Beauty/Hygiene Aerosol Products	0
Prescription Medication (Rx)	6	Household Cleaning Aerosol Products	0
Beauty/Hygiene Products	3	Gardening/Yard Care Products	0
Household Cleaning Products	0	Pet Groom Products	0
Sharps/Blades	2	Disposable Razors	9
Syringes	12	Alkaline Batteries	7
Hardware/Shop Products	2	Automobile Maintenance/Cleaning Products	1
Aerosol Cans	1		
Miscellaneous items: IV bags with saline solution, 4 bags of ice gel.			
Total Weight (lb): 11.0			
Total Volume (cubic ft.): .5			

CITY OF WEST PLAINS TRANSFER STATION
SORT #1

Sample #	Sample Size		Composition		Recycling Activities	Collection Location
	Weight	Volume	Res.	Comm.		
1	234.9	57.6	10%	90%	Curbside/drop-off	West Plains (residential-city)
2	303.4	51.7	10%	90%	Curbside/drop-off	West Plains (residential-city)
3	237.4	56	90%	10%	Curbside/drop-off	West Plains (residential-city)
4	226.9	44.3	50%	50%	Curbside/drop-off	Willow Springs (residential and rural)
5	243.9	47.4	50%	50%	Curbside/drop-off	Willow Springs (residential and rural)
6	308	78.1	50%	50%	Curbside/drop-off	West Plains (residential-city)
7	242.5	54.8	50%	50%	Curbside/drop-off	West Plains (residential-city)
8	280.5	53.8	50%	50%	Curbside/drop-off	West Plains (residential-city)
9	268.9	50.9	50%	50%	Curbside/drop-off	West Plains (residential-city)
10	208.4	42.4	50%	50%	Curbside/drop-off	West Plains (residential-city)
11	197.9	49.1	90%	10%	Curbside/drop-off	West Plains (residential-city)
12	241.1	47.9	90%	10%	Curbside/drop-off	Willow Springs (residential)
TOTALS	2994.1	634.5				
AVERAGE	249.508	52.875	53%	47%		

CITY OF WEST PLAINS TRANSFER STATION

SORT # 1

CATEGORY	TOTALS		AVERAGE		PERCENTAGE	
	wt.	vol.	wt.	vol.	Pct. by wt.	Pct. by vol.
Cardboard	170.0	60.8	14.2	5.1	5.68%	9.58%
Newsprint	119.5	20.0	10.0	1.7	3.99%	3.15%
Magazines	92.0	9.6	7.7	0.8	3.07%	1.51%
High Grade	280.5	56.0	23.4	4.7	9.37%	8.83%
Mixed	528.0	128.0	44.0	10.7	17.63%	20.17%
PAPER TOTALS	1190.0	274.4	99.2	22.9	39.75%	43.25%
Clear	63.0	4.2	5.3	0.4	2.10%	0.66%
Brown	18.1	1.3	1.5	0.1	0.60%	0.20%
Green	18.0	1.2	1.5	0.1	0.60%	0.19%
Other	18.1	1.6	1.5	0.1	0.60%	0.25%
GLASS TOTALS	117.2	8.3	9.8	0.7	3.92%	1.31%
Alum. Cans	52.5	18.8	4.4	1.6	1.75%	2.96%
Other Alum	29.0	6.8	2.4	0.6	0.97%	1.07%
Non ferrous	10.5	2.2	0.9	0.2	0.35%	0.35%
Food Cans	91.5	12.3	7.6	1.0	3.06%	1.93%
Ferrous	30.0	4.2	2.5	0.4	1.00%	0.66%
Oil Filters	24.5	1.1	2.0	0.1	0.82%	0.17%
METAL TOTALS	238.0	45.4	19.8	3.8	7.95%	7.15%
PET # 1	50.5	21.3	4.2	1.8	1.69%	3.36%
HDPE # 2	53.0	18.9	4.4	1.6	1.77%	2.98%
Film	153.5	66.5	12.8	5.5	5.13%	10.48%
Other Plastic	251.5	97.2	21.0	8.1	8.40%	15.32%
PLASTIC TOTALS	508.5	203.9	42.4	17.0	16.98%	32.14%
Food Waste	548.0	54.2	45.7	4.5	18.30%	8.54%
Wood Waste	34.5	3.8	2.9	0.3	1.15%	0.60%
Textiles	80.3	13.6	6.7	1.1	2.68%	2.14%
Diapers	103.0	10.2	8.6	0.9	3.44%	1.61%
Other Organics	37.5	5.0	3.1	0.4	1.25%	0.79%
ORGANIC TOTALS	803.3	86.8	66.9	7.2	26.83%	13.68%
Fines	58.0	7.0	4.8	0.6	1.94%	1.10%
Other Inorganics	68.0	8.2	5.7	0.7	2.27%	1.29%
INORGANIC TOTALS	126.0	15.2	10.5	1.3	4.21%	2.40%
OTHER WASTE	11.0	0.5	0.9	0.04	0.37%	0.08%
GRAND TOTAL	2994.1	634.5	249.5	52.9	100.00%	100.00%

TABLE 16-2

SORT #2

Sort Conditions

The second sort was conducted May 5-6, 1997. The sort location was the same as Sort #1. The weather was sunny and mild.

Statistics	
Estimated MSW (lbs) Collected by Site During Sampling Period	30,769
Total Sample Weight (lbs)	2199.7
Significance Test Results	.000
Number of Samples Collected	10

OTHER WASTE CATEGORIES			
Over-the-counter Medication (OTC)	1	Beauty/Hygiene Aerosol Products	0
Prescription Medication (Rx)	3	Household Cleaning Aerosol Products	0
Beauty/Hygiene Products	2	Gardening/Yard Care Products	0
Household Cleaning Products	0	Pet Groom Products	0
Sharps/Blades	0	Disposable Razors	6
Syringes	4	Alkaline Batteries	5
Hardware/Shop Products	0	Automobile Maintenance/Cleaning Products	0
Aerosol Cans	0		
Miscellaneous items: None.			
Total Weight (1b): 2.0			
Total Volume (cubic ft.): .1			

TABLE 16-3

**CITY OF WEST PLAINS TRANSFER STATION
SORT # 2**

Sample #	Sample Size		Composition		Recycling Activities	Collection Location
	Weight	Volume	Res.	Comm.		
1	202.3	51.3	0%	100%	Curbside/Drop-off	West Plains
2	226	42.3	50%	50%	Curbside/Drop-off	West Plains
3	219.6	46.8	90%	10%	Curbside/Drop-off	West Plains
4	255.7	48.4	90%	10%	Curbside/Drop-off	West Plains
5	170.7	42.6	50%	50%	Curbside/Drop-off	West Plains
6	239.2	48.9	50%	50%	Curbside/Drop-off	West Plains
7	187.9	43.4	50%	50%	Curbside/Drop-off	Willow Springs
8	314.3	55.8	90%	10%	Curbside/Drop-off	West Plains
9	195.1	47	100%	0%	Curbside/Drop-off	West Plains
10	188.9	49.8	100%	0%	Curbside/Drop-off	West Plains
TOTALS	2199.7	476.3				
AVERAGE	219.97	47.6	67%	33%		

TABLE 16-3

CITY OF WEST PLAINS TRANSFER STATION

SORT # 2

CATEGORY	TOTALS		AVERAGE		PERCENTAGE	
	wt.	vol.	wt.	vol.	Pct. by wt.	Pct. by vol.
Cardboard	137.4	50.5	13.7	5.1	6.25%	10.60%
Newsprint	90.8	22.0	9.1	2.2	4.13%	4.62%
Magazines	75.0	10.6	7.5	1.1	3.41%	2.22%
High Grade	114.1	25.0	11.4	2.5	5.19%	5.25%
Mixed	364.1	83.7	36.4	8.4	16.55%	17.56%
PAPER TOTALS	781.4	191.8	78.1	19.2	35.52%	40.24%
Clear	55.2	6.2	5.5	0.6	2.51%	1.30%
Brown	32.5	4.1	3.3	0.4	1.48%	0.86%
Green	11.4	1.0	1.1	0.1	0.52%	0.21%
Other	11.8	1.0	1.2	0.1	0.54%	0.21%
GLASS TOTALS	110.9	12.3	11.1	1.2	5.04%	2.58%
Alum. Cans	26.9	7.5	2.7	0.8	1.22%	1.57%
Other Alum	18.6	3.5	1.9	0.4	0.85%	0.73%
Non ferrous	8.7	0.8	0.9	0.1	0.40%	0.17%
Food Cans	73.2	14.0	7.3	1.4	3.33%	2.94%
Ferrous	17.2	1.6	1.7	0.2	0.78%	0.34%
Oil Filters	3.2	0.1	0.3	0.0	0.15%	0.02%
METAL TOTALS	147.8	27.5	14.8	2.8	6.72%	5.77%
PET # 1	37.9	15.5	3.8	1.6	1.72%	3.25%
HDPE # 2	57.5	21.6	5.8	2.2	2.61%	4.53%
Film	93.3	53.0	9.3	5.3	4.24%	11.12%
Other Plastic	192.6	65.5	19.3	6.6	8.76%	13.74%
PLASTIC TOTALS	381.3	155.6	38.1	15.6	17.33%	32.65%
Food Waste	414.9	43.8	41.5	4.4	18.86%	9.19%
Wood Waste	15.5	2.0	1.6	0.2	0.70%	0.42%
Textiles	47.9	11.3	4.8	1.1	2.18%	2.37%
Diapers	83.3	8.1	8.3	0.8	3.79%	1.70%
Other Organics	163.4	18.6	16.3	1.9	7.43%	3.90%
ORGANIC TOTALS	725.0	83.8	72.5	8.4	32.96%	17.58%
Fines	29.5	3.8	3.0	0.4	1.34%	0.80%
Other Inorganics	21.8	1.7	2.2	0.2	0.99%	0.36%
INORGANIC TOTALS	51.3	5.5	5.1	0.6	2.33%	1.15%
OTHER WASTE	2.0	0.1	0.2	0.01	0.09%	0.02%
GRAND TOTAL	2199.7	476.6	220.0	47.7	100.00%	100.00%

SORT # 3

Sort Conditions

The third sort was conducted October 6-8, 1997. The sort location was the same as the previous sort. The weather was overcast and mild.

Statistics	
Estimated MSW (lbs) Collected by Site During Sampling Period	30,769
Total Sample Weight (lbs)	2189.9
Significance Test Results	.000
Number of Samples Collected	12

OTHER WASTE CATEGORIES			
Over-the-counter Medication (OTC)	0	Beauty/Hygiene Aerosol Products	2
Prescription Medication (Rx)	1	Household Cleaning Aerosol Products	0
Beauty/Hygiene Products	20	Gardening/Yard Care Products	0
Household Cleaning Products	0	Pet Groom Products	1
Sharps/Blades	0	Disposable Razors	20
Syringes	23	Alkaline Batteries	16
Hardware/Shop Products	0	Automobile Maintenance/Cleaning Products	0
Aerosol Cans	2		
Miscellaneous items: 1 partial container of tar, 1 package of firecrackers, 2 containers of sodium chloride solution, 1 bottle of endozyme solution.			
Total Weight (lb): 10.2			
Total Volume (cubic ft.): .3			

**CITY OF WEST PLAINS TRANSFER STATION
SORT # 3**

Sample #	Sample Size		Composition		Recycling Activities	Collection Location
	Weight	Volume	Res.	Comm.		
1	223.1	57.8	50%	50%	Curbside/Drop-off	West Plains
2	223.5	47.3	50%	50%	Curbside/Drop-off	West Plains
3	199.1	38.3	25%	75%	Curbside/Drop-off	West Plains
4	97.4	30.4	50%	50%	Curbside/Drop-off	West Plains
5	176.6	38.3	50%	50%	Curbside/Drop-off	West Plains
6	218.1	53	75%	25%	Curbside/Drop-off	West Plains
7	147.8	39.8	75%	25%	Curbside/Drop-off	West Plains
8	99.8	35.4	50%	50%	Curbside/Drop-off	Willow Springs
9	206.4	53	80%	20%	Curbside/Drop-off	West Plains
10	205.2	43.9	75%	25%	Curbside/Drop-off	West Plains
11	172.2	38.8	75%	25%	Curbside/Drop-off	West Plains
12	220.8	37.1	75%	25%	Curbside/Drop-off	West Plains
TOTALS	2189.9	512.1				
AVERAGE	182.4917	42.7	61%	39%		

TABLE 16-5

CITY OF WEST PLAINS TRANSFER STATION SORT # 3

CATEGORY	TOTALS		AVERAGE		PERCENTAGE	
	wt.	vol.	wt.	vol.	Pct. by wt.	Pct. by vol.
Cardboard	115.0	62.3	9.6	5.2	5.25%	12.15%
Newsprint	97.2	24.7	8.1	2.1	4.44%	4.81%
Magazines	104.8	5.0	8.7	0.4	4.79%	0.97%
High Grade	226.9	42.5	18.9	3.5	10.36%	8.28%
Mixed	448.3	103.3	37.4	8.6	20.47%	20.16%
PAPER TOTALS	992.1	237.6	82.7	19.8	45.30%	46.36%
Clear	51.9	3.6	4.3	0.3	2.37%	0.70%
Brown	16.2	1.7	1.3	0.1	0.74%	0.33%
Green	9.6	1.1	0.8	0.1	0.44%	0.21%
Other	9.8	1.1	0.8	0.1	0.45%	0.21%
GLASS TOTALS	87.5	7.5	7.3	0.6	3.99%	1.46%
Alum. Cans	31.8	12.7	2.6	1.1	1.45%	2.48%
Other Alum	12.5	5.6	1.0	0.5	0.57%	1.08%
Non ferrous	0.4	0.4	0.0	0.0	0.02%	0.07%
Food Cans	56.8	10.7	4.7	0.9	2.59%	2.08%
Ferrous	16.6	2.0	1.4	0.2	0.76%	0.39%
Oil Filters	0.0	0.0	0.0	0.0	0.00%	0.00%
METAL TOTALS	118.1	31.3	9.8	2.6	5.39%	6.10%
PET # 1	36.0	20.3	3.0	1.7	1.64%	3.96%
HDPE # 2	40.0	19.6	3.3	1.6	1.83%	3.81%
Film	108.7	54.8	9.1	4.6	4.96%	10.68%
Other Plastic	167.4	83.7	14.0	7.0	7.64%	16.32%
PLASTIC TOTALS	352.0	178.3	29.3	14.9	16.07%	34.78%
Food Waste	403.0	31.2	33.6	2.6	18.40%	6.09%
Wood Waste	6.8	1.8	0.6	0.2	0.31%	0.35%
Textiles	40.4	7.0	3.4	0.6	1.84%	1.37%
Diapers	58.8	6.5	4.9	0.5	2.69%	1.27%
Other Organics	21.7	2.9	1.8	0.2	0.99%	0.57%
ORGANIC TOTALS	530.6	49.4	44.2	4.1	24.23%	9.64%
Fines	96.2	7.7	8.0	0.6	4.39%	1.50%
Other Inorganics	3.3	0.4	0.3	0.0	0.15%	0.08%
INORGANIC TOTALS	99.5	8.1	8.3	0.7	4.54%	1.58%
OTHER WASTE	10.2	0.4	0.9	0.0	0.47%	0.07%
GRAND TOTAL	2189.9	512.5	182.5	42.7	100.00%	100.00%

TABLE 16-6

SORT SUMMARY

Seasonal variations

- Mixed paper totals were larger due to the large amounts of routes containing fast food restaurants, businesses, and schools.
- Food waste (not fast food) was larger. There is a tendency for rural areas to use more traditional food, while fast food and convenience food waste is larger in urban areas.
- Organics was larger in the second round of sorts due to several bags of yard waste. Yard waste is officially banned but not totally absent from the waste stream

Sort results

- Chart 16-1 graphically compares the three seasonal sort results and shows the average waste composition, by major category, for West Plains.
- The sample data for all West Plains waste sorts are listed on Table 16-7.
- The sort results for West Plains are listed on Table 16-8.
- The summary of statistical relevance for the West Plains sorts is located on page 260.
- The total for all “other wastes” found during the West Plains sorts is on page 260.

All weights are in pounds and volumes are listed in cubic feet.

Comparisons of the West Plains’ waste stream to previous studies and other communities can be found in Chapter 24.

WEST PLAINS RESULTS BY WEIGHT

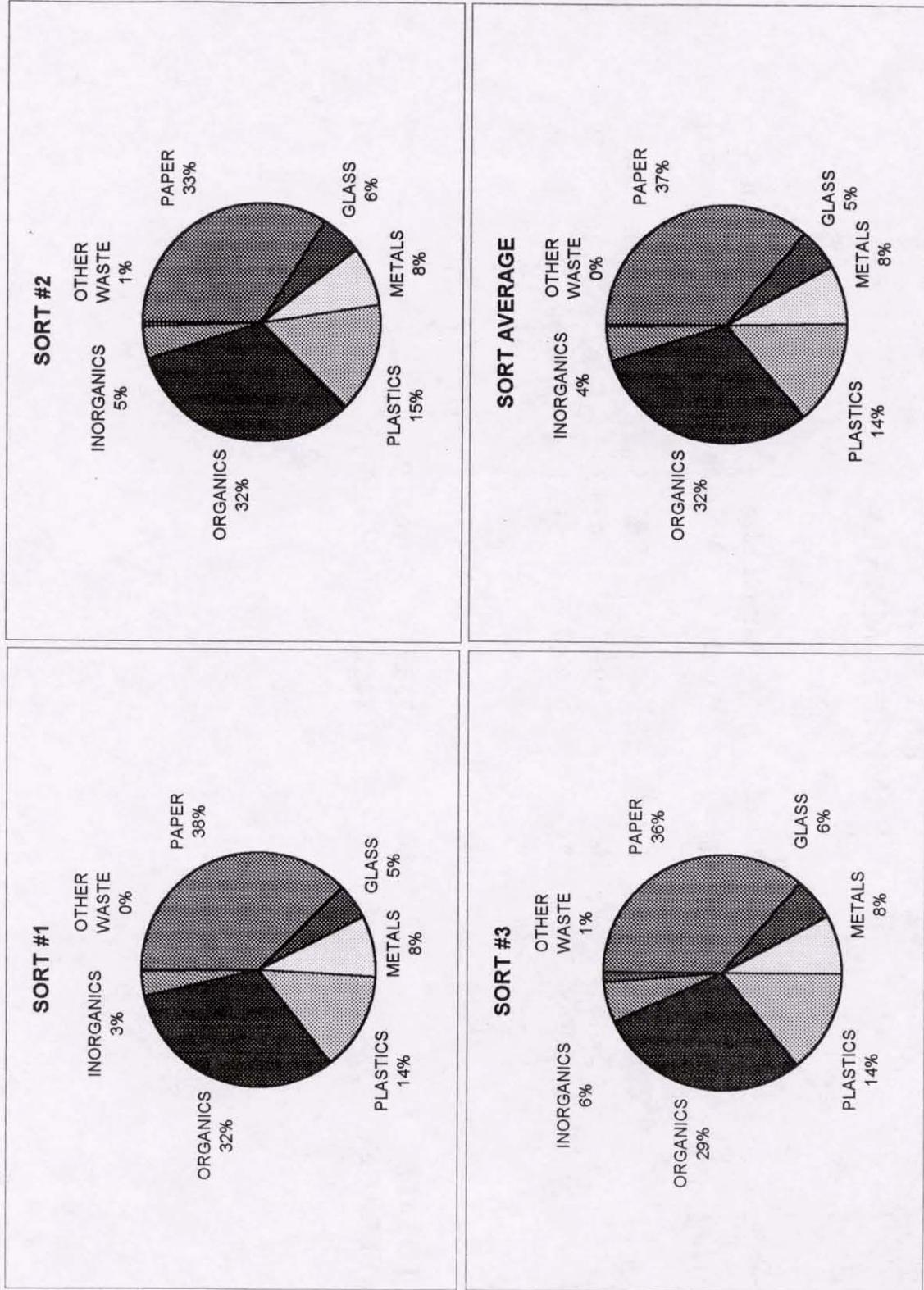


CHART 16-1

**WEST PLAINS
SAMPLE SUMMARY**

Sort #	Dates	Number of Samples	Sample Size		Composition	
			Weight	Volume	Residential	Commercial
1	2/10-2/11	12	2994.1	634.5	53%	47%
2	5/5-5/6	10	2199.7	476.3	67%	33%
3	10/6-10/8	12	2189.9	512.1	61%	39%
TOTALS		34.0	7383.7	1622.9		
AVERAGE		11.3	2461.2	541.0	60%	40%

TABLE 16-7

CATEGORY	WEST PLAINS						SUMMARY	
	SORT # 1		SORT # 2		SORT # 3		AVERAGE	
	WT.	VOL.	WT.	VOL.	WT.	VOL.	WT.	VOL.
Cardboard	5.7%	9.6%	6.2%	10.6%	5.3%	12.2%	5.7%	10.7%
Newsprint	4.0%	3.2%	4.1%	4.6%	4.4%	4.8%	4.2%	4.1%
Magazines	3.1%	1.5%	3.4%	2.2%	4.8%	1.0%	3.7%	1.6%
High Grade	9.4%	8.8%	5.2%	5.2%	10.4%	8.3%	8.4%	7.6%
Mixed	17.6%	20.2%	16.6%	17.6%	20.5%	20.2%	18.2%	19.4%
PAPER TOTALS	39.7%	43.2%	35.5%	40.2%	45.3%	46.4%	40.1%	43.3%
Clear	2.1%	0.7%	2.5%	1.3%	2.4%	0.7%	2.3%	0.9%
Brown	0.6%	0.2%	1.5%	0.9%	0.7%	0.3%	0.9%	0.4%
Green	0.6%	0.2%	0.5%	0.2%	0.4%	0.2%	0.5%	0.2%
Other	0.6%	0.3%	0.5%	0.2%	0.4%	0.2%	0.5%	0.2%
GLASS TOTALS	3.9%	1.3%	5.0%	2.6%	4.0%	1.5%	4.3%	1.7%
Alum. Cans	1.8%	3.0%	1.2%	1.6%	1.5%	2.5%	1.5%	2.4%
Other Alum	1.0%	1.1%	0.8%	0.7%	0.6%	1.1%	0.8%	1.0%
Non ferrous	0.4%	0.3%	0.4%	0.2%	0.0%	0.1%	0.3%	0.2%
Food Cans	3.1%	1.9%	3.3%	2.9%	2.6%	2.1%	3.0%	2.3%
Ferrous	1.0%	0.7%	0.8%	0.3%	0.8%	0.4%	0.9%	0.5%
Oil Filters	0.8%	0.2%	0.1%	0.0%	0.0%	0.0%	0.4%	0.1%
METAL TOTALS	7.9%	7.2%	6.7%	5.8%	5.4%	6.1%	6.8%	6.4%
PET # 1	1.7%	3.4%	1.7%	3.3%	1.6%	4.0%	1.7%	3.5%
HDPE # 2	1.8%	3.0%	2.6%	4.5%	1.8%	3.8%	2.0%	3.7%
Film	5.1%	10.5%	4.2%	11.1%	5.0%	10.7%	4.8%	10.7%
Other Plastic	8.4%	15.3%	8.8%	13.7%	7.6%	16.3%	8.3%	15.2%
PLASTIC TOTALS	17.0%	32.1%	17.3%	32.6%	16.1%	34.8%	16.8%	33.1%
Food Waste	18.3%	8.5%	18.9%	9.2%	18.4%	6.1%	18.5%	8.0%
Wood Waste	1.2%	0.6%	0.7%	0.4%	0.3%	0.4%	0.8%	0.5%
Textiles	2.7%	2.1%	2.2%	2.4%	1.8%	1.4%	2.3%	2.0%
Diapers	3.4%	1.6%	3.8%	1.7%	2.7%	1.3%	3.3%	1.5%
Other Organics	1.3%	0.8%	7.4%	3.9%	1.0%	0.6%	3.0%	1.6%
ORGANIC TOTALS	26.8%	13.7%	33.0%	17.6%	24.2%	9.6%	27.9%	13.6%
Fines	1.9%	1.1%	1.3%	0.8%	4.4%	1.5%	2.5%	1.1%
Other Inorganics	2.3%	1.3%	1.0%	0.4%	0.2%	0.1%	1.3%	0.6%
INORGANIC TOTALS	4.2%	2.4%	2.3%	1.2%	4.5%	1.6%	3.7%	1.8%
OTHER WASTE	0.4%	0.1%	0.1%	0.02%	1.0%	0.2%	0.3%	0.1%
SORT TOTALS	100%	100%	100%	100%	100%	100%	100%	100%

TABLE 16-8

West Plains Statistical Summary	
Estimated MSW (lbs) Collected by Site During Sampling Period	92,307
Total Sample Weight (lbs)	7383.7
Significance Test Results	.000
Number of Samples Collected	34
Mean Sample (lbs) and Confidence Interval (95%)	216.49 (+/-) 17.08

West Plains "Other Waste" Summary			
Over-the-counter Medication (OTC)	1	Beauty/Hygiene Aerosol Products	2
Prescription Medication (Rx)	10	Household Cleaning Aerosol Products	0
Beauty/Hygiene Products	25	Gardening/Yard Care Products	0
Household Cleaning Products	0	Pet Groom Products	1
Sharps/Blades	2	Disposable Razors	35
Syringes	39	Alkaline Batteries	28
Hardware/Shop Products	2	Automobile Maintenance/Cleaning Products	1
Aerosol Cans	3		
Miscellaneous items: IV bags with saline solution, 4 bags of ice gel, 1 partial container of tar, 1 package of firecrackers, 2 containers of sodium chloride solution, 1 bottle of endozyme solution.			
Total Weight (lb): 23.2			
Total Volume (cubic ft.): .8			