

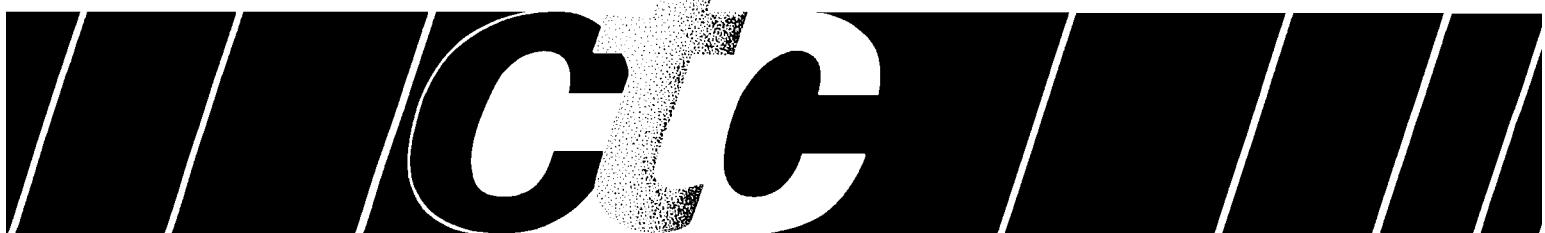


**EVALUATION OF EMISSIONS  
FROM THE  
OPEN BURNING OF HOUSEHOLD WASTE IN BARRELS**

**Volume 2. Appendices A-G**

*control*

*technology center*



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E. Timothy Oppelt, Director  
National Risk Management Research Laboratory

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Volume 2. Appendices A-G

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## ABSTRACT

A detailed emissions characterization study was undertaken to examine, characterize, and quantify emissions from the simulated burning of household waste materials in barrels. This study evaluated two separate waste streams: that of an avid recycler, who removes most of the recyclable content from the waste stream prior to combustion; and that of a non-recycler, who combusts the entire stream of household waste. Estimated emissions were developed in units of mass emitted per mass of waste burned. Continuous gas samples were analyzed for oxygen, carbon dioxide, carbon monoxide, nitric oxide, and total hydrocarbons. Gas-phase samples were collected using SUMMA® canisters and analyzed by gas chromatography/mass spectrometry (GC/MS) for volatile organic compounds (VOCs). Extractive samples from the combined particulate- and gas-phase were analyzed for semivolatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), chlorobenzenes (CBs), polychlorinated dibenzo-*p*-dioxins and polychlorinated dibenzofurans (PCDDs/PCDFs), aldehydes and ketones, hydrogen chloride (HCl), hydrogen cyanide (HCN), and metals. Emissions of PM<sub>10</sub> and PM<sub>2.5</sub> were also measured. Ash residue samples were analyzed for SVOCs, PCBs, PCDDs/PCDFs, and metals.

It was found that for most of the non-chlorinated compounds, including VOCs, SVOCs, PAHs, and aldehydes and ketones, emissions from the non-recycler were higher, both on a per mass burned basis and on a per day basis (using waste generation estimates from New York State). However, emissions of many of the chlorinated organics, particularly CBs and PCDDs/PCDFs, were higher from the avid recycler, on a per mass burned basis. From estimates of waste generated each day by New York households for the avid recycler and non-recycler scenarios, emissions per day of PCDDs/PCDFs are significantly higher for the avid recycler. Emissions of PCBs were higher from the non-recycler, although the cause of this phenomenon is not known. This phenomenon is likely due to several factors, including the higher mass fraction of PVC in the avid recycler's waste. It is also possible that some component of the non-recycler's waste may potentially serve to poison the metallic catalysts believed to be responsible for enhancing formation rates of PCDDs/PCDFs. Results from HCl sampling indicated much higher HCl emissions from the avid recycler, which is consistent with the higher emissions of chlorinated organics, and ash residue analysis indicated that the avid recycler's residue had more copper, which could contribute to higher emissions of PCDDs/PCDFs. It was noted that the temperature at the base of the burning bed was significantly lower in the case of the avid recycler than it was for the non-recycler. Gas-phase emissions of metals were not a strong function of the test conditions. PM emissions were much higher from the non-recycler. Almost all of the PM emissions from both test conditions were < 2.5 µm in diameter.

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## APPENDIX A

### QUALITY CONTROL EVALUATION REPORT

This project was conducted under the guidance of an EPA-approved QA Test Plan (APPCD Category III) and an approved Facility Manual for the test facility. These documents establish data quality objectives suitable for this study. The quality control measures employed during this study were used to ensure that the data collected would be suitable to measure air emissions resulting from open combustion of household waste.

Table A-1 lists the sample start and stop times for all of the sampling devices.

Table A-1. Start and Stop Times for the Various Sampling Systems During the Experiments

date	Test #1 Avid Recycler	Test #2 Avid Recycler	Test #3 Hut Blank	Test #4 Non Recycler	Test #5 Non Recycler
	8/30/95	9/1/95	9/6/95	9/8/95	9/12/95
start background sampling	14:26	11:38	13:06	12:17	10:15
ignition time	14:39-14:41	12:00-12:01	n/a	12:32-12:35	10:30-10:31
Dioxin train	14:43-15:55	12:03-13:22	13:25-14:25	12:36-13:36	10:32-12:02
Aldehyde/Ketone train	14:43-15:43	12:03-13:03	13:25-14:25	12:36-13:36	10:32-11:32
Dichotomous Sampler	14:43-15:32	12:03-13:22	13:25-14:55	12:36-13:36	10:32-12:02
Semi-Vol train	14:43-15:55	12:03-13:22	13:25-14:25	12:36-13:36	10:32-12:02
Multi-Metals train	14:43-15:53	12:03-13:22	13:25-14:55	12:36-13:36	10:32-12:02
HCN train	14:43-15:55	12:03-13:22	13:25-14:55	12:36-13:36	10:32-12:02
HCl train	14:43-15:55	12:03-13:22	13:25-14:55	12:36-13:36	10:32-12:02
SUMMA Can	14:42-15:55	12:03-13:19	13:27-14:57	12:37-13:37	10:32-12:02
Burn Ends/Door Opened	15:58	13:24	14.57	13:37	12:02

Table A-2 presents the data quality indicator (DQI) summaries for accuracy, precision, and completeness achieved during testing along with the planned DQI goals for each measurement or analysis performed. In general, the intended DQI goals were achieved. In several instances, however, targeted DQI goals were not achieved or could not be assessed from the available data.

Case narratives for specific analytical activities are included in the following subsections.

Table A-2 Data Quality Indicator Summary for Critical Measurements

Measurement	Objective Accuracy (% Bias)	Objective Accuracy (% QA/QC)	Objective Precision (% RPD)	Objective Recovery (%)	Objective Completeness (%)	Achieved Accuracy (% bias)	Achieved Accuracy (%)	Achieved QA/QC Recovery)	Achieved Precision (%)	Achieved Recovery (%)	Achieved Completeness (%)
O2	±5	NA	5	NA	70	0	NA	5	NA	100	100
CO2	±5	NA	5	NA	70	3	NA	5	NA	100	100
CO	±5	NA	5	NA	70	3	NA	5	NA	100	100
THC	±5	NA	5	NA	70	0.1	NA	5	NA	100	100
NO	±5	NA	5	NA	70	4	NA	5	NA	100	100
Temperature	±2	NA	±2	NA	100	NA	NA	±2	NA	100	100
Burn Hut Weight	±15	NA	15	NA	100	NA	NA	5.75	NA	100	100
Filter Weight	±15	NA	15	NA	100	NA	NA	0.25	NA	100	100
VOCs	NA	40-120	30	50-150	75	NA	79-102	25	79-102	100	100
SVOCs	NA	40-120	30	18-120	70	NA	NA	NA	15-135	100	100
PCDDs/PCDFs	NA	40-120	30	40-120	75	NA	*	*	*	42	42
Metals	10	75-125	20	NA	80	NA	75-125	20	NA	100	100
HCl	NA	80-120	15	NA	75	NA	NA	NA	NA	100	100
Aldehydes & Ketones	NA	70-130	15	NA	75	NA	75-125	±25	NA	100	100
HCN	NA	80-120	15	NA	75	NA	4.3	3	NA	100	100
Burn Hut Flow Rates	25	NA	25	NA	100	NA	NA	2.4	NA	100	100
Dichotomous Flow Rates	25	NA	25	NA	90	-2.41 -> 6.59	NA	1.2	NA	100	100

\* - see narrative text

### A.1 Air Continuous Measurement Results

The O<sub>2</sub> analyzer was behaving erratically, and could not be feasibly replaced during the tests. For those reasons, an Ecom suitcase-type O<sub>2</sub> analyzer was used as a supplement, but computer problems marred the use of the Ecom analyzer as well. For this reason, the O<sub>2</sub> data shown in the CEM traces is of questionable accuracy, however, qualitatively serves to show that O<sub>2</sub> levels did not significantly deviate from ambient levels.

The CEM data also included temperature data. The data were recorded using two EXP-16 analog to digital converter boards connected to a DASH-8 computer interface board. The computer was running LabTech Notebook software which has the capability to convert voltages to temperatures for common thermocouple types. After the tests were completed, the data were examined and it was found that the data was not intuitively correct, showing much lower temperatures than would be reasonably expected. On further examination it was found that the gain switch on the EXP-16 board used to acquire thermocouple data was in the wrong position. To derive a correction factor for the data, a thermocouple temperature generator was used to replace one of the thermocouples. Signals corresponding to temperatures ranging from 0-1200 °C were fed into the EXP-16 board using the same gain switch setting as during the tests. The temperatures recorded by the data system were observed. These observations yielded a calibration curve recorded during the burn. This calibration curve was used to correct thermocouple readings during the experiments. An examination of the calibration curve and the transformed data set suggests that this gain switch setting resulted in a loss of sensitivity to small temperature changes near ambient and a greater potential for error in this temperature range.

The filter weight balance was calibrated on September 5, 1995. It registered 1.00247 g on a 1g weight and 0.50138 g on a 0.5 g weight. The balance in the burn hut was calibrated and Table A-3 lists results from the calibration.

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Table A-3. Weight Accuracy Check

<b>Test Weight (lb)</b>	<b>Observed Weight (lb)</b>	<b>Bias (% of measured value)</b>
1	0.8	25.00
3	2.8	7.14
6.1	5.6	8.93
6.6	6.6	0.00
7.4	7.2	2.78
11	11	0.00
17	16.8	1.19
30.5	30.2	0.99

---

## A.2 Air Volatile Organic Compound Analyses

Recoveries of the standards were acceptable for the volatile organic analyses. However, it should be noted that the volatile organic analysis was done using the external standardization provisions of Method TO-14, and thus the internal standards are really surrogates, and it would be expected that recoveries would be good for these types of analytes since the spiking is performed into the purge vessel at the time of analysis. Table A-4 lists the recoveries of the standards.

Table A-4. Volatiles Recoveries (Surrogates and Internal Standards)

Compound	Target	Avid Recycler			Hut Blank			Non Recycler			Non Recycler		
		Mass	Meas.	Rec.	Mass	Meas.	Rec.	Mass	Meas.	Rec.	Mass	Meas.	Rec.
bromochloromethane	ng	100	102.3	102.3	92.97	92.97	102.01	102.01	101.44	101.44	101.44	101.44	101.44
d4-1,2-dichloroethane	100	97.71	97.71	99.27	99.27	100.22	100.22	95.66	95.66	95.66	95.66	95.66	95.66
1,4-difluorobenzene	100	94.81	94.81	98.35	98.35	96.38	96.38	90.18	90.18	90.18	90.18	90.18	90.18
d8-toluene	100	94.18	94.18	99.65	99.65	95.79	95.79	90.79	90.79	90.79	90.79	90.79	90.79
d5-chlorobenzene	100	91.08	91.08	100.4	100.4	94.11	94.11	90.34	90.34	90.34	90.34	90.34	90.34
4-bromofluorobenzene	100	80.81	80.81	91.02	91.02	83.29	83.29	79.05	79.05	79.05	79.05	79.05	79.05

## A.3 Air Semivolatile Organic Compound Analyses

### A.3.1 AEC Analyses

Table A-5 lists the post-sampling surrogate recovery limits. A pre-sampling surrogate, D10-anthracene, was added to these samples and recovery limits should parallel those listed for the post-sampling surrogates. These samples were extracted in late summer of 1995 but were analyzed in late summer of 1996, (the delay was due to budgetary constraints) therefore analytical hold times were exceeded. However, most samples demonstrated acceptable post-sampling surrogate recoveries with the main exceptions being the Hut Blank and Non-Recycler #4. The Hut Blank had post sampling surrogate recoveries between 7.5 and 14.3 % and Non-Recycler #4 had post sampling recoveries between 1.1-17.0%. Pre-sampling surrogates had recovery values of 69.3 and 80.5 %, respectively. This indicates a spiking problem for the post-sampling surrogates and does not invalidate the reported target analyte values for these samples. All samples demonstrated an increasing trend with an increase in surrogate boiling point. This is likely due to the extraction process and likely biased lighter target analytes slightly downward. The top 20 peaks which were non-target analytes were also reported as tentatively identified compounds. Two different batches of XAD may have been used during the sampling process. Both batches were analyzed (9608002 and 9608003) and found to have slight phthalate contamination. A glassware blank (9608004) was also analyzed and this also had slight phthalate contamination.

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Table A-5. Post-Sampling Surrogate Recoveries

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Compound	Lower Limit (%)	Upper Limit (%)
2-fluorophenol	17.4	131.8
D5-phenol	22.4	133.2
D5-nitrobenzene	10.0	130.6
2-fluorobiphenyl	15.3	136.5
2,4,6-tribromophenol	10.0	135.0
D14-terphenyl	13.8	143.4

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### A.3.2 WCL&R Analyses

Daily QC performance checks met all EPA criteria.

Instrument detection limits were obtained by replicate injection of 20 ng of each analyte. MDLs were also obtained for our 8270 method but these were based on replicate extractions of aqueous samples, not entirely relevant to these analyses. Standards were not available for several analytes at the time of injection but ions and retention times obtained from the EPA method were used to scan for these.

The initial calibration performed prior to air sample analysis was slightly improved over the previous curve for ash analysis. 1,4-Phenylenediamine, N-Nitrosodimethylamine, benzyl alcohol, hexachlorocyclopentadiene, chlorobenzilate, famphur, benzo(b)fluoranthene and 7,12-dimethylbenz(a)anthracene exhibited %RSDs greater than 25%. Of these, only 1,4-phenylenediamine and famphur exhibited a %RSD greater than 32%. 1,4-Phenylenediamine is not readily chromatographed and Famphur had not been evaluated for the earlier curve.

In addition to a subset of CLP surrogate spikes, anthracene-d10 had been added to extracts as a recovery standard. Although an ampule of anthracene-d10 was provided by Acurex, this was not included in the mixture of surrogates which we analyzed. Quantification of this analyte was performed by assuming a response of 1 relative to phenanthrene-d10.

The concentrations of anthracene-d10 and other surrogates were clearly much higher than expected from the description we received and also beyond our calibration range, except where recoveries were low. Further, the phenols exhibited concentration-dependent shifts in retention times at these high levels (an advantage of MS detection is that we can still identify and quantify, even where such shifts occur; no ambiguities resulted from these shifts). Since it is inappropriate to dilute samples for which only surrogates are beyond the calibration range, we reported results only for the undiluted runs.

The XAD extracts from the air sampling procedure had plasticizers (di-C8 to di-C10 phthalates and di-C8-adipates) as their most abundant non-target analytes (these were even more abundant in the hut and/or field blanks than in the

samples). Some samples and blanks also exhibited abundant siloxanes, from hexamethylcyclotri-siloxane to hexadecamethylcyclooctasiloxane. We also found di-lauryl thiopropionate in these samples and blanks, as we also had for the ash samples [this is not a background substance which we normally encounter].

#### A.4 Air Chlorobenzene Analyses

A 100  $\mu\text{L}$  portion of the extracts was spiked with 26  $\mu\text{L}$  of a 10 ng/ $\mu\text{L}$   $^{13}\text{C}$ -Cl<sub>1-6</sub> Chlorobenzene internal standard mix. A 1  $\mu\text{L}$  portion of the resulting 126  $\mu\text{L}$  was injected onto the GC/MS system operating in selected ion monitoring (SIM) mode. Quantitation of the chlorobenzene isomers was performed using the internal standard method. Calculations for all these analyses were based on 1 mL original extract volume.

Analysis was performed on a Hewlett Packard 5890 Series II Gas Chromatograph (fitted with a Hewlett Packard 7673 automated injector), with programmable carrier gas pressure, the column of which was interfaced directly to the source of a Hewlett Packard 5971 Mass Selective Detector. The column was a 60M x 0.25mm DB-5 column (0.25 $\mu$  film). Injection volume was 1  $\mu\text{L}$  using splitless injection. The helium pressure was programmed to start at 80 PSI for 1 minutes then ramped at 99 PSI/min to 30 PSI then ramped at 5 PSI/min to 45 PSI and maintained at that pressure for the remainder of the run. The oven temperature was held at 70°C for 2 min, ramped at 8 deg/min to 300°C then held for 5 minutes.

Daily performance checks met all criteria for mass calibration and tuning. Multilevel standards were run to establish linearity and response factors obtained were checked for continuing calibration.

Average recovery for the five labeled chlorobenzene internal standards was 80% (average sample range 35% to 95%). Sample 9582045 had a low average recovery 35% the five other samples were all in excess of 80%. Detection limits were generally less than 0.5 ng/mL of original extract.

#### A.5 Air PAH Analyses

A 10  $\mu\text{L}$  portion of the extracts was spiked with 1  $\mu\text{L}$  of a 10 ng/ $\mu\text{L}$   $^2\text{H}$ -PAH internal standard mix containing 17 deuterated compounds. A 1  $\mu\text{L}$  portion of the resulting 11  $\mu\text{L}$  was injected onto the GC/MS system operating in selected ion monitoring (SIM) mode. Quantitation of the PAHs was performed using the internal standard method. Calculations for all these analyses were based on 1 mL original extract volume.

Analysis was performed on a Hewlett Packard 5890 Series II Gas Chromatograph (fitted with a Hewlett Packard 7673 automated injector), with programmable carrier gas pressure, the column of which was interfaced directly to the source of a Hewlett Packard 5971 Mass Selective Detector. The column was a 60M x 0.25mm DB-5 column (0.25  $\mu\text{m}$  film). Injection volume was 1  $\mu\text{L}$  using splitless injection. The helium pressure was programmed to start at 80 PSI for 1 minute then ramped at 99 PSI/min to 30 PSI then ramped at 5 PSI/min to 45 PSI and maintained at that pressure for the remainder of the run. The oven temperature was held at 130°C for 2 min, ramped at 8 deg/min

to 300°C then held for 30 minutes.

Daily performance checks met all criteria for mass calibration and tuning. Multilevel standards were run to establish linearity and response factors obtained were checked for continuing calibration.

Average recovery for the labeled PAH internal standards was 82% (average sample ranged 63% to 90%). Detection limits for PAHs were generally less than 50 pg/mL of original extract.

#### A.6 Air PCDD/PCDF Analyses

Air sampler XAD was spiked for PCDD/PCDF (<sup>13</sup>C-internal standard mix + M-23 <sup>13</sup>C-standard mix) and PCBs (BZ-14, 65 and 166), extracted by Acurex and received at Wadsworth Labs on 10/5/95. Extracts were brought to 10 mL with toluene and spiked with 12.5 ng of <sup>13</sup>C-1,2,3,4 TCDD as clean-up standard. A final cleaned-up extract of 75 µL in xylene which contained the PCDD/PCDF fraction was obtained which included 12.5 ng of an injection standard of <sup>13</sup>C 1,2,3,7,8,9 HxCDD added during the final concentration step. The samples were cleaned up for PCDD/PCDF analysis. Due to an oversight the PCB fraction from this clean-up was not retained and was lost to waste. This required a request for an additional 250 µL of the original extract held by Acurex for this type of eventuality. The supplemental extract was cleaned-up in the same way but this time retaining the PCB fraction which was analyzed by GC/EC using DEC method 91-11 as specified in the QATP. Calculations for all these analyses were based on 1 mL original extract volume.

PCDD/PCDF analysis was performed on a Hewlett Packard 5890 Series II Gas Chromatograph (fitted with a Hewlett Packard 7673 automated injector), with programmable carrier gas pressure, the column of which was interfaced directly to the source of a Hewlett Packard 5971 Mass Selective Detector. The column was a 60M x 0.25mm DB-XLB column (0.25 µm film). Injection volume was 2 µL using splitless injection. The helium pressure was programmed to start at 80 PSI for 1 minutes then ramped at 99 PSI/min to 30 PSI then ramped at 5 PSI/min to 45 PSI and maintained at that pressure for the remainder of the run. The oven temperature was held at 130°C for 1 min, ramped at 20 deg/min to 190°C then ramped at 5 deg/min to 240°C and held for 13.5 minutes, ramped at 10 deg/min to 290°C and held for 19.5 minutes.

Daily performance checks met all criteria for mass and retention time calibration and for the GC column performance for 2,3,7,8- TCDD isomer resolution.

Table A-6 details the recoveries of the internal standards. It is expected that 40-60% recoveries would constitute fully valid data, although trends may still be valid for lower recoveries. Most samples exhibited recoveries in the 40-120% range. However, for some of the avid recycler samples in particular, some congeners showed recoveries in the 10-20% range. The numbers are still reported, though, with caveats.

### **A.7 Air PCB Analyses**

PCB analysis was performed on a Hewlett Packard 5890 Series II Gas Chromatograph (fitted with a Hewlett Packard 7673 automated injector), with programmable carrier gas pressure, and electron capture detector. The column was a 60M x 0.25mm DB-5 column (0.1 $\mu$  film). Injection volume was 2  $\mu$ L using splitless injection. The helium carrier gas was programmed to a constant pressure of 19.5 PSI throughout the run. The oven temperature was held at 90°C for 1 min, ramped at 25 deg/min to 150°C then held for 4 minutes before a final ramp at 1.5 deg/min to 290°C then held for 40 minutes. Total time before the next run was 140 minutes.

Calibration of the GC/EC was by means of a 3 point calibration. Response was checked using continuing calibration which contains 120 PCB congeners each at 10ng/ $\mu$ l concentration which was run during sample batches.

Recovery of the 3 PCB congeners through the extraction and clean-up was within QC limits of 40-140% (range 45-115%). The 3,5-dichlorobiphenyl (BZ-14) showed a lower recovery in all the extracts which may be a result of the higher vapor pressure and loss due to volatility during sample manipulations.

### **A.8 Air Acid Gas Analyses**

Relatively little QA/QC was done for HCl measurements. A five point calibration curve was run and found to be linear and a laboratory blank was run and found to be clean. Data were not available to determine the value of this DQO. For HCN measurements, a matrix spike of 10  $\mu$ g/mL was analyzed in duplicate. The analyses resulted in a measurement of 10.27351 and 10.58133, respectively.

### **A.9 Air Aldehyde and Ketone Analyses**

For the determination of precision and accuracy of these analyses, the results from a EPA audit of Acurex ERO laboratory prior to the time of the analyses of these samples. An additional blind audit was performed after these samples were run. Both audits supported a  $\pm 25\%$  accuracy and precision level.

### **A.10 Air Mercury Analyses Performed by Triangle Laboratories**

Six 4% KMnO<sub>4</sub>/10% H<sub>2</sub>SO<sub>4</sub> samples were analyzed for Hg; five of these samples were test samples and one was a blank sample. For Hg analysis, the samples and associated QC samples were prepared and analyzed following the guidelines of Method 101A (6/93). Hg concentrations were determined by cold vapor atomic absorption (CVAA). All samples were non-detects. The samples were re-prepared using a larger aliquot and reanalyzed. The results of the reanalyses were also non-detects. The original analysis was reported. The analytical data were considered valid based on the guidelines of EPA Method 101A.

Table A- 6. PCDD/PCDF Sample Recoveries (%)

Run	2378	12378	123478	123678	123789	12346789	12346789	2378	12378	123478	123678	1234678	123789	12346789	12346789	
	TCDD	PCDD	HxCDD	HxCDD	HxCDD	HxCDD	OCDD	TCDF	PCDF	PCDF	HxCDF	HxCDF	HxCDF	HxCDF	HxCDF	OCDF
Avid Recycler #1	8	7	44	7	7	5	5	5	9	44	47	47	7	7	6	37
Avid Recycler #2	12	11	51	10	10	8	8	10	12	52	54	10	10	9	46	8
Hut Blank	33	32	65	27	27	27	27	29	36	59	75	28	28	27	58	27
Non-Recycler #1	80	72	68	48	48	52	52	75	79	66	78	48	48	54	51	52
Non-Recycler #2	59	53	57	36	36	39	39	53	58	55	59	37	37	4	42	39

## **A.11 Air Inorganic Analyses**

Four filter samples, one hut blank filter and one filter blank were each cut into four quarters. One quarter from each of the filters and the associated quality control (QC) were digested in a microwave oven using nitric acid. The digestates were analyzed using ICP-MS for arsenic, barium, beryllium, cadmium, magnesium, copper, nickel, lead, silver, and zinc. A portion of each digestate was analyzed for selenium using a graphite furnace. One quarter from each filter was analyzed for mercury using cold vapor atomic absorption. One quarter from each filter was digested in a microwave oven using nitric and hydrofluoric acids and analyzed for chromium and aluminum using an atomic absorption spectrometer.

Three nitric acid wash samples, one hut blank and one reagent blank were concentrated and then digested in a microwave oven. They were analyzed as above except for mercury which was not analyzed and hydrofluoric acid was not used in the digestion procedure for chromium and aluminum.

Three hydrochloric acid rinse samples, one hut blank and one reagent blank were analyzed for mercury using cold vapor atomic absorption.

All analytical procedures followed acceptable laboratory standards. A duplicate, spike and a Standard Reference Material (SRM) (#1648 Urban Particulate Matter) accompanied the samples from digestion through analysis with the results within acceptable limits.

All samples, hut blanks, reagent and filter blanks were received on September 20, 1995 in good condition except for one nitric acid wash which had no sample due to a broken cap.

## **A.12 Ash Semivolatile Organic Analyses**

Separate initial calibrations were run for ash and air runs. Initial calibrations prior to ash analysis resulted in %RSDs of less than 10% for most analytes, less than 25% for most others and greater than 25% for pyridine, N-Nitrosodimethylamine, 3- or 4-methyl phenol, 2,4-dinitrophenol, 4-nitrophenol, pentachlorophenol, 4-nitroquinoline-1-oxide and kepone.

EPA CLP surrogates were added to the ash samples and EPA CLP matrix spikes were added to sample 9582036 (Non Avid). Surrogate recoveries were within acceptance limits; matrix spike recoveries were good except for 25% recovery of 2,4-dinitrotoluene in MS (low limit 28% for soil, 24% for water). Three RPDs were above acceptance limits: 1,4-dichlorobenzene (39%, high limit 27%), 1,2,4-trichlorobenzene (34%, high limit 23%) and acenaphthene (21%, high limit 19%).

Most of the non-target substances detected in the ash samples were either those also detected in the blank (Aldol condensation products and di-lauryl-thio-di-propionate) or were hydrocarbons. An apparent modified form of the

surrogate 2,4,6-tribromophenol was also detected in one sample; this was not in the corresponding blank but is sometimes seen in blanks. The avid recycler sample 9582035 also contained substances tentatively identified as 6 - 9 carbon branched alkanes, alcohols, esters, aldehydes and ketones, 16 and 18 carbon possibly (1)-alkenes, benzoic acid, hexdecanoic acid and a substance tentatively identified as 4,4'-butylidinebis[2-(1,1-dimethylethyl)-5-methylphenol].

#### A.13 Ash PCDD/PCDF Analyses

Recovery of 10  $^{13}\text{C}$ -internal standards through the cleanup averaged 50%. Injection standard recovery was 66-72%. The matrix spike (MS 9582038) recovery for the 17 2,3,7,8 substituted PCDD/PCDF compounds (Cl4-8) was 92 to 143% and for the matrix spike duplicate (MSD 9582039) was 69 to 113% (except 1,2,3,4,6,7,8-HpCDF at 23% probably due to large matrix concentration). The relative percent difference for the duplicates with the one compound exception as noted above was less than 13% for the 16 remaining PCDD/PCDF compounds.

#### A.14 Ash PCB Analyses

Ash samples were spiked with a 200  $\mu\text{L}$  of a surrogate mix (tetrachloro-m-xylene [TCMX] and BZ 209) and with the 100  $\mu\text{L}$  of a 3 PCB congener mix which contained BZ-14, 65, and 166 prior to extraction and clean-up. Recoveries ranged between 65 and 95%.

#### A.15 Ash Metal Analyses

A representative 2.0 g of ash samples were digested and refluxed in  $\text{HNO}_3$  and/or  $\text{HCl}$  and  $\text{H}_2\text{O}_2$ .  $\text{HCl}$  was used as the final reflux acid for Inductively Coupled Atomic Emission Spectrophotometry (ICP-AES) analyses of beryllium, silver, barium, cadmium, chromium, copper, iron, manganese, nickel, strontium, titanium, vanadium, zinc, lead, tin, aluminum, calcium, potassium, magnesium, and sodium using EPA method 200.7.  $\text{HNO}_3$  was used as the complete reflux acid for the Electrothermal Atomic Absorption Spectrophotometry (graphite furnace) analyses of arsenic, selenium, antimony, and thallium using EPA method 206.2, 270.2, 204.2, and 279.2, respectively. Aqueous acid digestates for mercury were analyzed using Cold Vapor Atomic Absorption and EPA method 101A.

The solid Laboratory Control Sample (LCS 0287) was prepared by the UNLV Quality Assurance laboratory and was distributed by ICF Technology, Inc. under contract to the EPA. The “True Value” concentrations were derived from the results of an EPA multi-laboratory analysis of the solid material by Contract Laboratory Program procedures. Calibration check standards were maintained at  $\pm 10\%$  throughout the analysis. Spike recoveries were good for all trace metals (within 75 - 125%) except for those metals where the spike amount was too low relative to the endogenous concentration (aluminum, copper, iron, and zinc) or too low relative to the instrument’s reporting limit (silver). Reproducibility was acceptable for all trace metals except silver (23 vs. <8 mg/kg) and copper (3520 vs. 4520 or 26% RPD). Digestion QC sample (Soil Lot 214 from Environmental Resource Associates) was well within the acceptable limits for all analytes.

## APPENDIX B. CONTINUOUS EMISSION MONITORING DATA

### Barrel Burning Test No. 1 CEM Data

ET (MIN)	CO (PPM)	NOX (PPM)	O2 (%)	HC (PPM)	CO2 (%)	TEMP1 (C)	TEMP2 (C)	TEMP4 (C)	TEMP5 (C)	TEMP6 (C)	TEMP7 (C)	TEMP8 (C)	TEMP9 (C)	weight (LB)
-20.08	1	0.3	21.5	5	0.06	46	46	46	50.1	46	50.1	46	42	27.6
-19.58	2	0.2	23.5	4	0.05	46	46	46	54.1	46	50.1	46	42	27.8
-19.08	2	0.4	24.2	4	0.06	46	46	46	54.1	46	50.1	46	42	27.8
-18.58	0	0.3	23.1	5	0.05	46	46	46	50.1	46	50.1	46	42	27.8
-18.08	1	0.3	20.1	4	0.06	46	46	46	50.1	46	50.1	46	38	27.8
-17.58	0	0.2	20.7	4	0.04	46	46	46	54.1	46	50.1	46	42	27.8
-17.08	1	0.3	21.1	5	0.05	46	46	46	54.1	46	50.1	46	42	27.8
-16.58	2	0.3	21	4	0.05	46	46	46	50.1	46	50.1	46	42	27.8
-16.08	-2	0.1	20.9	5	0.03	46	46	46	50.1	46	54.1	46	42	27.8
-15.58	-1	0.4	20.9	5	0.04	46	50.1	46	54.1	46	54.1	46	42	27.8
-15.08	2	0.4	21	4	0.04	46	46	46	54.1	46	54.1	46	42	27.8
-14.58	2	0.3	20.8	5	0.04	46	46	46	50.1	46	54.1	46	42	27.8
-14.08	2	0.2	19.9	5	0.05	50.1	46	50.1	50.1	46	54.1	46	42	27.8
-13.58	2	0.3	18.3	4	0.04	46	46	46	50.1	46	54.1	46	42	27.6
-13.08	3	0.4	17.9	4	0.02	46	46	50.1	50.1	46	54.1	46	46	27.8
-12.58	4	0.2	18.6	3	0.04	50.1	50.1	46	50.1	46	54.1	46	46	27.8
-12.08	2	0.3	19.9	3	0.05	50.1	50.1	50.1	54.1	46	54.1	46	46	27.8
-11.58	1	0.4	20.5	6	0.06	50.1	46	50.1	50.1	46	54.1	46	46	27.6
-11.08	2	0.2	20.9	4	0.06	50.1	46	50.1	50.1	46	54.1	46	46	27.6
-10.58	2	0.3	21	4	0.05	50.1	50.1	50.1	54.1	46	54.1	46	46	27.8
-10.08	1	0.2	20.9	5	0.04	50.1	46	50.1	54.1	46	54.1	46	42	27.6
-9.58	2	0.2	21	4	0.04	50.1	50.1	50.1	54.1	46	54.1	46	42	27.6
-9.08	2	0.3	21.1	3	0.04	50.1	46	50.1	54.1	50.1	54.1	46	50.1	27.8
-8.58	1	0.3	21	6	0.05	50.1	46	50.1	54.1	46	54.1	46	46	27.8
-8.08	1	0.3	21	4	0.06	50.1	50.1	50.1	54.1	50.1	54.1	46	42	27.8
-7.58	1	0.3	21	5	0.05	50.1	46	50.1	50.1	46	54.1	46	46	27.6
-7.08	1	0.2	20.9	5	0.05	50.1	46	50.1	50.1	46	54.1	46	46	27.8
-6.58	0	0.4	20.9	4	0.03	50.1	50.1	50.1	50.1	46	54.1	46	42	27.8
-6.08	0	0.2	21	5	0.04	50.1	50.1	46	54.1	50.1	54.1	46	46	27.8
-5.58	0	0.2	20.9	4	0.07	50.1	46	50.1	54.1	50.1	54.1	46	46	27.8
-5.08	0	0.3	20.9	4	0.04	50.1	50.1	50.1	50.1	46	54.1	46	46	27.6
-4.58	1	0.2	20.9	4	0.05	50.1	50.1	50.1	50.1	46	54.1	46	46	27.6
-4.08	1	0.3	20.9	5	0.04	50.1	46	50.1	50.1	46	54.1	46	46	27.8
-3.58	-1	0.4	20.9	4	0.03	50.1	50.1	50.1	50.1	46	54.1	46	46	27.6
-3.08	0	0.4	20.9	5	0.06	50.1	50.1	50.1	50.1	46	54.1	46	42	27.8
-2.58	-1	0.2	21	5	0.04	50.1	50.1	50.1	54.1	46	54.1	46	46	27.8
-2.08	1	0.4	21	3	0.04	50.1	50.1	50.1	50.1	46	54.1	46	46	27.6
-1.58	0	0.4	21.1	4	0.05	50.1	50.1	50.1	50.1	46	54.1	46	46	27.8
-1.08	0	0.4	21	4	0.04	50.1	50.1	50.1	50.1	46	54.1	46	46	27.8
-0.58	-1	0.4	21	4	0.04	50.1	46	50.1	50.1	46	54.1	46	46	27.6
-0.08	1	0.3	21.1	4	0.04	50.1	50.1	50.1	50.1	50.1	54.1	50.1	46	27.4
0.42	2	0.2	21	4	0.04	50.1	50.1	50.1	50.1	50.1	54.1	58.1	46	27.4
0.92	2	0.4	20.9	5	0.05	50.1	46	50.1	50.1	50.1	54.1	74.1	46	27.6
1.42	1	0.4	21	4	0.05	54.1	50.1	50.1	54.1	50.1	54.1	70.1	46	27.4
1.92	2	0.4	20.9	3	0.05	54.1	50.1	54.1	50.1	54.1	54.1	70.1	46	27.4
2.42	2	0.4	20.9	4	0.05	58.1	50.1	54.1	50.1	54.1	54.1	70.1	46	27.4
2.92	2	0.4	20.9	3	0.04	66.1	50.1	54.1	54.1	54.1	54.1	70.1	42	27.2
3.42	2	0.5	21	3	0.05	74.1	46	54.1	50.1	54.1	54.1	74.1	42	26.8
3.92	4	0.6	21	6	0.07	82.1	42	54.1	50.1	58.1	54.1	78.1	42	26.8
4.42	5	0.7	21	5	0.07	94.1	42	54.1	50.1	58.1	54.1	90.1	42	26.6
4.92	4	0.4	21	7	0.08	102.1	46	58.1	54.1	58.1	54.1	94.1	42	26.2
5.42	8	0.8	20.9	7	0.09	102.1	46	58.1	54.1	62.1	54.1	94.1	42	26.2
5.92	11	0.8	20.9	7	0.09	114.2	46	58.1	54.1	62.1	54.1	102.1	42	26
6.42	11	0.8	21	8	0.09	118.2	46	58.1	54.1	62.1	54.1	106.1	42	25.6
6.92	8	1	20.8	7	0.09	130.2	46	62.1	54.1	62.1	54.1	114.2	42	25.4
7.42	8	0.9	20.8	7	0.11	142.2	46	62.1	54.1	66.1	54.1	126.2	42	25.2
7.92	7	1.1	20.8	6	0.11	150.2	46	62.1	54.1	66.1	54.1	130.2	42	24.8
8.42	7	1.3	20.8	7	0.11	154.2	46	62.1	54.1	66.1	54.1	130.2	42	24.6
8.92	7	1	20.8	7	0.13	154.2	46	62.1	54.1	66.1	54.1	130.2	42	24.4
9.42	7	0.9	20.8	6	0.11	154.2	46	66.1	54.1	70.1	54.1	130.2	42	24
9.92	11	0.8	20.9	9	0.13	150.2	46	66.1	54.1	70.1	54.1	126.2	42	23.8
10.42	12	0.9	20.7	8	0.13	138.2	46	66.1	54.1	70.1	54.1	118.2	42	23.6
10.92	20	0.7	20.9	12	0.11	126.2	50.1	66.1	54.1	70.1	54.1	110.2	38	23.4
11.42	32	0.4	20.8	18	0.1	118.2	50.1	66.1	54.1	70.1	54.1	98.1	42	23.2
11.92	39	0.6	20.9	20	0.09	114.2	50.1	66.1	54.1	70.1	54.1	98.1	42	22.8
12.42	39	0.5	20.8	22	0.09	110.2	50.1	66.1	54.1	70.1	54.1	94.1	42	22.6
12.92	39	0.5	20.9	25	0.09	106.1	50.1	66.1	54.1	66.1	54.1	90.1	42	22.6
13.42	43	0.4	20.9	26	0.08	106.1	50.1	66.1	54.1	70.1	54.1	94.1	46	22.2
13.92	44	0.6	20.9	24	0.08	110.2	50.1	66.1	54.1	70.1	54.1	102.1	46	22
14.42	37	0.7	20.9	20	0.1	126.2	54.1	66.1	54.1	70.1	54.1	118.2	42	21.6

**Barrel Burning Test No. 1 CEM Data**

ET (MIN)	CO (PPM)	NOX (PPM)	O2 (%)	HC (PPM)	CO2 (%)	TEMP1 (C)	TEMP2 (C)	TEMP4 (C)	TEMP5 (C)	TEMP6 (C)	TEMP7 (C)	TEMP8 (C)	TEMP9 (C)	weight (LB)
14.92	31	0.8	21.1	17	0.09	142.2	54.1	66.1	58.1	70.1	54.1	134.2	42	21.2
15.42	27	0.7	20.9	16	0.11	158.2	54.1	70.1	58.1	74.1	54.1	154.2	42	20.8
15.92	24	1	20.8	13	0.11	166.2	54.1	70.1	66.1	74.1	54.1	154.2	42	20.2
16.42	19	0.8	20.8	13	0.12	170.3	54.1	74.1	66.1	78.1	54.1	166.2	42	19.8
16.92	21	0.7	20.7	14	0.13	174.3	54.1	74.1	74.1	78.1	54.1	174.3	46	19.4
17.42	17	0.8	20.7	10	0.13	174.3	54.1	74.1	90.1	78.1	54.1	198.3	42	19.2
17.92	15	0.9	20.7	10	0.15	178.3	58.1	74.1	114.2	78.1	54.1	198.3	42	19.4
18.42	14	0.9	20.8	10	0.16	186.3	58.1	74.1	130.2	78.1	54.1	218.3	46	19
18.92	17	0.9	20.9	9	0.15	186.3	58.1	74.1	138.2	82.1	54.1	230.4	42	18.6
19.42	16	0.9	20.8	8	0.15	190.3	58.1	78.1	146.2	82.1	54.1	246.4	42	18.2
19.92	17	0.9	20.7	11	0.15	194.3	58.1	78.1	158.2	82.1	54.1	246.4	42	18
20.42	21	1	20.7	12	0.15	194.3	62.1	78.1	154.2	82.1	54.1	262.4	42	17.6
20.92	25	0.9	20.9	13	0.17	198.3	62.1	78.1	162.2	86.1	54.1	266.4	46	17.2
21.42	26	0.7	20.8	11	0.13	198.3	62.1	82.1	162.2	86.1	54.1	258.4	42	16.6
21.92	22	0.9	20.8	10	0.14	206.3	62.1	82.1	166.2	86.1	54.1	254.4	42	16.4
22.42	24	0.8	20.8	11	0.16	214.3	62.1	82.1	170.3	90.1	54.1	250.4	42	16.2
22.92	22	1	20.7	13	0.15	218.3	62.1	86.1	174.3	90.1	54.1	258.4	46	16
23.42	21	0.9	20.8	11	0.16	214.3	62.1	86.1	174.3	90.1	54.1	270.4	46	15.6
23.92	20	0.7	20.8	10	0.17	198.3	62.1	86.1	178.3	90.1	50.1	274.4	46	15.4
24.42	14	0.6	20.8	10	0.12	194.3	66.1	90.1	182.3	90.1	54.1	274.4	46	15.2
24.92	14	0.8	20.7	9	0.09	190.3	66.1	90.1	182.3	94.1	54.1	262.4	46	14.8
25.42	13	0.7	20.8	8	0.11	182.3	66.1	90.1	186.3	94.1	54.1	238.4	46	14.6
25.92	9	0.6	20.9	8	0.09	182.3	66.1	90.1	190.3	94.1	54.1	234.4	46	14.4
26.42	12	0.4	21	9	0.12	174.3	66.1	90.1	190.3	98.1	54.1	230.4	46	14.2
26.92	10	0.8	20.8	8	0.07	174.3	66.1	90.1	194.3	94.1	54.1	242.4	46	14
27.42	9	0.6	20.8	8	0.07	170.3	66.1	90.1	198.3	94.1	54.1	230.4	42	13.6
27.92	10	0.7	20.8	8	0.09	166.2	66.1	90.1	202.3	98.1	54.1	230.4	46	13.4
28.42	10	0.6	20.9	10	0.09	162.2	70.1	90.1	206.3	98.1	54.1	226.3	46	13.4
28.92	10	0.6	20.9	8	0.08	162.2	66.1	90.1	210.3	98.1	54.1	226.3	46	13
29.42	10	0.6	21	7	0.07	154.2	70.1	90.1	214.3	98.1	54.1	214.3	46	12.8
29.92	11	0.6	21	8	0.08	150.2	70.1	90.1	214.3	94.1	54.1	206.3	46	12.8
30.42	11	0.6	21.1	8	0.08	146.2	70.1	86.1	222.3	98.1	54.1	202.3	46	12.4
30.92	10	0.7	21.1	8	0.07	146.2	70.1	90.1	226.3	98.1	54.1	194.3	46	12.4
31.42	11	0.4	21.1	9	0.07	138.2	70.1	86.1	230.4	82.1	54.1	182.3	46	12.2
31.92	9	0.5	21.1	7	0.07	134.2	70.1	86.1	234.4	62.1	54.1	178.3	46	12.2
32.42	9	0.4	21	9	0.08	130.2	70.1	86.1	242.4	62.1	54.1	162.2	46	12
32.92	8	0.6	21	7	0.07	126.2	70.1	86.1	242.4	62.1	54.1	162.2	46	12
33.42	9	0.4	21	10	0.07	122.2	70.1	86.1	250.4	62.1	54.1	162.2	46	11.8
33.92	8	0.6	21.1	8	0.07	118.2	70.1	86.1	254.4	62.1	54.1	150.2	46	11.6
34.42	9	0.4	21.2	10	0.07	114.2	70.1	86.1	258.4	62.1	54.1	142.2	46	11.6
34.92	8	0.4	21.2	8	0.06	110.2	70.1	82.1	262.4	62.1	54.1	142.2	46	11.4
35.42	8	0.7	21	7	0.06	106.1	70.1	82.1	266.4	62.1	54.1	138.2	46	11.4
35.92	7	0.3	21	7	0.05	102.1	70.1	82.1	274.4	58.1	54.1	126.2	46	11.2
36.42	7	0.4	21	9	0.04	98.1	66.1	82.1	278.4	58.1	54.1	122.2	42	11.2
36.92	5	0.6	21	7	0.04	94.1	70.1	82.1	286.4	58.1	54.1	118.2	42	11.2
37.42	6	0.5	20.9	8	0.04	94.1	70.1	82.1	290.4	58.1	54.1	114.2	46	11
37.92	7	0.5	20.8	8	0.04	90.1	66.1	78.1	298.5	58.1	54.1	114.2	42	11
38.42	7	0.4	20.7	7	0.04	90.1	66.1	78.1	302.5	58.1	54.1	110.2	46	10.8
38.92	8	0.6	20.8	7	0.04	86.1	66.1	78.1	310.5	58.1	54.1	110.2	46	10.6
39.42	9	0.4	20.8	9	0.04	86.1	66.1	78.1	318.5	58.1	54.1	114.2	46	10.6
39.92	9	0.4	20.8	9	0.06	86.1	66.1	78.1	322.5	58.1	54.1	110.2	46	10.4
40.42	7	0.4	20.8	9	0.05	86.1	66.1	78.1	330.5	58.1	54.1	114.2	42	10.2
40.92	7	0.6	20.9	6	0.05	82.1	66.1	74.1	334.5	58.1	54.1	110.2	42	10.2
41.42	7	0.5	21.1	7	0.07	82.1	66.1	74.1	342.5	58.1	54.1	110.2	46	10
41.92	7	0.4	21	7	0.04	82.1	66.1	74.1	350.5	58.1	54.1	114.2	46	9.8
42.42	7	0.2	21	7	0.04	82.1	62.1	74.1	354.6	58.1	54.1	118.2	46	9.8
42.92	6	0.5	21	7	0.04	78.1	66.1	74.1	362.6	58.1	54.1	114.2	42	9.6
43.42	6	0.3	21	6	0.03	78.1	62.1	74.1	366.6	58.1	54.1	114.2	42	9.6
43.92	6	0.5	20.9	7	0.04	82.1	62.1	74.1	374.6	58.1	54.1	114.2	42	9.6
44.42	6	0.3	21	8	0.06	78.1	66.1	74.1	382.6	58.1	54.1	114.2	46	9.4
44.92	7	0.5	21.1	6	0.04	78.1	62.1	74.1	386.6	58.1	54.1	114.2	42	9.4
45.42	6	0.4	21	7	0.07	78.1	62.1	74.1	394.6	58.1	54.1	110.2	42	9.4
45.92	4	0.3	20.9	7	0.03	78.1	62.1	74.1	398.6	58.1	54.1	110.2	42	9.4
46.42	7	0.4	21.1	5	0.04	78.1	62.1	74.1	402.6	58.1	54.1	110.2	42	9.4
46.92	4	0.3	20.9	8	0.06	78.1	62.1	74.1	410.6	58.1	54.1	106.1	46	9.4
47.42	7	0.4	21	7	0.05	78.1	62.1	74.1	414.7	58.1	54.1	106.1	46	9.4
47.92	5	0.4	20.9	9	0.05	74.1	62.1	70.1	418.7	58.1	54.1	102.1	42	9.4
48.42	4	0.4	21	7	0.04	74.1	62.1	70.1	422.7	58.1	54.1	98.1	46	9.4
48.92	5	0.4	21	7	0.03	74.1	62.1	70.1	426.7	58.1	54.1	90.1	46	9.4
49.42	4	0.4	20.9	7	0.04	70.1	62.1	70.1	426.7	58.1	54.1	90.1	42	9.4

**Barrel Burning Test No. 1 CEM Data**

ET (MIN)	CO (PPM)	NOX (PPM)	O2 (%)	HC (PPM)	CO2 (%)	TEMP1 (C)	TEMP2 (C)	TEMP4 (C)	TEMP5 (C)	TEMP6 (C)	TEMP7 (C)	TEMP8 (C)	TEMP9 (C)	weight (LB)
49.92	7	0.3	21	8	0.05	70.1	62.1	70.1	430.7	58.1	54.1	90.1	42	9.4
50.42	7	0.5	21.1	9	0.03	70.1	62.1	70.1	430.7	58.1	54.1	90.1	42	9.4
50.92	6	0.5	20.9	6	0.03	66.1	62.1	70.1	434.7	58.1	54.1	90.1	42	9.6
51.42	7	0.5	21	7	0.04	66.1	62.1	70.1	434.7	54.1	54.1	86.1	42	9.6
51.92	6	0.4	21	7	0.04	66.1	62.1	66.1	434.7	54.1	54.1	82.1	42	9.6
52.42	9	0.4	21.1	9	0.05	66.1	58.1	70.1	434.7	58.1	54.1	82.1	42	9.6
52.92	8	0.4	21.1	8	0.04	66.1	58.1	66.1	438.7	58.1	54.1	82.1	42	9.8
53.42	9	0.3	21	7	0.03	66.1	58.1	66.1	438.7	58.1	54.1	82.1	42	9.6
53.92	7	0.3	20.9	8	0.03	66.1	58.1	66.1	438.7	58.1	54.1	82.1	42	9.8
54.42	9	0.5	20.9	9	0.06	66.1	58.1	66.1	438.7	54.1	54.1	78.1	42	9.8
54.92	8	0.5	21	9	0.07	66.1	58.1	66.1	434.7	54.1	54.1	78.1	46	9.8
55.42	6	0.3	21.1	8	0.04	66.1	58.1	66.1	438.7	54.1	54.1	78.1	42	9.8
55.92	5	0.3	20.9	7	0.04	62.1	58.1	66.1	438.7	54.1	54.1	74.1	42	9.8
56.42	7	0.2	21.1	8	0.03	66.1	58.1	66.1	438.7	54.1	54.1	74.1	42	9.8
56.92	6	0.4	21	7	0.04	62.1	58.1	66.1	438.7	54.1	54.1	70.1	42	9.8
57.42	6	0.4	21	8	0.04	62.1	58.1	66.1	438.7	54.1	54.1	70.1	42	9.8
57.92	8	0.3	21.1	7	0.04	62.1	58.1	66.1	434.7	54.1	54.1	66.1	42	9.8
58.42	5	0.3	21	7	0.02	62.1	58.1	62.1	434.7	54.1	54.1	66.1	42	9.8
58.92	4	0.4	20.9	8	0.03	62.1	58.1	62.1	434.7	54.1	54.1	66.1	42	9.8
59.42	4	0.3	21	8	0.03	62.1	58.1	62.1	430.7	54.1	54.1	62.1	46	9.8
59.92	7	0.3	21.1	5	0.03	62.1	58.1	62.1	430.7	54.1	50.1	66.1	42	10
60.42	8	0.4	21.1	7	0.03	58.1	54.1	62.1	430.7	54.1	54.1	62.1	42	9.8
60.92	10	0.4	21.1	6	0.04	58.1	54.1	62.1	430.7	54.1	50.1	58.1	42	9.8
61.42	8	0.4	21	7	0.04	58.1	54.1	62.1	426.7	54.1	54.1	58.1	42	9.8
61.92	5	0.4	21	7	0.03	58.1	54.1	62.1	426.7	54.1	54.1	58.1	42	9.8
62.42	6	0.3	20.9	7	0.04	58.1	54.1	62.1	426.7	54.1	54.1	58.1	46	9.6
62.92	6	0.5	21.1	6	0.03	58.1	54.1	58.1	422.7	54.1	50.1	58.1	46	9.8
63.42	7	0.2	21.1	8	0.04	58.1	54.1	62.1	422.7	54.1	54.1	58.1	42	9.8
63.92	5	0.4	21	6	0.03	58.1	54.1	62.1	418.7	54.1	54.1	58.1	42	9.6
64.42	2	0.4	20.9	6	0.03	58.1	54.1	62.1	418.7	54.1	54.1	62.1	42	9.8
64.92	6	0.4	21	6	0.03	58.1	54.1	58.1	418.7	54.1	54.1	58.1	42	9.6
65.42	6	0.5	21.1	5	0.03	58.1	54.1	58.1	414.7	54.1	50.1	58.1	42	9.4
65.92	7	0.3	21.1	5	0.03	58.1	54.1	58.1	414.7	54.1	50.1	58.1	50.1	9.8
66.42	6	0.3	21	6	0.02	58.1	54.1	58.1	410.6	54.1	54.1	58.1	42	9.8
66.92	5	0.2	20.9	6	0.04	58.1	54.1	58.1	410.6	54.1	54.1	58.1	46	9.6
67.42	4	0.5	21	5	0.02	58.1	54.1	62.1	410.6	54.1	54.1	58.1	46	9.6
67.92	6	0.4	21.1	7	0.04	58.1	54.1	58.1	410.6	54.1	54.1	58.1	46	9.6
68.42	7	0.4	21.2	6	0.04	58.1	54.1	58.1	410.6	54.1	54.1	58.1	42	9.4
68.92	6	0.3	21.1	5	0.04	54.1	54.1	58.1	406.6	54.1	54.1	58.1	42	9.6
69.42	5	0.4	21	4	0.02	58.1	50.1	58.1	406.6	58.1	54.1	58.1	46	9.6
69.92	6	0.4	20.9	4	0.02	58.1	54.1	58.1	402.6	54.1	54.1	58.1	46	9.6
70.42	5	0.5	20.9	4	0.02	58.1	54.1	58.1	402.6	54.1	54.1	58.1	46	9.6
70.92	6	0.4	20.9	6	0.04	58.1	54.1	58.1	402.6	54.1	54.1	58.1	46	9.6
71.42	7	0.5	21.1	5	0.04	58.1	54.1	58.1	398.6	54.1	54.1	58.1	46	9.6
71.92	6	0.4	21.1	6	0.02	54.1	54.1	58.1	402.6	54.1	54.1	54.1	46	9.6
72.42	7	0.4	21.1	5	0.04	54.1	54.1	58.1	402.6	54.1	54.1	54.1	46	9.6
72.92	5	0.2	21	6	0.04	54.1	54.1	58.1	398.6	58.1	54.1	54.1	46	9.6
73.42	5	0.4	20.9	6	0.02	54.1	54.1	58.1	394.6	54.1	54.1	54.1	46	9.6
73.92	6	0.4	21.1	6	0.03	54.1	46	58.1	394.6	54.1	54.1	54.1	46	9.6
74.42	5	0.4	21.1	5	0.03	54.1	54.1	58.1	394.6	54.1	54.1	54.1	46	9.6
74.92	3	0.2	21	4	0.02	54.1	50.1	58.1	394.6	54.1	54.1	58.1	46	9.6
75.42	7	0.2	21.2	7	0.04	58.1	54.1	58.1	390.6	54.1	54.1	58.1	46	9.4
75.92	5	0.4	21	4	0.02	58.1	54.1	58.1	394.6	54.1	54.1	54.1	46	9.4
76.42	6	0.4	21	4	0.02	54.1	54.1	58.1	390.6	54.1	54.1	54.1	46	9.4
76.92	6	0.3	21.1	4	0.02	54.1	54.1	58.1	390.6	54.1	54.1	58.1	46	9.6
77.42	5	0.4	21	4	0.02	54.1	54.1	58.1	390.6	58.1	54.1	54.1	46	9.6
77.92	2	0.3	21	4	0.04	54.1	54.1	58.1	390.6	54.1	54.1	54.1	46	9.4
78.42	5	0.2	21	5	0.03	58.1	54.1	58.1	390.6	54.1	54.1	54.1	46	9.6
78.92	18	0.4	19.2	5	0.02	54.1	54.1	58.1	386.6	54.1	54.1	54.1	46	9.2

**Barrel Burning Test No. 2 CEM Data**

ET (MIN)	CO (PPM)	NOX (PPM)	O2 (%)	HC (PPM)	CO2 (%)	TEMP1 (C)	TEMP2 (C)	TEMP4 (C)	TEMP5 (C)	TEMP6 (C)	TEMP7 (C)	TEMP8 (C)	Temp9 (C)	weight (LB)
-19.92	0	0.4	21.3	3	0.03	46	50.1	22	46	50.1	50.1	46	42	30
-19.42	1	0.5	21.3	2	0.02	46	50.1	26	46	50.1	50.1	46	42	30.2
-18.92	1	0.3	21.3	5	0.04	46	46	22	46	50.1	50.1	46	42	29.8
-18.42	-1	0.5	21	5	0.03	46	50.1	6	46	50.1	50.1	46	42	30
-17.92	-1	0.5	20.9	4	0.03	46	46	18	50.1	50.1	50.1	46	42	30
-17.42	1	0.4	21	4	0.03	46	46	18	46	50.1	50.1	42	42	30
-16.92	-1	0.6	21	4	0.04	46	46	18	46	50.1	50.1	46	42	30
-16.42	1	0.3	20.9	4	0.01	46	46	10	46	50.1	50.1	42	42	30
-15.92	0	0	20.9	5	0.03	46	46	2	50.1	50.1	50.1	46	42	30
-15.42	0	0.2	20.9	4	0.02	46	46	6	50.1	50.1	50.1	42	42	30
-14.92	2	0	20.9	5	0.03	46	46	6	50.1	50.1	50.1	42	42	30
-14.42	-1	0.1	20.8	5	0.02	46	46	6	46	50.1	50.1	46	42	30
-13.92	0	0	20.9	3	0.03	46	46	18	50.1	50.1	50.1	46	42	30
-13.42	-2	0	20.8	5	0.02	46	46	18	50.1	50.1	50.1	46	42	30
-12.92	0	-0.1	20.9	4	0.03	46	46	6	50.1	50.1	50.1	46	42	30
-12.42	1	-0.1	20.8	5	0.03	46	46	18	46	50.1	50.1	46	42	30
-11.92	-2	-0.1	20.8	3	0.01	46	46	18	50.1	54.1	50.1	46	42	30
-11.42	0	0	20.9	3	0.02	46	46	10	50.1	50.1	50.1	46	42	30
-10.92	0	0	20.8	5	0.02	46	50.1	18	46	50.1	50.1	46	42	30
-10.42	0	0	20.8	5	0.04	46	50.1	2	46	50.1	50.1	46	42	30
-9.92	-1	0	20.9	4	0.02	46	46	2	50.1	54.1	50.1	46	42	30
-9.42	0	-0.1	20.8	4	0.02	46	46	6	50.1	50.1	50.1	46	42	29.8
-8.92	-1	0	21	5	0.03	46	46	6	50.1	50.1	50.1	46	42	30
-8.42	0	0.1	20.9	4	0.01	46	46	2	50.1	50.1	50.1	46	42	30
-7.92	1	0	20.9	5	0.02	46	46	2	50.1	54.1	50.1	46	42	30
-7.42	2	0.1	20.9	5	0.02	46	46	14	46	50.1	50.1	46	42	30
-6.92	0	0	20.9	5	0.02	46	46	14	50.1	54.1	50.1	46	42	30
-6.42	1	0	20.9	5	0.02	46	50.1	22	50.1	50.1	50.1	46	42	29.8
-5.92	0	0.2	20.9	4	0	46	46	22	46	54.1	50.1	46	42	30
-5.42	2	0.1	20.9	3	0.03	46	46	22	46	50.1	50.1	46	42	29.8
-4.92	-1	0.1	20.8	4	0.02	46	46	22	50.1	54.1	50.1	46	42	30
-4.42	0	-0.1	20.9	4	0.01	46	46	22	46	50.1	50.1	46	42	30
-3.92	2	-0.1	20.9	5	0.02	46	46	2	50.1	54.1	50.1	46	42	30
-3.42	0	0	20.9	6	0.03	46	50.1	14	50.1	50.1	50.1	46	42	30
-2.92	1	0.1	20.9	5	0.02	46	46	14	50.1	54.1	50.1	46	42	29.8
-2.42	1	0	20.9	4	0.04	46	50.1	26	50.1	50.1	50.1	46	42	30
-1.92	0	0	20.9	3	0.02	46	46	26	46	50.1	50.1	42	42	30
-1.42	0	0	20.9	4	0.02	46	46	22	46	50.1	50.1	46	42	30
-0.92	1	0.2	20.8	4	0.02	46	46	22	50.1	54.1	50.1	46	42	30
-0.42	1	0	20.9	5	0.02	46	50.1	18	46	50.1	50.1	46	42	29.8
0.08	0	0.2	20.9	4	0.02	46	46	2	46	54.1	50.1	46	42	29.8
0.58	-1	0	20.8	6	0.02	50.1	46	2	46	50.1	50.1	46	42	30
1.08	0	0.1	20.9	3	0.01	50.1	46	22	50.1	50.1	50.1	50.1	42	30
1.58	0	0.2	20.9	4	0.03	58.1	46	10	50.1	50.1	50.1	54.1	42	29.6
2.08	1	0.2	20.8	4	0.02	74.1	46	10	46	50.1	50.1	62.1	42	29.4
2.58	2	0.4	21	6	0.04	102.1	46	10	50.1	50.1	50.1	102.1	42	29.2
3.08	5	0.7	20.7	7	0.04	134.2	50.1	10	46	50.1	50.1	190.3	42	29
3.58	8	1.2	20.8	5	0.04	154.2	42	14	50.1	54.1	50.1	222.3	42	28.6
4.08	2	0.9	20.6	5	0.05	166.2	42	14	50.1	54.1	50.1	214.3	42	28.2
4.58	5	0.7	20.7	6	0.07	170.3	42	18	50.1	54.1	50.1	226.3	42	28
5.08	4	0.9	20.7	5	0.08	162.2	42	10	46	54.1	50.1	206.3	42	27.8
5.58	6	0.9	20.5	4	0.08	158.2	46	2	46	54.1	50.1	202.3	42	27.2
6.08	4	0.8	20.7	7	0.08	162.2	42	2	50.1	54.1	50.1	206.3	42	27
6.58	3	0.8	20.8	7	0.07	158.2	42	6	50.1	54.1	50.1	198.3	42	26.6
7.08	7	0.7	20.8	7	0.09	150.2	46	10	50.1	54.1	50.1	194.3	42	26.4
7.58	10	0.7	20.8	10	0.09	146.2	46	14	50.1	54.1	50.1	206.3	42	26.2
8.08	12	0.8	20.7	15	0.08	146.2	46	6	50.1	54.1	50.1	198.3	42	25.8
8.58	20	0.6	20.6	14	0.08	146.2	46	18	50.1	54.1	50.1	230.4	42	25.6
9.08	20	0.7	20.8	13	0.09	146.2	46	46	50.1	54.1	54.1	250.4	42	25.2
9.58	20	0.7	20.7	17	0.08	150.2	46	14	50.1	54.1	50.1	234.4	42	25
10.08	22	0.4	20.7	15	0.09	150.2	50.1	46	50.1	54.1	50.1	226.3	42	24.6
10.58	22	0.6	20.9	11	0.08	150.2	50.1	54.1	50.1	54.1	54.1	214.3	42	24.2
11.08	20	0.5	20.9	11	0.08	146.2	50.1	46	50.1	54.1	50.1	206.3	42	24.2
11.58	20	0.4	20.9	16	0.09	158.2	50.1	50.1	50.1	54.1	54.1	230.4	42	23.6
12.08	26	0.7	20.8	14	0.08	162.2	54.1	46	50.1	54.1	54.1	226.3	42	23.4
12.58	23	0.6	20.8	14	0.07	170.3	54.1	46	50.1	54.1	50.1	238.4	42	22.8
13.08	22	0.7	20.9	13	0.09	174.3	54.1	54.1	50.1	54.1	54.1	250.4	42	22.6
13.58	21	0.6	20.9	10	0.09	178.3	54.1	54.1	50.1	54.1	54.1	246.4	42	22
14.08	17	0.7	20.9	10	0.1	178.3	54.1	54.1	50.1	54.1	54.1	246.4	42	21.8
14.58	16	0.7	20.8	10	0.09	178.3	54.1	62.1	50.1	54.1	54.1	242.4	42	21.2

**Barrel Burning Test No. 2 CEM Data**

ET (MIN)	CO (PPM)	NOX (PPM)	O2 (%)	HC (PPM)	CO2 (%)	TEMP1 (C)	TEMP2 (C)	TEMP4 (C)	TEMP5 (C)	TEMP6 (C)	TEMP7 (C)	TEMP8 (C)	Temp9 (C)	weight (LB)
15.08	18	0.7	20.7	8	0.09	174.3	54.1	62.1	50.1	54.1	54.1	250.4	42	21
15.58	16	0.6	20.7	10	0.08	178.3	54.1	50.1	50.1	54.1	54.1	302.5	42	20.6
16.08	16	0.8	20.7	8	0.08	186.3	54.1	42	50.1	54.1	54.1	322.5	42	20.2
16.58	13	0.7	20.7	8	0.08	190.3	58.1	62.1	50.1	54.1	50.1	334.5	42	19.6
17.08	11	0.7	20.8	8	0.09	194.3	58.1	66.1	54.1	54.1	54.1	346.5	42	19.2
17.58	10	0.8	20.7	7	0.11	194.3	54.1	38	54.1	58.1	54.1	358.6	42	18.8
18.08	7	0.8	20.6	7	0.08	198.3	58.1	30	54.1	54.1	50.1	402.6	42	18.2
18.58	10	0.9	20.6	8	0.1	202.3	58.1	34	54.1	54.1	54.1	402.6	42	17.8
19.08	11	0.8	20.7	8	0.09	206.3	58.1	58.1	54.1	54.1	50.1	414.7	42	17.4
19.58	11	0.8	20.8	7	0.11	198.3	62.1	82.1	58.1	54.1	54.1	422.7	42	16.8
20.08	9	0.7	20.7	7	0.1	190.3	58.1	58.1	58.1	54.1	54.1	418.7	46	16.8
20.58	7	0.7	20.6	7	0.11	190.3	58.1	46	62.1	54.1	54.1	438.7	42	16.4
21.08	9	0.8	20.8	7	0.09	194.3	62.1	78.1	62.1	54.1	54.1	442.7	46	16.2
21.58	10	0.6	20.8	6	0.11	198.3	62.1	78.1	66.1	58.1	54.1	446.7	46	16
22.08	9	0.8	20.7	6	0.07	202.3	62.1	50.1	70.1	58.1	54.1	514.8	46	15.8
22.58	10	0.7	20.7	7	0.09	202.3	62.1	86.1	70.1	58.1	54.1	506.8	46	15.4
23.08	10	0.9	20.8	6	0.1	202.3	62.1	82.1	74.1	58.1	50.1	486.8	42	15
23.58	8	0.7	20.7	7	0.08	198.3	62.1	66.1	78.1	58.1	54.1	450.7	46	14.6
24.08	9	0.6	20.8	8	0.08	194.3	66.1	102.1	82.1	58.1	54.1	434.7	46	14.6
24.58	9	0.6	20.8	7	0.07	190.3	62.1	78.1	90.1	54.1	54.1	406.6	46	14.6
25.08	10	0.4	20.7	8	0.09	186.3	62.1	90.1	94.1	58.1	54.1	410.6	46	14.4
25.58	13	0.6	20.8	5	0.09	182.3	66.1	118.2	98.1	54.1	54.1	402.6	46	14
26.08	10	0.4	20.9	7	0.08	182.3	70.1	114.2	106.1	58.1	54.1	406.6	46	13.8
26.58	9	0.5	20.8	8	0.08	178.3	66.1	94.1	114.2	58.1	54.1	378.6	46	13.6
27.08	9	0.5	20.7	8	0.07	174.3	66.1	90.1	114.2	58.1	54.1	378.6	46	13.4
27.58	9	0.4	20.7	8	0.06	174.3	66.1	98.1	118.2	58.1	50.1	366.6	42	13.2
28.08	12	0.3	20.8	7	0.07	170.3	66.1	122.2	118.2	58.1	54.1	334.5	46	13
28.58	9	0.3	20.8	7	0.05	170.3	66.1	130.2	118.2	58.1	54.1	342.5	46	13
29.08	10	0.3	20.8	7	0.06	166.2	66.1	134.2	122.2	58.1	54.1	346.5	46	12.8
29.58	10	0.5	20.8	6	0.04	166.2	66.1	134.2	122.2	58.1	54.1	358.6	46	12.6
30.08	9	0.4	20.8	6	0.05	166.2	66.1	150.2	126.2	58.1	54.1	342.5	46	12.6
30.58	10	0.5	20.9	7	0.06	162.2	70.1	166.2	126.2	58.1	54.1	330.5	46	12.2
31.08	9	0.4	20.8	6	0.05	162.2	70.1	150.2	130.2	58.1	54.1	322.5	46	12.2
31.58	8	0.4	20.9	7	0.06	158.2	70.1	154.2	130.2	58.1	54.1	290.4	46	12.2
32.08	7	0.4	20.9	7	0.05	154.2	66.1	162.2	134.2	58.1	54.1	298.5	46	12
32.58	9	0.4	20.9	7	0.04	154.2	70.1	166.2	134.2	54.1	54.1	290.4	42	11.6
33.08	9	0.4	20.9	7	0.04	150.2	66.1	166.2	138.2	54.1	54.1	278.4	46	11.6
33.58	8	0.4	20.8	7	0.04	150.2	70.1	162.2	142.2	58.1	54.1	278.4	46	11.6
34.08	7	0.5	20.8	6	0.04	146.2	66.1	162.2	142.2	58.1	54.1	274.4	46	11.4
34.58	7	0.4	20.9	7	0.04	146.2	70.1	166.2	142.2	58.1	54.1	266.4	46	11.2
35.08	7	0.5	20.9	5	0.04	142.2	66.1	174.3	146.2	54.1	54.1	246.4	46	11.2
35.58	7	0.5	20.9	6	0.04	142.2	-38.1	174.3	150.2	58.1	54.1	230.4	46	11.2
36.08	6	0.5	20.9	6	0.04	138.2	66.1	170.3	150.2	54.1	54.1	238.4	46	11
36.58	5	0.3	20.9	5	0.04	138.2	66.1	178.3	154.2	54.1	54.1	222.3	46	11
37.08	6	0.3	20.9	5	0.03	134.2	66.1	194.3	154.2	58.1	54.1	218.3	46	11
37.58	6	0.3	20.9	5	0.02	130.2	66.1	186.3	158.2	54.1	54.1	218.3	46	11
38.08	5	0.2	20.9	6	0.02	130.2	66.1	178.3	158.2	54.1	54.1	210.3	42	10.8
38.58	5	0.3	20.9	7	0.04	126.2	66.1	170.3	162.2	58.1	54.1	194.3	46	10.8
39.08	6	0.2	20.9	7	0.05	126.2	66.1	182.3	162.2	54.1	54.1	190.3	46	10.8
39.58	8	0.3	21	5	0.04	122.2	66.1	194.3	162.2	54.1	54.1	178.3	46	10.6
40.08	6	0.4	20.9	6	0.02	118.2	66.1	166.2	166.2	58.1	54.1	186.3	46	10.6
40.58	9	0.2	21	5	0.02	114.2	66.1	190.3	170.3	54.1	54.1	194.3	42	10.6
41.08	9	0.2	20.8	5	0.04	114.2	66.1	162.2	170.3	54.1	54.1	182.3	46	10.4
41.58	9	0.1	21	6	0.04	110.2	66.1	198.3	174.3	54.1	54.1	178.3	46	10.4
42.08	4	0.4	20.9	4	0.02	106.1	62.1	154.2	174.3	54.1	50.1	178.3	42	10.4
42.58	7	0.3	21	5	0.04	106.1	66.1	190.3	178.3	54.1	54.1	162.2	42	10.4
43.08	6	0.1	21	7	0.04	102.1	66.1	194.3	178.3	54.1	54.1	166.2	42	10.4
43.58	9	0.3	21	5	0.04	98.1	66.1	190.3	182.3	54.1	54.1	154.2	46	10.4
44.08	8	0.1	20.9	5	0.01	94.1	62.1	186.3	182.3	54.1	54.1	146.2	46	10.4
44.58	6	0.2	20.9	5	0.02	94.1	66.1	178.3	186.3	54.1	54.1	146.2	46	10.4
45.08	7	0.2	21	5	0.03	90.1	62.1	166.2	186.3	54.1	54.1	150.2	46	10.4
45.58	4	0.4	20.9	5	0.02	86.1	62.1	150.2	190.3	54.1	54.1	146.2	46	10.4
46.08	4	0.2	21	7	0.02	86.1	62.1	146.2	190.3	54.1	54.1	150.2	46	10.4
46.58	3	0.3	21	5	0.02	82.1	62.1	150.2	194.3	54.1	54.1	142.2	46	10.2
47.08	5	0.3	21	6	0.04	82.1	62.1	162.2	194.3	54.1	54.1	146.2	46	10
47.58	5	0.1	21	6	0.02	78.1	62.1	174.3	194.3	54.1	54.1	154.2	42	10.2
48.08	4	0.2	21	4	0	78.1	62.1	162.2	198.3	54.1	54.1	150.2	46	10.2
48.58	0	0.2	20.9	4	0.02	78.1	62.1	142.2	198.3	54.1	54.1	142.2	46	10.2
49.08	3	0.4	21	4	0.02	74.1	62.1	142.2	202.3	54.1	54.1	142.2	42	10.2
49.58	2	0.2	21.1	6	0.03	74.1	58.1	162.2	206.3	54.1	54.1	142.2	46	10.2

**Barrel Burning Test No. 2 CEM Data**

ET (MIN)	CO (PPM)	NOX (PPM)	O2 (%)	HC (PPM)	CO2 (%)	TEMP1 (C)	TEMP2 (C)	TEMP4 (C)	TEMP5 (C)	TEMP6 (C)	TEMP7 (C)	TEMP8 (C)	Temp9 (C)	weight (LB)
50.08	4	0.2	21.1	6	0.02	74.1	58.1	170.3	206.3	54.1	54.1	138.2	42	10.2
50.58	3	0.2	21.1	4	0.02	70.1	58.1	170.3	206.3	54.1	54.1	134.2	46	10
51.08	4	0.1	20.9	4	0.01	70.1	58.1	162.2	210.3	54.1	54.1	130.2	42	10
51.58	3	0.1	21	6	0.02	70.1	58.1	166.2	210.3	54.1	54.1	122.2	46	10
52.08	3	0.2	21.1	5	0.02	70.1	58.1	170.3	214.3	54.1	50.1	122.2	42	10
52.58	2	0.1	21.1	4	0	70.1	58.1	170.3	218.3	54.1	54.1	122.2	42	10
53.08	6	0.2	21.1	3	0.03	70.1	58.1	162.2	218.3	54.1	54.1	122.2	46	10
53.58	5	0.2	21	5	0.04	66.1	58.1	138.2	218.3	54.1	54.1	114.2	46	10
54.08	1	0.2	21	4	0.03	66.1	58.1	138.2	222.3	54.1	54.1	110.2	46	9.8
54.58	3	0.2	21.1	3	0.02	66.1	58.1	138.2	222.3	54.1	54.1	106.1	46	10
55.08	4	0.2	21.1	5	0.03	66.1	58.1	150.2	226.3	54.1	54.1	106.1	46	10
55.58	4	0	21.2	5	0.02	66.1	58.1	158.2	226.3	54.1	54.1	106.1	46	9.8
56.08	5	0.2	21.1	4	0	66.1	58.1	162.2	230.4	54.1	54.1	102.1	46	10
56.58	4	0.1	21	5	0.01	66.1	58.1	150.2	230.4	54.1	54.1	98.1	46	9.8
57.08	5	0.3	21	5	0.02	66.1	58.1	138.2	230.4	54.1	54.1	94.1	46	9.8
57.58	2	0.2	20.9	5	0.01	66.1	58.1	122.2	234.4	54.1	54.1	90.1	46	9.8
58.08	4	0.2	20.9	5	0.02	66.1	58.1	122.2	234.4	54.1	54.1	90.1	46	9.8
58.58	4	0.1	20.9	5	0	62.1	58.1	122.2	234.4	54.1	54.1	86.1	46	9.8
59.08	3	0.2	20.9	5	0.01	66.1	58.1	118.2	238.4	54.1	54.1	86.1	46	9.8
59.58	5	0.2	20.9	5	0.02	62.1	58.1	118.2	238.4	54.1	54.1	82.1	46	9.8
60.08	2	0.2	20.9	6	0.01	58.1	54.1	114.2	242.4	54.1	54.1	82.1	46	9.8
60.58	4	0.3	20.9	4	0.02	62.1	54.1	114.2	242.4	54.1	54.1	78.1	46	9.8
61.08	3	0.1	20.9	7	0.01	62.1	54.1	122.2	234.4	54.1	54.1	82.1	46	10
61.58	5	0.2	21	6	0.02	62.1	50.1	126.2	246.4	54.1	54.1	78.1	46	9.8
62.08	4	0.2	21	4	0.01	62.1	54.1	126.2	250.4	54.1	54.1	78.1	46	9.8
62.58	7	0.2	21	5	0.02	62.1	54.1	126.2	250.4	54.1	54.1	78.1	46	9.8
63.08	5	0.2	21	5	0.02	62.1	54.1	122.2	250.4	54.1	54.1	78.1	46	9.6
63.58	4	0.2	21	7	0.03	62.1	54.1	114.2	254.4	54.1	54.1	78.1	46	9.8
64.08	6	0.3	21.1	6	0.03	62.1	54.1	130.2	254.4	54.1	54.1	82.1	46	9.6
64.58	7	0.2	21.1	5	0.03	62.1	54.1	142.2	258.4	54.1	54.1	78.1	46	9.8
65.08	4	0.2	21	7	0.02	62.1	54.1	118.2	258.4	54.1	54.1	78.1	46	9.8
65.58	5	0.2	21	6	0.03	62.1	54.1	110.2	262.4	54.1	54.1	74.1	46	9.8
66.08	4	0.2	20.9	6	0.03	58.1	54.1	106.1	262.4	54.1	54.1	74.1	42	9.8
66.58	5	0.1	21	6	0.01	58.1	54.1	114.2	266.4	54.1	54.1	70.1	46	9.8
67.08	5	0.1	21.1	6	0.02	58.1	54.1	142.2	266.4	54.1	54.1	70.1	46	9.8
67.58	6	0.3	21.1	5	0.02	58.1	54.1	122.2	266.4	54.1	54.1	70.1	42	9.8
68.08	5	0.1	21	7	0.02	58.1	54.1	118.2	270.4	54.1	54.1	70.1	46	9.8
68.58	7	0.2	21.1	4	0.02	58.1	54.1	146.2	270.4	54.1	54.1	70.1	46	9.8
69.08	6	0.2	21.2	5	0.02	58.1	54.1	138.2	274.4	54.1	54.1	70.1	46	9.8
69.58	6	0.2	21.1	7	0.02	58.1	54.1	134.2	274.4	54.1	54.1	70.1	46	9.8
70.08	4	0.2	21.1	7	0.02	58.1	54.1	114.2	274.4	54.1	54.1	70.1	46	9.8
70.58	5	0.3	21	6	0.02	58.1	54.1	110.2	278.4	54.1	54.1	70.1	46	9.8
71.08	3	0.2	21	4	0.03	58.1	42	110.2	278.4	54.1	54.1	70.1	46	9.8
71.58	3	0.3	21	5	0.03	58.1	54.1	106.1	282.4	54.1	54.1	70.1	46	9.8
72.08	3	0.4	21	7	0.02	58.1	54.1	106.1	282.4	54.1	54.1	70.1	46	9.6
72.58	3	0.3	21.1	5	0.02	58.1	54.1	110.2	282.4	54.1	54.1	70.1	46	9.8
73.08	5	0.3	21.1	4	0.02	58.1	54.1	122.2	286.4	54.1	54.1	70.1	46	9.8
73.58	4	0.3	21.1	5	0.03	58.1	54.1	130.2	286.4	54.1	54.1	66.1	46	9.6
74.08	8	0.2	21.2	5	0.02	58.1	54.1	142.2	290.4	54.1	54.1	66.1	46	9.8
74.58	6	0.1	21.2	6	0.02	58.1	50.1	146.2	286.4	54.1	54.1	66.1	46	9.8
75.08	6	0.1	21.2	7	0.03	58.1	50.1	142.2	290.4	54.1	54.1	66.1	46	9.6
75.58	5	0.2	21.1	7	0.03	58.1	50.1	122.2	290.4	54.1	54.1	66.1	46	9.8
76.08	4	0.2	21	4	0.02	58.1	54.1	106.1	290.4	54.1	54.1	66.1	46	9.6
76.58	7	0.2	21.1	5	0.03	58.1	50.1	142.2	294.5	54.1	54.1	66.1	42	9.6
77.08	6	0.3	21	4	0.02	58.1	50.1	114.2	294.5	54.1	54.1	66.1	46	9.4
77.58	6	0.2	21.1	7	0.01	58.1	50.1	134.2	294.5	54.1	54.1	66.1	46	9.6
78.08	6	0.2	21.1	6	0.01	58.1	50.1	122.2	298.5	54.1	54.1	66.1	46	9.8
78.58	7	0.3	21	7	0.02	58.1	50.1	102.1	298.5	54.1	54.1	66.1	46	9.6
79.08	2	0.2	21	7	0.03	58.1	50.1	102.1	302.5	54.1	54.1	66.1	46	9.6
79.58	4	0.2	21	5	0.02	58.1	50.1	102.1	302.5	54.1	54.1	66.1	46	9.6

**Barrel Burning Test No. 4 CEM Data**

ET (MIN)	CO (PPM)	NOX (PPM)	O2 (%)	HC (PPM)	CO2 (%)	TEMP1 (C)	TEMP2 (C)	TEMP4 (C)	TEMP5 (C)	TEMP6 (C)	TEMP7 (C)	TEMP8 (C)	TEMP9 (C)	weight (LB)
-19.73	5	0.1	21.7	6	0.02	46	46	0	46	42	50.1	42	38	14.2
-19.23	2	0	21.6	7	0.02	46	46	0	46	42	50.1	42	42	15
-18.73	2	0	21.6	8	0.04	46	46	0	46	42	46	42	38	15
-18.23	3	0	21.7	7	0.03	46	46	0	46	42	50.1	42	42	15
-17.73	4	0.1	21.7	5	0.03	46	46	0	46	42	46	42	38	15
-17.23	4	0	21.7	6	0.03	42	46	0	46	42	46	42	38	15
-16.73	4	-0.2	21.7	7	0.03	46	46	0	50.1	42	46	42	38	15
-16.23	6	0	21.6	7	0.02	46	46	0	50.1	42	50.1	42	42	15
-15.73	4	0	21.6	6	0.03	46	46	0	50.1	42	46	42	42	15
-15.23	2	0	21.6	5	0.02	46	46	0	46	42	46	42	42	15
-14.73	5	0	21.7	5	0.02	46	46	0	50.1	46	50.1	42	42	15
-14.23	6	-0.1	21.6	5	0	46	46	0	50.1	42	50.1	42	42	15
-13.73	3	0	21.6	7	0.02	46	46	0	50.1	42	50.1	42	42	15
-13.23	4	0	21.7	7	0.02	46	42	0	50.1	42	50.1	42	42	15
-12.73	4	0	21.6	7	0.02	46	46	0	50.1	42	50.1	42	38	15
-12.23	4	0	21.6	7	0.02	46	46	0	50.1	42	50.1	42	38	15
-11.73	4	-0.1	21.7	9	0.03	46	46	0	50.1	42	50.1	42	38	15
-11.23	3	-0.1	21.6	7	0.01	46	46	0	50.1	42	50.1	42	38	15
-10.73	5	0	21.7	8	0.04	46	46	0	50.1	42	46	42	38	15
-10.23	7	0.1	21.7	8	0.02	46	46	0	50.1	42	50.1	42	38	15
-9.73	3	0	21.6	6	0.02	42	46	0	50.1	42	50.1	42	38	15
-9.23	2	0	21.5	6	0.02	46	46	0	50.1	42	46	42	38	15
-8.73	2	0.2	21.6	7	0.02	46	46	0	50.1	42	46	42	42	15
-8.23	3	0	21.6	7	0.01	46	46	0	50.1	42	50.1	42	38	15
-7.73	3	0	21.6	8	0.02	46	46	0	50.1	42	46	42	38	15
-7.23	4	0.2	21.7	5	0.03	42	46	0	50.1	42	46	42	38	15
-6.73	4	0.1	21.6	5	0.01	42	46	0	50.1	42	46	42	38	15
-6.23	4	-0.1	21.7	7	0.03	42	46	0	46	42	46	42	38	15
-5.73	5	0.2	21.6	7	0.01	42	42	0	50.1	42	46	42	38	15
-5.23	4	-0.1	21.6	7	0.02	42	42	0	50.1	42	46	42	38	15
-4.73	3	0	21.5	7	0.01	42	42	0	50.1	42	46	42	38	15
-4.23	3	0.1	21.5	6	0.02	42	46	0	50.1	42	46	42	38	15
-3.73	3	0	21.5	7	0.02	42	42	0	50.1	42	46	46	38	15
-3.23	6	0	21.6	7	0.02	46	42	0	50.1	42	46	42	38	15
-2.73	4	0	21.6	7	0.01	42	42	0	50.1	42	46	42	38	14.8
-2.23	3	-0.1	21.6	7	0.02	42	42	0	50.1	42	46	42	38	14.8
-1.73	4	-0.2	21.6	8	0.02	42	42	0	50.1	42	46	46	38	14.8
-1.23	6	0	21.6	7	0.02	42	42	0	50.1	46	46	50.1	38	15
-0.73	3	0.1	21.5	7	0.02	50.1	42	0	50.1	50.1	46	70.1	38	14.4
-0.23	3	0.4	21.6	8	0.02	74.1	42	0	50.1	50.1	46	90.1	38	14.2
0.27	14	0.5	21.5	12	0.04	94.1	46	0	54.1	50.1	42	102.1	38	13.8
0.77	24	0.7	21.4	13	0.03	106.1	46	0	58.1	54.1	46	170.3	38	13.2
1.27	20	0.7	21.4	10	0.05	126.2	42	0	70.1	58.1	46	302.5	38	12.6
1.77	13	0.9	21.4	9	0.05	138.2	42	0	78.1	62.1	46	318.5	38	12
2.27	13	0.9	21.4	8	0.07	142.2	42	0	82.1	66.1	46	310.5	38	11.6
2.77	13	1.1	21.3	10	0.08	146.2	46	0	114.2	66.1	46	290.4	38	11.6
3.27	15	1.1	21.3	9	0.08	150.2	46	0	186.3	70.1	46	274.4	38	11.4
3.77	20	1.5	21.3	12	0.09	150.2	46	0	246.4	74.1	46	262.4	38	11.2
4.27	22	1.1	21.3	13	0.11	150.2	46	0	306.5	74.1	46	258.4	38	11.2
4.77	25	1.3	21.3	13	0.09	146.2	46	0	378.6	74.1	46	250.4	38	11.4
5.27	22	1.1	21.4	12	0.1	146.2	50.1	0	478.8	74.1	46	242.4	38	11.4
5.77	24	1	21.4	13	0.11	142.2	50.1	0	570.9	78.1	46	238.4	38	11.4
6.27	22	0.8	21.3	13	0.09	142.2	50.1	0	639	78.1	50.1	234.4	38	10.6
6.77	21	0.6	21.5	14	0.11	142.2	54.1	0	683.1	78.1	46	222.3	38	10.2
7.27	21	1	21.5	11	0.09	142.2	54.1	0	703.1	78.1	50.1	234.4	38	9.8
7.77	20	0.8	21.3	12	0.09	146.2	54.1	0	723.2	78.1	50.1	270.4	38	9.2
8.27	18	0.7	21.4	10	0.08	150.2	54.1	0	727.2	82.1	50.1	254.4	38	8.8
8.77	22	0.8	21.4	11	0.1	150.2	54.1	0	727.2	82.1	50.1	246.4	38	8.8
9.27	20	0.6	21.6	12	0.09	150.2	58.1	0	731.2	82.1	46	254.4	38	8.2
9.77	18	0.7	21.5	11	0.09	150.2	58.1	0	735.2	82.1	50.1	258.4	38	8
10.27	18	0.8	21.4	11	0.08	150.2	58.1	0	731.2	82.1	50.1	238.4	38	7.8
10.77	17	0.7	21.4	11	0.09	146.2	58.1	0	731.2	82.1	46	222.3	38	7.6
11.27	16	0.6	21.4	13	0.09	146.2	58.1	0	727.2	82.1	46	214.3	38	7.4
11.77	14	0.4	21.4	13	0.09	146.2	62.1	0	747.2	82.1	50.1	226.3	38	7.4
12.27	17	0.4	21.4	13	0.07	142.2	62.1	0	755.2	86.1	50.1	222.3	38	7.2
12.77	18	0.4	21.6	15	0.09	138.2	62.1	0	763.2	86.1	50.1	222.3	38	7
13.27	22	0.4	21.5	15	0.09	134.2	62.1	0	767.2	86.1	50.1	226.3	38	7
13.77	20	0.5	21.4	13	0.07	134.2	62.1	0	775.2	90.1	50.1	218.3	38	6.8
14.27	21	0.4	21.6	16	0.09	126.2	62.1	0	787.3	90.1	50.1	202.3	38	6.8
14.77	23	0.4	21.7	16	0.07	122.2	62.1	0	791.3	90.1	50.1	182.3	38	6.8

**Barrel Burning Test No. 4 CEM Data**

ET (MIN)	CO (PPM)	NOX (PPM)	O2 (%)	HC (PPM)	CO2 (%)	TEMP1 (C)	TEMP2 (C)	TEMP4 (C)	TEMP5 (C)	TEMP6 (C)	TEMP7 (C)	TEMP8 (C)	TEMP9 (C)	weight (LB)
15.27	26	0.4	21.7	16	0.08	118.2	62.1	0	787.3	90.1	50.1	162.2	38	6.8
15.77	27	0.2	21.6	21	0.08	114.2	62.1	0	783.3	90.1	50.1	150.2	38	6.6
16.27	27	0.4	21.5	18	0.07	106.1	62.1	0	771.2	86.1	46	150.2	38	6.6
16.77	27	0.2	21.5	18	0.08	102.1	62.1	0	767.2	86.1	46	142.2	38	6.6
17.27	31	0.2	21.7	17	0.07	98.1	62.1	0	759.2	86.1	46	134.2	38	6.6
17.77	25	0.1	21.6	17	0.07	98.1	62.1	0	751.2	78.1	46	126.2	38	6.4
18.27	24	0	21.6	15	0.07	94.1	62.1	0	739.2	74.1	50.1	122.2	38	6.4
18.77	23	0.3	21.7	14	0.06	90.1	62.1	0	723.2	74.1	50.1	118.2	38	6.6
19.27	24	0.2	21.6	16	0.07	90.1	66.1	0	711.1	70.1	50.1	114.2	38	6.4
19.77	23	0.2	21.5	14	0.06	86.1	62.1	0	679.1	70.1	50.1	114.2	38	6.4
20.27	22	0.2	21.5	12	0.05	86.1	62.1	0	643	70.1	50.1	110.2	38	6.4
20.77	24	0	21.4	14	0.06	82.1	62.1	0	611	70.1	50.1	106.1	38	6.4
21.27	23	0	21.5	12	0.05	78.1	62.1	0	586.9	66.1	50.1	102.1	38	6.6
21.77	22	0	21.5	12	0.05	78.1	62.1	0	558.9	66.1	50.1	98.1	38	6.6
22.27	20	0	21.5	13	0.07	78.1	62.1	0	530.8	66.1	50.1	94.1	38	6.6
22.77	21	0	21.6	13	0.07	74.1	62.1	0	498.8	66.1	50.1	94.1	38	6.8
23.27	20	0	21.6	11	0.04	70.1	58.1	0	458.7	62.1	50.1	90.1	38	6.6
23.77	18	-0.1	21.5	11	0.05	70.1	58.1	0	434.7	62.1	50.1	82.1	38	6.8
24.27	16	0	21.5	11	0.05	70.1	58.1	0	402.6	62.1	50.1	78.1	38	6.8
24.77	17	0.2	21.6	12	0.05	66.1	62.1	0	378.6	62.1	50.1	78.1	38	6.6
25.27	15	0	21.4	11	0.04	66.1	58.1	0	354.6	62.1	50.1	78.1	38	6.8
25.77	15	0	21.4	10	0.03	62.1	58.1	0	338.5	58.1	50.1	74.1	38	7
26.27	15	0.2	21.6	10	0.04	66.1	58.1	0	326.5	58.1	50.1	70.1	38	6.6
26.77	16	-0.1	21.6	10	0.03	62.1	58.1	0	310.5	58.1	50.1	70.1	38	7
27.27	16	0.1	21.6	9	0.03	62.1	58.1	0	290.4	58.1	50.1	70.1	42	7
27.77	13	0.2	21.5	9	0.04	62.1	58.1	0	282.4	58.1	50.1	70.1	38	6.8
28.27	13	-0.1	21.6	11	0.04	62.1	58.1	0	270.4	54.1	50.1	66.1	38	7
28.77	16	0	21.6	11	0.05	58.1	54.1	0	262.4	58.1	50.1	66.1	38	7
29.27	11	0	21.5	10	0.04	58.1	54.1	0	250.4	54.1	50.1	66.1	42	7
29.77	12	0	21.5	10	0.04	58.1	54.1	0	242.4	54.1	50.1	62.1	38	7
30.27	12	0.1	21.6	8	0.04	58.1	54.1	0	230.4	54.1	50.1	62.1	38	7
30.77	14	0.1	21.6	8	0.02	58.1	54.1	0	222.3	54.1	50.1	62.1	38	7
31.27	13	0.1	21.6	9	0.02	58.1	54.1	0	218.3	54.1	50.1	62.1	38	7
31.77	12	0	21.5	9	0.04	58.1	54.1	0	210.3	54.1	50.1	62.1	42	7
32.27	11	0.1	21.6	9	0.04	58.1	54.1	0	202.3	54.1	50.1	58.1	42	7
32.77	10	0	21.5	9	0.02	58.1	54.1	0	198.3	54.1	50.1	58.1	38	7
33.27	13	-0.1	21.6	9	0.04	54.1	54.1	0	190.3	54.1	50.1	58.1	38	7
33.77	12	0	21.7	8	0.04	54.1	54.1	0	186.3	54.1	50.1	58.1	38	7
34.27	12	0	21.6	8	0.04	54.1	54.1	0	182.3	50.1	50.1	54.1	38	7
34.77	9	0.1	21.5	9	0.03	54.1	54.1	0	174.3	50.1	50.1	54.1	38	7
35.27	10	0.3	21.6	9	0.02	54.1	50.1	0	174.3	50.1	50.1	54.1	38	7
35.77	11	0	21.6	10	0.03	54.1	50.1	0	170.3	50.1	50.1	54.1	38	7
36.27	11	0	21.7	8	0.04	54.1	50.1	0	166.2	50.1	50.1	54.1	38	7
36.77	11	0	21.6	7	0.04	54.1	50.1	0	162.2	50.1	50.1	54.1	38	7
37.27	11	0.1	21.6	7	0.02	54.1	50.1	0	158.2	50.1	50.1	54.1	38	7
37.77	11	0.1	21.7	9	0.04	50.1	50.1	0	154.2	50.1	50.1	54.1	38	7
38.27	9	0	21.6	10	0.05	50.1	50.1	0	150.2	50.1	46	54.1	38	7
38.77	8	0.2	21.6	7	0.03	54.1	50.1	0	142.2	50.1	50.1	54.1	38	7
39.27	8	-0.1	21.4	9	0.02	50.1	50.1	0	138.2	50.1	50.1	54.1	38	7
39.77	9	0.1	21.5	9	0.02	50.1	46	0	138.2	50.1	50.1	54.1	38	7
40.27	11	0	21.5	8	0.04	50.1	46	0	134.2	50.1	50.1	54.1	38	7
40.77	9	0.1	21.5	8	0.04	50.1	50.1	0	130.2	50.1	46	50.1	38	7
41.27	9	0	21.5	9	0.04	50.1	46	0	126.2	50.1	46	50.1	38	7
41.77	9	0	21.5	9	0.02	50.1	46	0	126.2	50.1	46	50.1	38	6.8
42.27	9	0.1	21.6	7	0.02	50.1	46	0	122.2	50.1	50.1	50.1	38	6.8
42.77	7	0	21.5	8	0.01	50.1	46	0	122.2	46	50.1	50.1	38	7
43.27	10	0	21.5	9	0.02	50.1	46	0	122.2	50.1	46	50.1	38	7
43.77	9	0	21.4	8	0.02	50.1	46	0	118.2	50.1	46	50.1	38	6.8
44.27	9	0.1	21.6	9	0.03	50.1	46	0	114.2	50.1	46	50.1	38	6.8
44.77	7	0	21.5	9	0.04	50.1	46	0	114.2	50.1	46	50.1	38	6.8
45.27	8	0	21.5	9	0.03	50.1	46	0	114.2	50.1	46	50.1	38	7
45.77	8	0	21.5	8	0.03	50.1	46	0	114.2	46	46	50.1	38	7
46.27	8	0.2	21.5	8	0.03	50.1	42	0	110.2	46	50.1	50.1	38	6.8
46.77	8	0	21.5	8	0.04	50.1	46	0	110.2	50.1	50.1	50.1	38	7
47.27	7	0	21.5	9	0.04	50.1	46	0	110.2	46	50.1	50.1	38	6.8
47.77	11	0	21.5	7	0.04	50.1	46	0	106.1	50.1	50.1	50.1	38	7
48.27	7	0	21.4	9	0.03	50.1	46	0	106.1	46	46	50.1	38	6.8
48.77	8	0	21.5	9	0.05	50.1	46	0	106.1	46	50.1	50.1	38	7
49.27	7	0	21.4	9	0.03	50.1	46	0	106.1	46	50.1	50.1	38	7
49.77	8	0.1	21.5	8	0.02	50.1	46	0	106.1	46	46	50.1	38	7

**Barrel Burning Test No. 4 CEM Data**

ET (MIN)	CO (PPM)	NOX (PPM)	O2 (%)	HC (PPM)	CO2 (%)	TEMP1 (C)	TEMP2 (C)	TEMP4 (C)	TEMP5 (C)	TEMP6 (C)	TEMP7 (C)	TEMP8 (C)	TEMP9 (C)	weight (LB)
50.27	8	-0.1	21.4	8	0.03	46	46	0	102.1	46	50.1	50.1	38	7
50.77	9	0	21.6	7	0.04	50.1	46	0	102.1	46	50.1	50.1	38	7
51.27	8	0.1	21.4	9	0.03	46	46	0	102.1	46	50.1	50.1	38	6.8
51.77	8	0	21.4	8	0.04	50.1	46	0	98.1	46	46	50.1	38	6.8
52.27	7	0	21.5	8	0.03	50.1	46	0	98.1	46	46	50.1	38	7
52.77	9	0	21.5	7	0.03	50.1	46	0	98.1	46	46	50.1	38	7
53.27	9	0.2	21.6	9	0.04	50.1	46	0	98.1	46	46	46	38	6.8
53.77	9	0	21.5	9	0.02	46	46	0	98.1	46	50.1	50.1	38	7
54.27	11	0.1	21.4	7	0.03	46	46	0	98.1	46	50.1	50.1	38	6.8
54.77	7	-0.1	21.4	8	0.04	46	46	0	94.1	46	46	46	38	6.8
55.27	8	0	21.5	9	0.04	46	42	0	94.1	46	46	50.1	38	6.8
55.77	10	0	21.6	9	0.03	46	42	0	94.1	46	46	50.1	38	6.8
56.27	8	0	21.6	8	0.04	46	46	0	94.1	46	46	46	38	7
56.77	9	0.2	21.5	8	0.03	46	46	0	94.1	46	46	50.1	38	7
57.27	7	0	21.4	9	0.04	46	46	0	90.1	46	46	46	38	6.8
57.77	8	0.2	21.4	8	0.02	46	42	0	94.1	46	46	50.1	38	6.8
58.27	8	0.2	21.3	8	0.04	46	42	0	94.1	46	46	46	38	6.8
58.77	6	0.1	21.4	8	0.02	46	42	0	94.1	46	46	46	38	6.8
59.27	9	0	21.4	8	0.04	46	42	0	94.1	46	46	46	38	6.8
59.77	8	-0.2	21.5	9	0.03	46	42	0	94.1	46	46	46	38	6.8
60.27	11	0.1	21.6	7	0.04	46	42	0	94.1	46	46	46	38	6.8
60.77	7	-0.1	21.5	9	0.05	46	46	0	90.1	46	46	46	38	7
61.27	7	0.1	21.5	8	0.04	46	46	0	90.1	46	46	46	38	6.8
61.77	7	0.2	21.5	9	0.04	46	46	0	94.1	46	46	46	38	6.8
62.27	7	0.1	21.3	7	0.12	46	46	0	94.1	46	46	46	38	6.8

**Barrel Burning Test No. 5 CEM Data**

ET (MIN)	CO (PPM)	NOX (PPM)	O2 (%)	HC (PPM)	CO2 (%)	TEMP1 (C)	TEMP2 (C)	TEMP4 (C)	TEMP5 (C)	TEMP6 (C)	TEMP7 (C)	TEMP8 (C)	TEMP9 (C)	weight (LB)
-19.847	6	0.2	23.1	8	0.02	42	42	0	42	42	42	38	34	20.4
-19.347	7	0.3	23.1	8	0.02	42	42	0	42	42	42	38	34	20.2
-18.847	7	0.3	23.1	8	0.03	42	42	0	42	42	46	38	34	20.2
-18.347	7	0.3	23.2	9	0.03	42	42	0	38	42	46	38	34	20.2
-17.847	8	0.2	23.1	8	0.02	42	42	0	42	42	46	38	34	20.2
-17.347	7	0.1	23.2	9	0.03	42	42	0	38	42	46	38	34	20.4
-16.847	5	0.5	23.2	7	0.03	42	42	0	38	42	46	38	34	20.2
-16.347	5	0.3	23.1	8	0.03	42	42	0	38	42	46	38	34	20.2
-15.847	7	0.3	23.2	7	0.02	42	42	0	38	42	46	38	34	20
-15.347	7	0.2	23.2	9	0.05	42	42	0	42	42	46	38	34	20.2
-14.847	7	0.2	23.2	7	0.03	42	42	0	42	42	46	38	38	20.2
-14.347	7	0.1	23.2	10	0.04	42	42	0	42	42	46	38	34	20.2
-13.847	8	0.2	23.3	9	0.04	42	42	0	42	42	46	42	38	20.2
-13.347	7	0.2	23.2	9	0.04	42	42	0	38	42	46	38	34	20.2
-12.847	6	0.2	23.1	9	0.04	42	42	0	38	42	46	38	34	20.2
-12.347	12	0.2	23	9	0.04	42	42	0	42	42	46	38	38	20.2
-11.847	9	0.2	23.3	9	0.05	42	42	0	42	42	46	38	38	20.2
-11.347	7	0.4	23.2	7	0.04	42	42	0	42	42	46	38	34	20.2
-10.847	5	0.2	23.2	7	0.04	42	42	0	42	42	46	38	34	20.2
-10.347	4	0.2	23.1	9	0.04	42	42	0	42	42	46	38	34	20
-9.8467	5	0.3	23.1	7	0.02	42	42	0	42	42	46	38	38	20.2
-9.3467	5	0.3	23.1	9	0.03	42	42	0	42	42	46	38	34	20.2
-8.8467	5	0.3	23.1	9	0.03	42	42	0	42	42	46	38	34	20.2
-8.3467	7	0.2	23.1	9	0.04	42	42	0	42	42	46	38	34	20
-7.8467	6	0.4	23	8	0.03	42	42	0	42	42	46	38	38	20.2
-7.3467	7	0.3	23.2	8	0.03	42	42	0	42	42	46	38	34	20.2
-6.8467	5	0.3	23.2	8	0.03	42	42	0	38	42	46	38	34	20.2
-6.3467	8	0.3	23	9	0.04	42	42	0	42	42	46	38	34	20.2
-5.8467	8	0.4	23.2	7	0.04	42	42	0	42	42	46	38	38	20.2
-5.3467	7	0.4	23.3	9	0.04	42	42	0	42	42	46	38	34	20.2
-4.8467	8	0.2	23.2	9	0.03	42	42	0	42	42	46	38	38	20.2
-4.3467	13	0.4	23.3	8	0.03	42	42	0	42	42	46	38	38	20.2
-3.8467	10	0.2	23.3	8	0.04	42	42	0	42	42	46	38	34	20.2
-3.3467	7	0.4	23.2	8	0.02	42	42	0	38	42	46	42	34	20.2
-2.8467	6	0.3	23.1	9	0.04	42	42	0	42	42	46	42	38	20.2
-2.3467	6	0.2	23.2	8	0.02	42	42	0	42	46	46	38	38	20.2
-1.8467	7	0.2	23.2	9	0.04	42	42	0	42	46	46	42	38	20
-1.3467	9	0.3	23.4	7	0.03	42	42	0	42	46	46	46	38	20
-0.8467	7	0.3	23.4	8	0.03	42	42	0	42	46	46	46	38	20
-0.3467	6	0.4	23.3	8	0.03	46	42	0	42	42	46	50.1	38	20
0.15333	8	0.7	23.3	11	0.03	54.1	42	0	46	46	46	90.1	38	19.4
0.65333	10	0.9	23.3	17	0.03	102.1	42	0	54.1	58.1	46	350.5	38	19
1.15333	32	1.5	23.1	13	0.04	138.2	42	0	66.1	50.1	46	522.8	38	19
1.65333	30	1.8	23.2	11	0.03	162.2	42	0	106.1	54.1	46	578.9	38	19
2.15333	21	2.1	23.1	11	0.04	174.3	42	0	214.3	58.1	46	578.9	38	19
2.65333	17	2.6	23.1	10	0.05	190.3	46	0	322.5	58.1	46	623	38	19.4
3.15333	14	2.8	22.9	11	0.07	202.3	46	0	386.6	58.1	46	627	38	19
3.65333	17	2.8	22.9	9	0.09	202.3	46	0	438.7	62.1	46	538.9	38	18.4
4.15333	15	2.2	22.9	10	0.12	194.3	46	0	470.7	62.1	46	530.8	38	18.4
4.65333	16	2.1	22.8	9	0.11	194.3	42	0	490.8	62.1	46	518.8	38	17.4
5.15333	15	1.9	22.8	9	0.13	190.3	50.1	0	502.8	62.1	46	478.8	38	16.6
5.65333	14	1.8	22.9	9	0.12	186.3	50.1	0	510.8	62.1	46	430.7	38	16.2
6.15333	15	1.7	23	11	0.14	182.3	50.1	0	514.8	62.1	46	382.6	38	16
6.65333	16	1.7	23	11	0.15	178.3	54.1	0	514.8	62.1	46	358.6	38	15.6
7.15333	16	1.6	23	11	0.15	174.3	54.1	0	518.8	62.1	46	330.5	38	15
7.65333	16	1.6	22.9	11	0.14	170.3	54.1	0	522.8	62.1	46	302.5	38	14.8
8.15333	16	1.6	22.9	10	0.13	170.3	58.1	0	526.8	62.1	46	306.5	38	14.6
8.65333	16	1.5	22.9	12	0.13	166.2	58.1	0	530.8	62.1	46	318.5	38	14.2
9.15333	15	1.5	22.9	12	0.11	158.2	58.1	0	534.9	62.1	46	294.5	38	14.2
9.65333	15	1.4	22.9	13	0.11	154.2	58.1	0	542.9	62.1	46	258.4	38	14
10.1533	17	1.3	22.9	15	0.11	150.2	58.1	0	546.9	62.1	46	250.4	38	13.8
10.6533	19	1.1	22.9	13	0.13	146.2	58.1	0	554.9	62.1	46	242.4	38	13.8
11.1533	18	1.2	23	15	0.11	142.2	58.1	0	562.9	62.1	46	222.3	38	13.6
11.6533	18	0.9	23	15	0.12	138.2	58.1	0	574.9	62.1	46	218.3	38	13.6
12.1533	22	0.9	23.2	15	0.11	134.2	58.1	0	590.9	62.1	46	214.3	38	13.4
12.6533	27	1.1	23.2	15	0.09	130.2	58.1	0	607	62.1	46	210.3	38	13.4
13.1533	23	1.2	23.1	15	0.09	130.2	58.1	0	631	58.1	46	206.3	38	13.4
13.6533	20	1.2	23.1	13	0.08	126.2	58.1	0	639	58.1	46	198.3	38	13.2
14.1533	21	1	23.3	12	0.09	122.2	62.1	0	639	58.1	46	190.3	38	13.2
14.6533	18	0.9	23.1	13	0.09	118.2	58.1	0	639	58.1	46	182.3	38	13

**Barrel Burning Test No. 5 CEM Data**

ET (MIN)	CO (PPM)	NOX (PPM)	O2 (%)	HC (PPM)	CO2 (%)	TEMP1 (C)	TEMP2 (C)	TEMP4 (C)	TEMP5 (C)	TEMP6 (C)	TEMP7 (C)	TEMP8 (C)	TEMP9 (C)	weight (LB)
15.1533	21	0.7	23.2	14	0.1	114.2	62.1	0	647	58.1	46	170.3	38	13.2
15.6533	32	0.9	23.2	12	0.09	110.2	58.1	0	643	58.1	46	154.2	38	13
16.1533	22	0.9	23	14	0.09	106.1	58.1	0	643	58.1	46	146.2	38	13
16.6533	20	0.8	23.2	14	0.08	102.1	58.1	0	643	58.1	46	134.2	38	13
17.1533	24	0.7	23.3	13	0.08	98.1	58.1	0	647	58.1	46	134.2	38	13
17.6533	20	0.7	23.2	13	0.08	98.1	58.1	0	651	54.1	46	130.2	38	13
18.1533	20	0.8	23.2	14	0.06	94.1	58.1	0	655	54.1	46	126.2	38	12.8
18.6533	19	0.6	23.1	15	0.08	94.1	58.1	0	659.1	54.1	46	126.2	38	12.8
19.1533	23	0.6	23.2	13	0.06	90.1	58.1	0	655	54.1	46	122.2	38	12.8
19.6533	24	0.7	23.3	13	0.07	90.1	58.1	0	651	54.1	46	122.2	38	12.6
20.1533	20	0.7	23.2	16	0.07	86.1	58.1	0	643	54.1	46	122.2	38	12.4
20.6533	23	0.7	23.1	15	0.05	86.1	58.1	0	643	54.1	46	114.2	38	12.6
21.1533	23	0.7	23.2	15	0.04	82.1	58.1	0	643	54.1	46	110.2	38	12.6
21.6533	22	0.6	23.1	17	0.05	82.1	58.1	0	639	54.1	46	110.2	38	12.4
22.1533	24	0.7	23.2	15	0.06	82.1	54.1	0	643	54.1	46	106.1	38	12.4
22.6533	25	0.7	23.2	15	0.06	78.1	54.1	0	643	54.1	46	102.1	38	12.4
23.1533	23	0.7	23.3	15	0.07	78.1	54.1	0	647	54.1	46	98.1	38	12.2
23.6533	22	0.7	23.2	13	0.04	78.1	54.1	0	647	50.1	46	94.1	38	12.2
24.1533	24	0.7	23.3	13	0.04	74.1	54.1	0	647	50.1	46	90.1	38	12.2
24.6533	22	0.7	23.3	13	0.05	74.1	54.1	0	647	50.1	46	90.1	38	12.2
25.1533	26	0.6	23.2	15	0.07	74.1	54.1	0	651	50.1	50.1	90.1	38	12.2
25.6533	31	0.6	23.4	14	0.07	74.1	54.1	0	647	50.1	46	90.1	38	12.2
26.1533	22	0.7	23.2	11	0.05	70.1	54.1	0	647	50.1	46	82.1	38	12.2
26.6533	20	0.6	23.4	14	0.04	70.1	54.1	0	643	50.1	46	78.1	38	12.2
27.1533	18	0.6	23.2	13	0.06	70.1	54.1	0	643	50.1	46	78.1	38	12.2
27.6533	16	0.7	23.3	12	0.04	70.1	54.1	0	643	50.1	50.1	78.1	38	12
28.1533	17	0.7	23.4	13	0.05	70.1	54.1	0	639	50.1	50.1	78.1	38	12
28.6533	17	0.6	23.4	13	0.06	66.1	54.1	0	643	50.1	50.1	74.1	38	12
29.1533	18	0.6	23.5	12	0.07	66.1	54.1	0	639	50.1	50.1	74.1	38	12.2
29.6533	16	0.7	23.3	11	0.06	66.1	54.1	0	639	50.1	50.1	74.1	38	12
30.1533	17	0.7	23.3	13	0.05	66.1	54.1	0	643	50.1	50.1	70.1	38	12
30.6533	18	0.7	23.4	12	0.06	66.1	54.1	0	643	50.1	50.1	70.1	38	12
31.1533	14	0.7	23.4	13	0.06	66.1	54.1	0	643	50.1	50.1	70.1	38	12
31.6533	17	0.6	23.3	11	0.04	62.1	54.1	0	643	50.1	50.1	66.1	38	12
32.1533	14	0.4	23.2	12	0.05	62.1	54.1	0	647	50.1	50.1	66.1	38	12
32.6533	17	0.4	23.3	11	0.05	62.1	50.1	0	647	50.1	50.1	62.1	38	12
33.1533	18	0.5	23.5	11	0.07	62.1	50.1	0	651	50.1	50.1	62.1	38	12
33.6533	15	0.5	23.4	12	0.05	62.1	54.1	0	651	50.1	50.1	62.1	42	12
34.1533	15	0.6	23.2	11	0.06	62.1	54.1	0	651	50.1	50.1	66.1	42	12
34.6533	16	0.7	23.3	11	0.04	58.1	54.1	0	655	50.1	50.1	62.1	42	12
35.1533	22	0.6	23.4	12	0.05	58.1	54.1	0	655	50.1	50.1	62.1	42	12
35.6533	17	0.7	23.5	12	0.05	58.1	50.1	0	659.1	50.1	50.1	62.1	42	12
36.1533	12	0.6	23.2	11	0.03	58.1	50.1	0	659.1	50.1	50.1	62.1	42	12
36.6533	13	0.5	23.3	11	0.03	58.1	50.1	0	663.1	50.1	50.1	62.1	42	12
37.1533	13	0.6	23.5	11	0.04	58.1	54.1	0	663.1	50.1	50.1	62.1	42	12
37.6533	14	0.7	23.3	12	0.04	58.1	50.1	0	667.1	50.1	50.1	58.1	42	11.8
38.1533	14	0.6	23.3	10	0.03	58.1	50.1	0	667.1	50.1	50.1	58.1	42	12
38.6533	15	0.7	23.4	11	0.02	58.1	50.1	0	671.1	50.1	50.1	58.1	38	12
39.1533	13	0.6	23.4	13	0.03	58.1	50.1	0	671.1	50.1	50.1	58.1	42	12
39.6533	12	0.7	23.3	11	0.02	54.1	50.1	0	675.1	50.1	50.1	58.1	38	12
40.1533	13	0.5	23.3	11	0.04	54.1	50.1	0	675.1	50.1	50.1	58.1	38	12
40.6533	14	0.5	23.4	11	0.03	54.1	50.1	0	679.1	50.1	50.1	58.1	38	11.8
41.1533	13	0.5	23.5	11	0.03	54.1	50.1	0	679.1	50.1	50.1	58.1	42	12
41.6533	12	0.7	23.4	11	0.04	54.1	50.1	0	679.1	50.1	50.1	58.1	42	11.8
42.1533	11	0.6	23.3	10	0.02	54.1	50.1	0	679.1	50.1	50.1	58.1	42	11.8
42.6533	15	0.5	23.3	10	0.04	54.1	50.1	0	679.1	50.1	50.1	58.1	38	11.8
43.1533	25	0.5	23.5	9	0.03	54.1	50.1	0	683.1	50.1	50.1	58.1	42	11.8
43.6533	11	0.6	23.5	9	0.03	54.1	50.1	0	679.1	50.1	50.1	58.1	38	11.8
44.1533	12	0.7	23.4	12	0.04	54.1	50.1	0	683.1	54.1	50.1	54.1	38	11.8
44.6533	11	0.6	23.3	11	0.03	54.1	50.1	0	683.1	50.1	50.1	58.1	42	11.8
45.1533	11	0.6	23.3	11	0.04	54.1	50.1	0	683.1	50.1	50.1	54.1	42	11.8
45.6533	9	0.7	23.3	9	0.03	54.1	50.1	0	687.1	50.1	50.1	54.1	42	11.8
46.1533	12	0.4	23.3	11	0.03	54.1	50.1	0	691.1	50.1	50.1	54.1	42	11.6
46.6533	13	0.5	23.4	10	0.03	54.1	50.1	0	691.1	50.1	50.1	54.1	42	11.6
47.1533	14	0.5	23.5	10	0.02	54.1	50.1	0	695.1	50.1	50.1	54.1	42	11.8
47.6533	10	0.7	23.4	9	0.03	54.1	50.1	0	695.1	50.1	50.1	54.1	42	11.6
48.1533	9	0.6	23.3	11	0.03	54.1	50.1	0	695.1	50.1	50.1	54.1	42	11.6
48.6533	11	0.7	23.4	11	0.03	54.1	50.1	0	699.1	50.1	50.1	54.1	42	11.6
49.1533	11	0.4	23.4	9	0.04	54.1	50.1	0	699.1	50.1	50.1	54.1	42	11.6
49.6533	14	0.5	23.5	11	0.04	54.1	50.1	0	695.1	50.1	50.1	54.1	42	11.6

**Barrel Burning Test No. 5 CEM Data**

ET (MIN)	CO (PPM)	NOX (PPM)	O2 (%)	HC (PPM)	CO2 (%)	TEMP1 (C)	TEMP2 (C)	TEMP4 (C)	TEMP5 (C)	TEMP6 (C)	TEMP7 (C)	TEMP8 (C)	TEMP9 (C)	weight (LB)
50.1533	11	0.6	23.5	9	0.04	54.1	50.1	0	695.1	50.1	50.1	54.1	42	11.6
50.6533	11	0.7	23.4	10	0.03	54.1	50.1	0	691.1	50.1	50.1	54.1	42	11.6
51.1533	10	0.7	23.4	9	0.04	54.1	46	0	691.1	50.1	50.1	54.1	42	11.6
51.6533	14	0.6	23.4	11	0.04	50.1	46	0	687.1	50.1	50.1	54.1	42	11.6
52.1533	11	0.5	23.4	10	0.02	54.1	46	0	683.1	50.1	50.1	54.1	42	11.4
52.6533	12	0.7	23.5	11	0.03	50.1	46	0	675.1	50.1	50.1	54.1	42	11.4
53.1533	13	0.6	23.5	12	0.05	54.1	50.1	0	667.1	50.1	50.1	54.1	42	11.4
53.6533	13	0.7	23.3	9	0.04	54.1	46	0	659.1	50.1	50.1	54.1	42	11.4
54.1533	23	0.7	23.4	11	0.02	54.1	50.1	0	655	50.1	50.1	54.1	42	11.6
54.6533	15	0.7	23.5	10	0.04	50.1	46	0	647	50.1	50.1	54.1	42	11.4
55.1533	15	0.8	23.3	11	0.02	50.1	46	0	643	50.1	50.1	54.1	42	11.4
55.6533	15	0.6	23.4	10	0.03	54.1	50.1	0	639	50.1	50.1	54.1	42	11.4
56.1533	14	0.4	23.5	11	0.04	54.1	46	0	635	50.1	50.1	54.1	42	11.4
56.6533	13	0.9	23.5	11	0.06	54.1	46	0	631	50.1	50.1	54.1	42	11.4
57.1533	13	0.7	23.4	11	0.04	50.1	46	0	627	50.1	50.1	54.1	42	11.4
57.6533	9	0.7	23.3	10	0.06	54.1	46	0	623	50.1	50.1	54.1	42	11.4
58.1533	12	0.6	23.4	10	0.04	54.1	46	0	623	50.1	50.1	54.1	42	11.4
58.6533	16	0.6	23.4	10	0.03	50.1	46	0	619	50.1	50.1	54.1	42	11.2
59.1533	26	0.6	23.5	9	0.03	50.1	46	0	619	50.1	50.1	54.1	42	11.2
59.6533	19	0.5	23.5	11	0.03	54.1	46	0	615	50.1	50.1	54.1	42	11.2
60.1533	12	0.7	23.6	11	0.03	50.1	46	0	611	50.1	50.1	54.1	42	11.2
60.6533	10	0.6	23.5	10	0.03	50.1	50.1	0	611	50.1	50.1	54.1	42	11.2
61.1533	13	0.8	23.4	12	0.04	50.1	46	0	607	50.1	50.1	54.1	42	11.2
61.6533	12	0.7	23.4	11	0.05	50.1	46	0	603	50.1	50.1	54.1	42	11.2
62.1533	10	0.8	23.3	10	0.04	50.1	46	0	603	50.1	50.1	54.1	42	11.4
62.6533	10	0.6	23.3	10	0.03	50.1	46	0	603	50.1	50.1	54.1	42	11.2
63.1533	11	0.7	23.3	10	0.03	50.1	46	0	603	50.1	54.1	54.1	42	11.2
63.6533	11	0.7	23.4	11	0.02	50.1	46	0	599	50.1	50.1	54.1	42	11.2
64.1533	10	0.7	23.4	10	0.03	50.1	46	0	599	50.1	50.1	54.1	42	11.2
64.6533	13	0.8	23.5	11	0.05	50.1	46	0	599	50.1	50.1	54.1	42	11.2
65.1533	11	0.8	23.3	9	0.03	50.1	46	0	594.9	50.1	50.1	54.1	42	11
65.6533	11	0.6	23.5	11	0.04	50.1	46	0	594.9	50.1	50.1	54.1	42	11.2
66.1533	11	0.7	23.4	10	0.04	50.1	46	0	590.9	50.1	50.1	54.1	42	11.2
66.6533	13	0.6	23.4	11	0.02	50.1	46	0	590.9	50.1	50.1	50.1	42	11
67.1533	12	0.7	23.4	11	0.04	54.1	46	0	590.9	50.1	50.1	54.1	42	11
67.6533	9	0.9	23.3	9	0.03	50.1	46	0	590.9	50.1	50.1	54.1	42	11
68.1533	11	0.7	23.5	11	0.03	50.1	46	0	590.9	50.1	50.1	54.1	42	11
68.6533	11	0.9	23.4	10	0.04	50.1	46	0	586.9	50.1	50.1	54.1	42	11
69.1533	21	0.7	23.4	10	0.02	50.1	46	0	586.9	50.1	50.1	50.1	42	10.8
69.6533	22	0.6	23.5	11	0.02	54.1	46	0	586.9	50.1	50.1	50.1	42	11
70.1533	20	0.7	23.4	9	0.04	54.1	46	0	582.9	50.1	50.1	50.1	42	10.8
70.6533	15	0.7	23.4	10	0.04	50.1	46	0	582.9	50.1	50.1	54.1	42	10.6
71.1533	12	0.7	23.5	9	0.03	50.1	46	0	582.9	50.1	50.1	50.1	42	11
71.6533	13	0.8	23.5	9	0.05	50.1	46	0	578.9	50.1	54.1	54.1	42	10.8
72.1533	11	0.8	23.4	11	0.04	54.1	46	0	578.9	50.1	54.1	54.1	42	10.8
72.6533	11	0.9	23.3	10	0.03	50.1	46	0	578.9	50.1	54.1	50.1	42	10.8
73.1533	11	0.8	23.3	10	0.03	50.1	46	0	578.9	50.1	54.1	54.1	42	10.8
73.6533	11	0.8	23.3	9	0.03	54.1	46	0	574.9	50.1	54.1	50.1	42	10.8
74.1533	10	0.7	23.4	9	0.02	54.1	46	0	574.9	50.1	54.1	54.1	42	10.8
74.6533	12	0.7	23.4	9	0.03	54.1	50.1	0	574.9	54.1	54.1	54.1	42	10.8
75.1533	13	0.6	23.3	9	0.03	50.1	46	0	574.9	50.1	54.1	54.1	42	10.8
75.6533	10	0.9	23.4	9	0.03	50.1	46	0	570.9	50.1	54.1	54.1	42	10.8
76.1533	17	0.9	23.5	11	0.06	54.1	46	0	570.9	50.1	50.1	54.1	42	10.8
76.6533	15	0.9	23.5	10	0.04	54.1	46	0	566.9	50.1	54.1	54.1	42	10.8
77.1533	13	0.8	23.4	11	0.04	54.1	46	0	566.9	50.1	54.1	54.1	42	10.8
77.6533	13	0.7	23.4	10	0.02	50.1	46	0	566.9	50.1	54.1	54.1	42	10.8
78.1533	14	0.6	23.4	10	0.03	50.1	46	0	562.9	50.1	54.1	54.1	42	10.8
78.6533	13	0.8	23.6	9	0.03	50.1	46	0	562.9	54.1	54.1	54.1	42	10.8
79.1533	9	0.8	23.4	9	0.04	50.1	46	0	562.9	50.1	54.1	54.1	42	10.8
79.6533	11	0.7	23.4	10	0.02	50.1	46	0	558.9	54.1	54.1	50.1	42	10.8
80.1533	13	0.7	23.5	10	0.03	54.1	46	0	558.9	54.1	54.1	54.1	42	10.8
80.6533	10	0.9	23.5	7	0.04	54.1	50.1	0	554.9	54.1	54.1	54.1	46	10.6
81.1533	11	0.9	23.4	10	0.03	54.1	46	0	558.9	54.1	54.1	54.1	42	10.8
81.6533	13	0.7	23.5	10	0.04	54.1	46	0	554.9	54.1	54.1	54.1	42	10.6
82.1533	17	0.7	23.5	10	0.04	54.1	46	0	554.9	54.1	54.1	54.1	42	10.6
82.6533	21	0.9	23.4	9	0.03	54.1	46	0	550.9	54.1	54.1	54.1	42	10.6
83.1533	23	0.8	23.4	9	0.04	54.1	46	0	550.9	50.1	54.1	54.1	42	10.6
83.6533	21	0.8	23.6	11	0.04	54.1	46	0	546.9	50.1	54.1	54.1	42	10.6
84.1533	11	0.9	23.5	10	0.05	54.1	50.1	0	546.9	50.1	54.1	54.1	42	10.6
84.6533	9	0.9	23.4	9	0.03	50.1	46	0	546.9	50.1	54.1	54.1	42	10.6

**Barrel Burning Test No. 5 CEM Data**

ET (MIN)	CO (PPM)	NOX (PPM)	O2 (%)	HC (PPM)	CO2 (%)	TEMP1 (C)	TEMP2 (C)	TEMP4 (C)	TEMP5 (C)	TEMP6 (C)	TEMP7 (C)	TEMP8 (C)	TEMP9 (C)	weight (LB)
85.1533	14	0.8	23.5	9	0.04	54.1	46	0	542.9	54.1	54.1	54.1	42	10.6
85.6533	14	0.8	23.5	9	0.05	54.1	46	0	542.9	54.1	54.1	54.1	42	10.4
86.1533	12	0.9	23.4	9	0.05	54.1	46	0	542.9	50.1	54.1	54.1	42	10.6
86.6533	11	0.9	23.4	8	0.04	54.1	46	0	542.9	50.1	54.1	54.1	42	10.6
87.1533	13	0.7	23.5	9	0.04	50.1	46	0	542.9	54.1	54.1	54.1	42	10.6
87.6533	13	0.9	23.5	10	0.04	54.1	46	0	538.9	54.1	54.1	54.1	42	10.6
88.1533	11	1	23.4	9	0.04	50.1	50.1	0	538.9	54.1	54.1	54.1	42	10.4
88.6533	10	1	23.3	12	0.03	54.1	46	0	538.9	54.1	54.1	54.1	42	10.4
89.1533	10	1.1	23.3	9	0.04	54.1	46	0	538.9	54.1	54.1	54.1	46	10.4
89.6533	12	0.9	23.3	10	0.03	54.1	50.1	0	534.9	54.1	54.1	54.1	42	10.4
90.1533	10	0.8	23.4	9	0.02	54.1	46	0	530.8	54.1	54.1	54.1	42	10.4
90.6533	12	0.9	23.6	10	0.05	54.1	46	0	530.8	54.1	54.1	54.1	42	10.2
91.1533	14	0.9	23.6	10	0.03	54.1	50.1	0	530.8	54.1	54.1	54.1	42	10.4
91.6533	13	0.8	23.5	11	0.03	54.1	46	0	530.8	54.1	54.1	54.1	42	10.2
92.1533	13	0.7	23.5	10	0.04	54.1	50.1	0	526.8	54.1	54.1	54.1	42	10.4
92.6533	13	0.9	23.4	8	0.04	54.1	50.1	0	526.8	54.1	54.1	54.1	42	10.2
93.1533	13	0.9	23.5	11	0.04	54.1	50.1	0	526.8	54.1	54.1	54.1	42	10.2
93.6533	13	0.7	23.5	10	0.02	54.1	50.1	0	526.8	54.1	54.1	54.1	42	10.2
94.1533	15	0.9	23.6	12	0.06	54.1	50.1	0	526.8	54.1	54.1	54.1	42	10.2
94.6533	11	0.9	23.5	11	0.03	54.1	50.1	0	522.8	54.1	54.1	54.1	42	10.2
95.1533	14	1.4	23.4	11	0.04	54.1	50.1	0	522.8	54.1	54.1	54.1	42	10.2
95.6533	11	1	22.3	7	0.01	50.1	50.1	0	518.8	54.1	54.1	50.1	46	10.2

## APPENDIX C. CEM CALIBRATION LOGS

CEM CALIBRATION DATA SHEET						
Date	<u>8-28-95</u>					
Analyzer Type/Model	<u>O<sub>2</sub> 20%</u>	, MSA M-802				
Analyzer Working Range						
Analyzer Zero Control Setting (Initial/Final)	<u>7.5</u>	<u>7.5</u>				
Analyzer Span Control Setting (Initial/Final)						
CEM CALIBRATION DATA SHEET						
<p>Date <u>8-28-95</u></p> <p>Analyzer Type/Model <u>C O<sub>2</sub></u> / <u>Bederman 868</u></p> <p>Analyzer Working Range <u>10%</u></p> <p>Analyzer Zero Control Setting (Initial/Final) <u>8.2</u> / <u>8.2</u></p> <p>Analyzer Span Control Setting (Initial/Final) <u>1</u> / <u>1</u></p>						
Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration from Known Concentration	Post-test % Deviation from Known Concentration
1 2EPO	5	.40	0.0			
2 17.3	5	.40	17.3	15.3		
3 20.9			20.9			
4 19.9	5	.40	19.6	19.2		
5 18.4	5	.40	18.1			
CEM CALIBRATION DATA SHEET						
<p>Reference Standards</p> <p>1. Supplier <u>AIR Products</u> Tank # <u>1100 PSI</u> Tank Pressure <u>1100 PSI</u> Concentration <u></u> Certified by _____ Certification date _____</p> <p>2. Supplier <u>AIR Products</u> Tank # <u>1000 PSI</u> Tank Pressure <u>1000 PSI</u> Concentration <u></u> Certified by _____ Certification date _____</p> <p>3. Supplier <u>AIR Products</u> Tank # <u>1500 PSI</u> Tank Pressure <u>1500 PSI</u> Concentration <u></u> Certified by _____ Certification date _____</p> <p>4. Supplier <u>AIR Products</u> Tank # <u>500 PSI</u> Tank Pressure <u>500 PSI</u> Concentration <u></u> Certified by _____ Certification date _____</p>						

Figure 4-1. CEM calibration data sheet.

C-2

## CEM CALIBRATION DATA SHEET

Date 8-28-95Analyzer Type/Model CO, BECKMAN 868Analyzer Working Range 1000 ppmAnalyzer Zero Control Setting (Initial/Final) 9.12 / 9.12

Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
1 ZERO	5	0.40	0		10	
2 512 ppm	5	0.40	513 ppm		559	
3 275 ppm	5	0.40	247		288	

## Reference Standards

- Supplier AIR PRODUCTS Tank # \_\_\_\_\_  
Tank Pressure 1100 PSI  
Certified by \_\_\_\_\_
- Supplier AIR PRODUCTS Tank # \_\_\_\_\_  
Tank Pressure 1900 PSI  
Certified by \_\_\_\_\_
- Supplier AIRCO PROPERTIES Tank # \_\_\_\_\_  
Tank Pressure 800 PSI  
Certified by \_\_\_\_\_
- Supplier \_\_\_\_\_  
Tank Pressure \_\_\_\_\_  
Certified by \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

## CEM CALIBRATION DATA SHEET

Date 8-28-95Analyzer Type/Model NO/NO<sub>x</sub> TECO 10Analyzer Working Range 100 ppm

Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
1 ZERO	5	.45	0.0		1.2	
2 10 ppm	5	.45	10.0		11.7	
3 5 ppm	5	.45	4.9		4.4582	

## Reference Standards

- Supplier AIR PRODUCTS Tank # \_\_\_\_\_  
Tank Pressure 1100 PSI  
Certified by \_\_\_\_\_
- Supplier AIR PRODUCTS Tank # \_\_\_\_\_  
Tank Pressure 1800 PSI  
Certified by \_\_\_\_\_
- Supplier AIR PRODUCTS Tank # \_\_\_\_\_  
Tank Pressure 1500 PSI  
Certified by \_\_\_\_\_
- Supplier \_\_\_\_\_  
Tank Pressure \_\_\_\_\_  
Certified by \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

CEM CALIBRATION DATA SHEET

Date 8-28-95

Analyzer Type/Model TIC, BECKMAN 402

Analyzer Working Range \_\_\_\_\_

Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
1 ZERO	3	7	0		-27	
2 450 ppm	3	7	452		249	
3 90 ppm	3	7	71 ppm		28	
4 31 ppm	3	7	29 ppm		11	

Reference Standards

- Supplier AIR PRODUCTS  
Tank # \_\_\_\_\_  
Tank Pressure 1100 PSI  
Certified by \_\_\_\_\_
- Supplier AIR PRODUCTS  
Tank # \_\_\_\_\_  
Tank Pressure 1700 PSI  
Certified by \_\_\_\_\_
- Supplier AIR PRODUCTS  
Tank # \_\_\_\_\_  
Concentration \_\_\_\_\_  
Certification date \_\_\_\_\_
- Supplier AIR PRODUCTS  
Tank # \_\_\_\_\_  
Concentration \_\_\_\_\_  
Certification date \_\_\_\_\_

CEM CALIBRATION DATA SHEET

Date 8-30-95

Analyzer Type/Model MSA O<sub>2</sub>, M805

Analyzer Working Range 0-20%

Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
17.3	5 psi	0.5 l/min	19.3			
20.9			20.9		21.2	
18.4	5	0.5	18.4		17.3	
19.9	5	0.5	19.6		19.0	

Reference Standards

- Supplier \_\_\_\_\_  
Tank # \_\_\_\_\_  
Concentration \_\_\_\_\_  
Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_  
Tank # \_\_\_\_\_  
Concentration \_\_\_\_\_  
Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_  
Tank # \_\_\_\_\_  
Concentration \_\_\_\_\_  
Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_  
Tank # \_\_\_\_\_  
Concentration \_\_\_\_\_  
Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

Figure 4-1. CEM calibration data sheet.

## CEM CALIBRATION DATA SHEET

Date 8-30-95Analyzer Type/Model CO<sub>2</sub> / Beck 868Analyzer Working Range 0 - 10%Analyzer Zero Control Setting (Initial/Final)    /   Analyzer Span Control Setting (Initial/Final)    /   

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
ZERO	5	0.5	0.00		0.00	
1.56%	5	0.5	1.56		1.59	
1.04	5	0.5	1.00		1.03	
0.52	5	0.5	0.49		0.49	

## Reference Standards

1. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
2. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
3. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
4. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

## CEM CALIBRATION DATA SHEET

Date 8-30-95Analyzer Type/Model CO / Beck 868Analyzer Working Range 0 - 1000Analyzer Zero Control Setting (Initial/Final)    /   Analyzer Span Control Setting (Initial/Final)    /   

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
ZERO	5	0.5	0		12	
512	5	0.5	513		537	
275	5	0.5	256		271	

## Reference Standards

1. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
2. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
3. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
4. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

C-4

## CEM CALIBRATION DATA SHEET

Date 8-30-95Analyzer Type/Model NO<sub>x</sub> 1 TECO 10Analyzer Working Range 0-100 ppmAnalyzer Zero Control Setting (Initial/Final)   /  Analyzer Span Control Setting (Initial/Final)   /  

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
ZERO	5	0.5	0.0		0.2	
10	5	0.5	10.0		9.3	
5	5	0.5	5.6		5.6	

## Reference Standards

1. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
     Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
     Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
2. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
     Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
     Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
3. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
     Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
     Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
4. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
     Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
     Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

## CEM CALIBRATION DATA SHEET

Date 8-30-95Analyzer Type/Model THC 1 TECO 51Analyzer Working Range 0-1000 ppmAnalyzer Zero Control Setting (Initial/Final)   /  Analyzer Span Control Setting (Initial/Final)   /  

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
ZERO	9	1.0	2		2	
450	9	1.0	457		457	
90	9	1.0	93		88	

## Reference Standards

1. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
     Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
     Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
2. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
     Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
     Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
3. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
     Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
     Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
4. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
     Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
     Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

C-6

Date 9-1-95

CEM CALIBRATION DATA SHEET

Analyzer Type/Model CO<sub>2</sub> / MSA 802

Analyzer Working Range 18.4 - 21.0 %

Analyzer Zero Control Setting (Initial/Final) /

Analyzer Span Control Setting (Initial/Final) /

*Jed  
MSA  
XP  
check with  
M.P. check*

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
18.4	5	0.5	17.2		17.2	
19.9	5	0.5	19.0		19.2	
21.0	5	0.5	21.0		21.0	

Reference Standards

- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

Date 9-1-95

CEM CALIBRATION DATA SHEET

Analyzer Type/Model CO<sub>2</sub> / BECKMAN 868

Analyzer Working Range 0 - 10 %

Analyzer Zero Control Setting (Initial/Final) /

Analyzer Span Control Setting (Initial/Final) /

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
ZERO	5	0.5	0.00		-0.02	
1.56	5	0.5	1.56		1.59	
1.04	5	0.5	1.03		1.00	
.52	5	0.5	0.49		0.46	

Reference Standards

- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

C-7

CEM CALIBRATION DATA SHEET

Date 9-1-95

Analyzer Type/Model CO / BECHMAN 868  
 Analyzer Working Range 0 - 1000 ppm  
 Analyzer Zero Control Setting (Initial/Final)        /         
 Analyzer Span Control Setting (Initial/Final)        /       

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
ZERO	5	0.5	0		17	
512	5	0.5	513		554	
275	5	0.5	242		281	

## Reference Standards

1. Supplier \_\_\_\_\_  
 Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_  
 Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_  
 Certification date \_\_\_\_\_
  
2. Supplier \_\_\_\_\_  
 Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_  
 Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_  
 Certification date \_\_\_\_\_
  
3. Supplier \_\_\_\_\_  
 Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_  
 Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_  
 Certification date \_\_\_\_\_
  
4. Supplier \_\_\_\_\_  
 Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_  
 Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_  
 Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

CEM CALIBRATION DATA SHEET

Date 9-1-95

Analyzer Type/Model NO<sub>x</sub> / TECO 10  
 Analyzer Working Range 0 - 100 ppm  
 Analyzer Zero Control Setting (Initial/Final)        /         
 Analyzer Span Control Setting (Initial/Final)        /       

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
ZERO	5	0.5	0.0		0.0	
10	5	0.5	10.5		9.5	
5	5	0.5	5.9		4.9	

## Reference Standards

1. Supplier \_\_\_\_\_  
 Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_  
 Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_  
 Certification date \_\_\_\_\_
  
2. Supplier \_\_\_\_\_  
 Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_  
 Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_  
 Certification date \_\_\_\_\_
  
3. Supplier \_\_\_\_\_  
 Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_  
 Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_  
 Certification date \_\_\_\_\_
  
4. Supplier \_\_\_\_\_  
 Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_  
 Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_  
 Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

## CEM CALIBRATION DATA SHEET

Date 9-1-95Analyzer Type/Model TIC, TECO 51Analyzer Working Range 0 - 1000 ppm

Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
ZERO	9	1.0	0.1		-3.2	
450	9	1.0	450		432	
90	9	1.0	81		81	

C-8

## Reference Standards

1. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_

Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_

Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

2. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_

Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_

Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

3. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_

Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_

Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

4. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_

Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_

Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

## CEM CALIBRATION DATA SHEET

Date 9-6-95Analyzer Type/Model O<sub>2</sub>, NSA 802

Analyzer Working Range \_\_\_\_\_

Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
18.1	5	.5	18.41		18.41	
19.9	5	.5	20.1		20.3	
21.0	5	.5	22.0		22.0	

## Reference Standards

1. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_

Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_

Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

2. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_

Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_

Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

3. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_

Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_

Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

4. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_

Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_

Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

CEM CALIBRATION DATA SHEET

Date 9-6-95

Analyzer Type/Model CO<sub>2</sub>, Beckman 868  
 Analyzer Working Range 0 - 1000 ppm  
 Analyzer Zero Control Setting (Initial/Final) /  
 Analyzer Span Control Setting (Initial/Final) /

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
0	5	0.5	0.00		0.00	
1.56	5	0.5	1.56		1.76	
1.01	5	0.5	.98		1.17	
.52	5	0.5	.42		.56	

Reference Standards

- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

CEM CALIBRATION DATA SHEET

Date 9-6-95

Analyzer Type/Model CO, Beckman 868  
 Analyzer Working Range 0 - 1000 ppm  
 Analyzer Zero Control Setting (Initial/Final) /  
 Analyzer Span Control Setting (Initial/Final) /

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
0	5	0.5	0.0		0	
512	5	0.5	512		513	
275	5	0.5	271		266	

Reference Standards

- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

C-10

## CEM CALIBRATION DATA SHEET

Date 9-6-95Analyzer Type/Model No., Reco 10

Analyzer Working Range \_\_\_\_\_

Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
0	5	0.5	0.0		0.2	
10	5	0.5	10.0		10.7	
5	5	0.5	6.3		6.1	

## Reference Standards

1. Supplier \_\_\_\_\_

Tank Pressure \_\_\_\_\_

Certified by \_\_\_\_\_

Tank # \_\_\_\_\_

Concentration \_\_\_\_\_

Certification date \_\_\_\_\_

2. Supplier \_\_\_\_\_

Tank Pressure \_\_\_\_\_

Certified by \_\_\_\_\_

Tank # \_\_\_\_\_

Concentration \_\_\_\_\_

Certification date \_\_\_\_\_

3. Supplier \_\_\_\_\_

Tank Pressure \_\_\_\_\_

Certified by \_\_\_\_\_

Tank # \_\_\_\_\_

Concentration \_\_\_\_\_

Certification date \_\_\_\_\_

4. Supplier \_\_\_\_\_

Tank Pressure \_\_\_\_\_

Certified by \_\_\_\_\_

Tank # \_\_\_\_\_

Concentration \_\_\_\_\_

Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

## CEM CALIBRATION DATA SHEET

Date 9-6-95Analyzer Type/Model TECO, THC Model 151Analyzer Working Range 0-1000 ppm

Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
0	9	1.00 atm	0		0	
150	9	1.0	164		137	
90	9	1.0	93		88	

## Reference Standards

1. Supplier \_\_\_\_\_

Tank Pressure \_\_\_\_\_

Certified by \_\_\_\_\_

Tank # \_\_\_\_\_

Concentration \_\_\_\_\_

Certification date \_\_\_\_\_

2. Supplier \_\_\_\_\_

Tank Pressure \_\_\_\_\_

Certified by \_\_\_\_\_

Tank # \_\_\_\_\_

Concentration \_\_\_\_\_

Certification date \_\_\_\_\_

3. Supplier \_\_\_\_\_

Tank Pressure \_\_\_\_\_

Certified by \_\_\_\_\_

Tank # \_\_\_\_\_

Concentration \_\_\_\_\_

Certification date \_\_\_\_\_

4. Supplier \_\_\_\_\_

Tank Pressure \_\_\_\_\_

Certified by \_\_\_\_\_

Tank # \_\_\_\_\_

Concentration \_\_\_\_\_

Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

C-11

## CEM CALIBRATION DATA SHEET

Date 9/8/95Analyzer Type/Model O<sub>2</sub> / MSA

Analyzer Working Range \_\_\_\_\_

Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
18.0	5	.5	17.7		17.7	
19.9	5	.5	19.6	<del>19.6</del>	19.6	
21.0	5	.5	21.3		20.2	

## Reference Standards

1. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
2. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
3. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
4. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

## CEM CALIBRATION DATA SHEET

Date 9/8/95Analyzer Type/Model CO<sub>2</sub> / Beckman 868

Analyzer Working Range \_\_\_\_\_

Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
0	5	.5	0	<del>0</del>	0	
1.56	5	.5	1.56	<del>1.56</del>	1.64	
1.04	5	.5	.98	<del>.98</del>	1.03	
0.52	5	.5	.46		.49	

## Reference Standards

1. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
2. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
3. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
4. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

**CEM CALIBRATION DATA SHEET**

Date 9/8/95

Analyzer Type/Model CO, Brockman 868

Analyzer Working Range \_\_\_\_\_

Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
0	5	.5	0	xx	22	
510	5	.5	510	500	505	
275	5	.5	266		264	

## Reference Standards

1. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
2. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
3. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
4. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

**CEM CALIBRATION DATA SHEET**

Date 9/8/95

Analyzer Type/Model No, 7000

Analyzer Working Range \_\_\_\_\_

Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
0	5	.5	0		0.2	
10	5	.5	10.5		10.3	
5	5	.5	5.6		5.7	

## Reference Standards

1. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
2. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
3. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
4. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

CEM CALIBRATION DATA SHEET

Date 9/8/95      THK

Analyzer Type/Model Teco, Model 51

Analyzer Working Range \_\_\_\_\_

Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
0	9	1.0	2	20	7	
450	9	1	444	459	439	
90	9	1	88	80	90	

## Reference Standards

1. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
2. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
3. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
4. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

CEM CALIBRATION DATA SHEET

Date 1-17-95

Analyzer Type/Model O<sub>2</sub>, MSA

Analyzer Working Range \_\_\_\_\_

Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
18.0	5	.5	19.0		19.6	
19.9	5	.5	20.0		21.6	
21.0	5	.5	21.7		23.8	

## Reference Standards

1. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
2. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
3. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
4. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

## CEM CALIBRATION DATA SHEET

Date 9-12-95

Analyzer Type/Model CO<sub>2</sub> / Beckman 868  
 Analyzer Working Range \_\_\_\_\_  
 Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_  
 Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
0	5	.5	0.0		0.60	
1.56	5	.5	<del>1.56</del> 1.56		1.61	
1.00	5	.5	.98		1.00	
.52	5	.5	.44		.49	

## Reference Standards

- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

## CEM CALIBRATION DATA SHEET

Date 9/12/95

Analyzer Type/Model CO / Beckman 868  
 Analyzer Working Range \_\_\_\_\_  
 Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_  
 Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
0	5	.5	0		10	
512	5	.5	515		520	
275	5	.5	269		271	

## Reference Standards

- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
- Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

## CEM CALIBRATION DATA SHEET

Date 9/12/85Analyzer Type/Model NO / Teco 10

Analyzer Working Range \_\_\_\_\_

Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
0	5	.5	0		0.5	
10	5	.5	10.3		10.7	
5	5	.5	5.9		6.6	

## Reference Standards

1. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
2. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
3. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
4. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

## CEM CALIBRATION DATA SHEET

Date 9/12/85Analyzer Type/Model Teco / Model 51 THC

Analyzer Working Range \_\_\_\_\_

Analyzer Zero Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Analyzer Span Control Setting (Initial/Final) \_\_\_\_\_ / \_\_\_\_\_

Known Cylinder Concentration	Delivery P (psi)	Analyzer Flow Rate	Measured Concentration	% Deviation of Fullscale	Post-test Measured Concentration	Post-test % Deviation from known Concentrat.
0	9	1.0	2		5	
450	9	1	457		449	
90	9	1	93		90	

## Reference Standards

1. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
2. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
3. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_
4. Supplier \_\_\_\_\_ Tank # \_\_\_\_\_  
 Tank Pressure \_\_\_\_\_ Concentration \_\_\_\_\_  
 Certified by \_\_\_\_\_ Certification date \_\_\_\_\_

Figure 4-1. CEM calibration data sheet.

5 lb batch of Non-Recycler Waste  
prepared for estimation of moisture  
content of waste

TABLE 4-1. BURN MATERIAL COMPOSITION

(NON-RECYCLER %)	AVID RECYCLER (%)
PAPER	
Newspaper, books and office paper	32.8 743.87
Magazines and junk mail	11.1 251.80
Corrugated cardboard and craft paper	7.6 172.43
Paperboard, milk cartons and drink boxes	10.3 233.60
PLASTIC RESIN (all types may contain trace chlorine or plasticizers e.g., cadmium PET #1 (bottle bill))	0.6 13.69
HDPE: #2, LDPE #4, and PP #5	6.6 143.56
PVC: #3	0.2 4.60
PS: #6	0.1 2.25
MIXED #7	0.1 2.27
FOOD WASTE	
TEXTILE/LEATHER	
WOOD (treated/untreated)	
GLASS/CERAMICS	
Bottles/Jars (Bottle bill)	
Ceramics (broken plates and cups)	
METAL - FERROUS	
Iron - cans	
NON-FERROUS	
Aluminum - cans (Bottle Bill), Aluminum foil, other Aluminum Other Non-Iron (wire, copper pipe, batteries)	
PERCENT TOTAL	
TOTAL WEIGHT GENERATED PER HOUSEHOLD FOR DISPOSAL IN BURN BARRELS	10.8 lb/day

TEST PERFORMED 10/2/95 and 10/3/95  
 Total hours in 105°C : 12h  
 TEST : 2267.19g  
 TOTAL : 100.0  
 3.3 lb/day

5 lb batch of AVID RECYCLER WASTE  
Prepared for estimation of moisture  
content of waste

TABLE 4-1. BURN MATERIAL COMPOSITION

(NON-RECYCLER %)	AVID RECYCLER (%)
PAPER	
Newspaper, books and office paper	32.8
Magazines and junk mail	11.1
Corrugated cardboard and craft paper	7.6
Paperboard, milk cartons and drink boxes	10.3
PLASTIC RESIN (all types may contain trace chlorine or plasticizers e.g., cadmium PET #1 (bottle bill))	0.6
HDPE: #2, LDPE #4, and PP #5	6.6
PVC: #3	0.2
PS: #6	0.1
MIXED #7	0.1
FOOD WASTE	
TEXTILE/LEATHER	
WOOD (treated/untreated)	
GLASS/CERAMICS	
Bottles/Jars (Bottle bill)	
Ceramics (broken plates and cups)	
METAL - FERROUS	
Iron - cans	
NON-FERROUS	
Aluminum - cans (Bottle Bill), Aluminum foil, other Aluminum Other Non-Iron (wire, copper pipe, batteries)	
PERCENT TOTAL	
TOTAL WEIGHT GENERATED PER HOUSEHOLD FOR DISPOSAL IN BURN BARRELS	10.8 lb/day

TEST PERFORMED 10/3/95 and 10/4/95  
 Total hours in 105°C : 12h  
 TEST : 2267.19g  
 TOTAL : 100.0  
 3.3 lb/day

TEST PERFORMED 10/3/95 and 10/4/95  
 Total time in 105°C : 12h  
 TEST : 2267.19g  
 TOTAL : 100.0  
 3.3 lb/day

## APPENDIX D. FUEL PREPARATION NOTES

D-2

AVID RECYCLER BUTCH WASTE 25lb

PREPARED 8/30/95

TEST #1

Revision 3  
August 1995  
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TABLE 4-1. BURN MATERIAL COMPOSITION

NON-RECYCLER (%) AVID RECYCLER (%)

## PAPER

Newspaper, books and office paper	32.8	3.3	<u>374.56</u>
Magazines and junk mail	11.1	--	
Corrugated cardboard and craft paper	7.6	--	
Paperboard, milk cartons and drink boxes	10.3	61.9	<u>7019.36</u>

PLASTIC RESIN (all types may contain trace chlorine or plasticizers e.g., cadmium)

PET #1 (bottle bill)	0.6	--	
HDPE: #2, LDPE #4, and PP #5	6.6	10.4	<u>1179.99</u>
PVC: #3	0.2	4.5	<u>510.92</u>
PS: #6	0.1	0.3	<u>34.17</u>
MIXED #7	0.1	0.3	<u>34.19</u>

## FOOD WASTE

TEXTILE/LEATHER	3.7	--	
WOOD (treated/untreated)	1.1	3.7	<u>419.60</u>

## GLASS/CERAMICS

Bottles/Jars (Bottle Bill)	9.7	--	
Ceramics (broken plates and cups)	0.4	6.9	<u>782.65</u>

## METAL - FERROUS

Iron - cans	7.3	4.0	<u>453.59</u>
-------------	-----	-----	---------------

## NON-FERROUS

Aluminum - cans (Bottle Bill), Aluminum foil, other Aluminum	1.7	1.0	<u>113.59</u>
Other Non-Iron (wire, copper pipe, batteries)	1.1	3.7	<u>419.46</u>
		TOTAL:	<u>11342.08g</u>

## PERCENT TOTAL

100.0	100.0	
10.8 lb/day	3.3 lb/day	

TOTAL WEIGHT GENERATED PER  
HOUSEHOLD FOR DISPOSAL IN  
BURN BARRELSAVID RECYCLER BUTCH 25lb

PREPARED 8/1/95

TEST #2

Revision 3  
August 1995  
Page 3 of 12

TABLE 4-1. BURN MATERIAL COMPOSITION

NON-RECYCLER (%) AVID RECYCLER (%)

## PAPER

Newspaper, books and office paper	32.8	3.3	<u>374.56</u>
Magazines and junk mail	11.1	--	
Corrugated cardboard and craft paper	7.6	--	
Paperboard, milk cartons and drink boxes	10.3	61.9	<u>7019.48</u>

PLASTIC RESIN (all types may contain trace chlorine or plasticizers e.g., cadmium)

PET #1 (bottle bill)	0.6	--	
HDPE: #2, LDPE #4, and PP #5	6.6	10.4	<u>1179.58</u>
PVC: #3	0.2	4.5	<u>511.01</u>
PS: #6	0.1	0.1	<u>34.03</u>
MIXED #7	0.1	0.1	<u>34.07</u>

## FOOD WASTE

TEXTILE/LEATHER	3.7	--	
WOOD (treated/untreated)	1.1	3.7	<u>419.26</u>

## GLASS/CERAMICS

Bottles/Jars (Bottle Bill)	9.7	--	
Ceramics (broken plates and cups)	0.4	6.9	<u>782.64</u>

## METAL - FERROUS

Iron - cans	7.3	4.0	<u>453.87</u>
-------------	-----	-----	---------------

## NON-FERROUS

Aluminum - cans (Bottle Bill), Aluminum foil, other Aluminum	1.7	1.0	<u>113.79</u>
Other Non-Iron (wire, copper pipe, batteries)	1.1	3.7	<u>419.75</u>
		TOTAL:	<u>11340.71g</u>

## PERCENT TOTAL

100.0	100.0	
10.8 lb/day	3.3 lb/day	

TOTAL WEIGHT GENERATED PER  
HOUSEHOLD FOR DISPOSAL IN  
BURN BARRELS

NON-RECYCLER BATCH OF WASTE ~~15 lb = 6.8046~~  
TEST # 4

REVISIONS  
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PREPARED 9/10/95 TABLE 4-1. BURN MATERIAL COMPOSITION

(NON-RECYCLER (%)) AVID RECYCLER (%)

PAPER

Newspaper, books and office paper	32.8	2231.71	3.3
Magazines and junk mail	11.1	755.21	--
Corrugated cardboard and craft paper	7.6	517.08	--
Paperboard, milk cartons and drink boxes	10.3	700.81	61.9

PLASTIC RESIN (all types may contain trace chlorine or plasticizers e.g., cadmium)

PET #1 (bottle bill)	0.6	40.83	--
HDPE: #2, LDPE #4, and PP #5	6.6	449.11	10.4
PVC: #3	0.2	13.62	4.5
PS: #6	0.1	6.80	0.3
MIXED #7	0.1	6.80	0.3

FOOD WASTE

TEXTILE/LEATHER	3.7	215.75	251.75
WOOD (treated/untreated)	1.1	74.83	3.7

GLASS/CERAMICS

Bottles/Jars (Bottle bill)	9.7	660.06	--
Ceramics (broken plates and cups)	0.4	27.35	6.9

METAL - FERROUS

Iron - cans	7.3	496.63	4.0
-------------	-----	--------	-----

NON-FERROUS

Aluminum - cans (Bottle Bill), Aluminum foil, other Aluminum	1.7	115.67	1.0
Other Non-Iron (wire, copper pipe, batteries)	1.1	74.84	3.7
TOTAL:	6811.03g		

PERCENT TOTAL

TOTAL WEIGHT GENERATED PER HOUSEHOLD FOR DISPOSAL IN BURN BARRELS	100.0	100.0
	10.8 lb/day	3.3 lb/day

NON RECYCLER BATCH OF WASTE ~~15 lb = 6.8046~~  
TEST # 5

REVISIONS  
August 1995  
Page 3 of 12

PREPARED 9/12/95 TABLE 4-1. BURN MATERIAL COMPOSITION

(NON-RECYCLER (%)) AVID RECYCLER (%)

PAPER

Newspaper, books and office paper	32.8	2231.59	3.3
Magazines and junk mail	11.1	755.17	--
Corrugated cardboard and craft paper	7.6	517.11	--
Paperboard, milk cartons and drink boxes	10.3	700.80	61.9

PLASTIC RESIN (all types may contain trace chlorine or plasticizers e.g., cadmium)

PET #1 (bottle bill)	0.6	40.74	--
HDPE: #2, LDPE #4, and PP #5	6.6	449.05	10.4
PVC: #3	0.2	13.61	4.5
PS: #6	0.1	6.83	0.3
MIXED #7	0.1	6.81	0.3

FOOD WASTE

TEXTILE/LEATHER	3.7	251.73	--
WOOD (treated/untreated)	1.1	74.67	3.7

GLASS/CERAMICS

Bottles/Jars (Bottle bill)	9.7	660.45	--
Ceramics (broken plates and cups)	0.4	27.30	6.9

METAL - FERROUS

Iron - cans	7.3	496.43	4.0
-------------	-----	--------	-----

NON-FERROUS

Aluminum - cans (Bottle Bill), Aluminum foil, other Aluminum	1.7	115.41	1.0
Other Non-Iron (wire, copper pipe, batteries)	1.1	74.63	3.7
TOTAL:	6810.01g		

PERCENT TOTAL

TOTAL WEIGHT GENERATED PER HOUSEHOLD FOR DISPOSAL IN BURN BARRELS	100.0	100.0
	10.8 lb/day	3.3 lb/day

Calculations of weight of different kind of waste in Non-Recycler  
5 lb = 2.268 kg

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August 1995  
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TABLE 4-1. BURN MATERIAL COMPOSITION

	NON-RECYCLER (%)		AVID RECYCLER (%)
PAPER	g	kg	
Newspaper, books and office paper	743.90	32.8	0.74390
Magazines and junk mail	251.75	11.1	0.25175
Corrugated cardboard and craft paper	172.37	7.6	0.17237
Paperboard, milk cartons and drink boxes	233.60	10.3	0.23360
PLASTIC RESIN (all types may contain trace chlorine or plasticizers e.g., cadmium)			
PET #1 (bottle bill)	13.61	0.01361	--
HDPE: #2, LDPE #4, and PP #5	143.69	6.6	0.14369
PVC: #3	4.54	0.2	0.00454
PS: #6	2.27	0.1	0.00227
MIXED #7	2.27	0.1	0.00227
FOOD WASTE	129.28	5.7	0.12928
TEXTILE/LEATHER	83.92	3.7	0.08392
WOOD (treated/untreated)	24.95	1.1	0.02495
GLASS/CERAMICS			
Bottles/Jars (Bottle bill)	220.00	9.7	0.22000
Ceramics (broken plates and cups)	9.07	0.4	0.00907
METAL - FERROUS			
Iron - cans	165.56	7.3	0.16556
NON-FERROUS			
Aluminum - cans (Bottle Bill), Aluminum foil, other Aluminum	38.56	1.7	0.03856
Other Non-Iron (wire, copper pipe, batteries)	24.95	1.1	0.02495
PERCENT TOTAL	TOTAL: 2270.29	100.0	2.270
TOTAL WEIGHT GENERATED PER HOUSEHOLD FOR DISPOSAL IN BURN BARRELS	10.8 lb/day	3.3 lb/day	

D-4

Calculations of weight of different kind of waste in AVID RECYCLER barrels.  
5 lb = 2.268 kg

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TABLE 4-1. BURN MATERIAL COMPOSITION

	NON-RECYCLER (%)		AVID RECYCLER (%)
PAPER	g	kg	
Newspaper, books and office paper	32.8	74.84	3.3 0.07484
Magazines and junk mail	11.1	--	
Corrugated cardboard and craft paper	7.6	--	
Paperboard, milk cartons and drink boxes	10.3	1403.89	61.9 1.40389
PLASTIC RESIN (all types may contain trace chlorine or plasticizers e.g., cadmium)			
PET #1 (bottle bill)	0.6	--	
HDPE: #2, LDPE #4, and PP #5	6.6	235.87	10.4 0.23587
PVC: #3	0.2	102.06	4.5 0.10206
PS: #6	0.1	6.80	0.3 0.00680
MIXED #7	0.1	6.80	0.3 0.00680
FOOD WASTE	5.7	--	
TEXTILE/LEATHER	3.7	--	
WOOD (treated/untreated)	1.1	83.92	3.7 0.08392
GLASS/CERAMICS			
Bottles/Jars (Bottle bill)	9.7	--	
Ceramics (broken plates and cups)	0.4	156.49	6.9 0.15649
METAL - FERROUS			
Iron - cans	7.3	90.72	4.0 0.09072
NON-FERROUS			
Aluminum - cans (Bottle Bill), Aluminum foil, other Aluminum	1.7	22.68	1.0 0.02268
Other Non-Iron (wire, copper pipe, batteries)	1.1	83.92	3.7 0.08392
PERCENT TOTAL	TOTAL: 2267.99	100.0	100.0
TOTAL WEIGHT GENERATED PER HOUSEHOLD FOR DISPOSAL IN BURN BARRELS	10.8 lb/day	3.3 lb/day	

CALCULATION OF DIFFERENT KIND OF TRASH  
TO MAKE 25lb BUTCH OF WASTE

REVISION 3  
August 1995  
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TABLE 4-1. BURN MATERIAL COMPOSITION

	<u>NON-RECYCLER (%)</u>	<u>AVID RECYCLER (%)</u>
PAPER		
Newspaper, books and office paper	32.8 3719.52	3.3 374.22
Magazines and junk mail	11.1 1258.74	--
Corrugated cardboard and craft paper	7.6 861.84	--
Paperboard, milk cartons and drink boxes	10.3 1168.02	61.9 7019.46
PLASTIC RESIN (all types may contain trace chlorine or plasticizers e.g., cadmium)		
PET #1 (bottle bill)	0.6 68.04	--
HDPE: #2, LDPE #4, and PP #5	6.6 748.44	10.4 1179.36
PVC: #3	0.2 22.68	4.5 510.30
PS: #6	0.1 11.34	0.3 34.02
MIXED #7	0.1 11.34	0.3 34.02
FOOD WASTE	5.7 646.33	--
TEXTILE/LEATHER	3.7 419.58	--
WOOD (treated/untreated)	1.1 124.74	3.7 419.58
GLASS/CERAMICS		
Bottles/Jars (Bottle bill)	9.7 1099.98	--
Ceramics (broken plates and cups)	0.4 45.36	6.9 782.46
METAL - FERROUS		
Iron - cans	7.3 827.82	4.0 453.60
NON-FERROUS		
Aluminum - cans (Bottle Bill), Aluminum foil, other Aluminum	1.7 192.78	1.0 113.4
Other Non-Iron (wire, copper pipe, batteries)	1.1 124.74	3.7 419.58
PERCENT TOTAL	100.0	100.0
TOTAL WEIGHT GENERATED PER HOUSEHOLD FOR DISPOSAL IN BURN BARRELS	10.8 lb/day	3.3 lb/day

CALCULATIONS OF DIFFERENT KIND OF WASTE WEIGHT TO MAKE 15lb BUTCH

$$0.4536 \cdot lb = kg$$

$$15lb = 6.804$$

Table 4-1. BURN MATERIAL COMPOSITION

	<u>NON-RECYCLER</u>	<u>AVID RECYCLER</u>
	%	%
PAPER	g kg	
① Newspaper, books and office paper	2.231.71 32.8 2.23171	3.3
② Magazines and junk mail	755.24 11.1 0.75524	--
③ Corrugated cardboard and kraft paper	517.10 7.6 0.51710	--
④ Paperboard, milk cartons and drink boxes	700.81 10.3 0.70081	61.9
⑤ PLASTIC RESIN (all types may contain trace Cl or plasticizers e.g., Cd)		
PET #1 (bottle bill)	40.82 0.6 0.04082	--
⑥ HDPE: #2, LDPE #4 and PP #5	449.06 6.6 0.44906	10.4
⑦ PVC: #3	13.61 0.2 0.01361	4.5
⑧ PS: #6	6.80 0.1 0.00680	0.3
⑨ MIXED #7	6.80 0.1 0.00680	0.3
⑩ FOOD WASTE	387.83 5.7 0.38783	--
⑪ TEXTILE/LEATHER	251.75 3.7 0.25175	--
⑫ WOOD (treated/untreated)	74.84 1.1 0.07484	3.7
GLASS/CERAMICS		

		g	kg	
(13)	Bottles/Jars (Bottle bill)	659.99	9.7	0.65999
(14)	Ceramics (broken plates and cups)	27.22	0.4	0.027.22
METAL - Ferrous				
(15)	Fe - cans	436.69	7.3	0.43669
NON-Ferrous				
(16)	Al - cans (Bottle Bill), Al foil, other Al	115.67	1.7	0.11567
(17)	Other Non-Fe (wire, copper pipe, batteries)	74.84	1.1	0.07484
PERCENT TOTAL		100.0	100.0	
TOTAL WEIGHT GENERATED PER HOUSEHOLD FOR DISPOSAL IN BURN BARRELS		6810.78	10.8 lb/day	3.3 lb/day

## APPENDIX E. SAMPLE CUSTODY SHEETS



Report To:  
Chris Lutes

Bill To:  
Acurex Environmental Corp.  
P.O. Box 13109  
Research Triangle Park, NC  
27709

### Chain of Custody Record

PROJECT SITE Household Waste Burn		PO# <u>CH 01925 E</u>	NO. OF CONTAINERS <u>1</u>	ANALYSES <u>M101A</u>	ERO PROJECT # <u>8944.001</u>						
SITE NAME ERA ERC, Research Triangle Park, NC		COLLECTED BY <u>(Signature)</u>									
FIELD SAMPLE ID	RUSH FACTOR	SAMPLE MATRIX	DATE/TIME	REMARKS	LAB ID NO. (for lab use only)						
1		4% KHN0 <sub>3</sub>		M101A Impinger Catch							
2		10% H <sub>2</sub> SO <sub>4</sub>									
3											
4											
5											
3 Blank											
REMARKS					RELINQUISHED BY: <u>Mark J. Park</u>	DATE TIME <u>10/26/95 1500</u>					
RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME

#### LAB USE ONLY

RECEIVED FOR LAB BY: <u>K. Lutes</u>	DATE <u>9/12/95</u>	TIME <u>1000</u>	AIRBILL NO.	OPENED BY:	DATE	TIME	TEMP °C	SEAL #	CONDITION:
REMARKS									

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### EPA/AEERL ONSITE LABORATORY SUPPORT CONTRACT SAMPLE CHAIN OF CUSTODY RECORD

rev. 11/94

Facility of Origin: <u>Hill Open Burn</u>	Facility of Destination: <u>B-1 Lab</u>	Analyses Requested				OSL Project #: <u>8844.001</u>				
Project: <u>Open Burn or Trash in Barrels</u>		VOCs	Aldehydes	A					Request Results By: <u>C. Lutes</u>	Report Results To: <u>C. Lutes</u>
Samples Collected By: <u>P. Karkow</u>										
Field Sample ID	Sample Description:	Date and Time						Remarks:	Lab ID:	
CAN #6	1 VOC Can	9/12/95	1					#807 onca5		
CAN #7	1 VOC Can		1					#709 onca5		
All #8	Aldehydes: DAPH		1							
Comments:								Relinquished By (1): <u>P. H. Karkow</u>	Date/Time (1): <u>9/12/95 1330</u>	
Received By (1): <u>M. Lutes</u>	Date/Time (1): <u>9-12-95 14:30</u>	Relinquished By (2):	Date/Time (2):	Received By (2):	Date/Time (2):					
Disposal Information (Include Date, Time, Custodian, and Comments):										

EPA/AEERL ONSITE LABORATORY SUPPORT CONTRACT  
SAMPLE CHAIN OF CUSTODY RECORD  
rev. 11/94

Page \_\_\_\_ of 3

Facility of Origin: <i>Hill EPA</i>	Facility of Destination: <i>B-1 Acrex</i>	Analyses Requested			OSL Project #: <i>8844-001</i>	
Project: <i>Trash Barn</i>					Request Results By: <i>C. Lutes</i>	Report Results To: <i>C. Lutes</i>
Samples Collected By: <i>P. Karibov</i>					For Problems Contact (Name/Phone #): <i>C. Lutes / P. Karibov</i>	
Field Sample ID	Sample Description:	Date and Time	<i>Analyses</i>	<i>VOC</i>	Remarks:	Lab ID:
Ald #7	Daphne ONPH		1			
Can #3	Summa Can		1		# 798	
Comments:			Relinquished By (1): <i>Peter K. Karibov</i>	Date/Time (1): <i>9/8/95 (1515)</i>		
Received By (1): <i>P. Karibov</i>	Date/Time (1): <i>9/8/95 1540</i>	Relinquished By (2):	Date/Time (2):	Received By (2):	Date/Time (2):	
Disposal Information (Include Date, Time, Custodian, and Comments):						

EPA/AEERL ONSITE LABORATORY SUPPORT CONTRACT  
SAMPLE CHAIN OF CUSTODY RECORD  
rev. 11/94

Page 1 of 1

Facility of Origin: <i>Hill</i>	Facility of Destination: <i>Acrex prep Lab</i>	Analyses Requested			OSL Project #: <i>8844-001</i>	
Project: <i>Open Barn of Household Waste</i>					Request Results By: <i>C. Lutes</i>	Report Results To: <i>C. Lutes</i>
Samples Collected By: <i>P. Karibov</i>					For Problems Contact (Name/Phone #): <i>C. Lutes / P. Karibov</i>	
Field Sample ID	Sample Description:	Date and Time	<i>Analyses</i>	<i>VOC</i>	Remarks:	Lab ID:
Ald #6	DAPHN Cartridge	9/6/95 1625	1			
Can #2	Summa Cart	"	1			
Can #4						
Comments:			Relinquished By (1): <i>Peter K. Karibov</i>	Date/Time (1): <i>9/6/95 1621</i>		
Received By (1):	Date/Time (1):	Relinquished By (2):	Date/Time (2):	Received By (2):	Date/Time (2):	
Disposal Information (Include Date, Time, Custodian, and Comments):						



#### **Environmental Systems Division**

4915 Prospectus Drive  
Durham, NC 27713  
(919) 544-4535

二〇

## **Chain of Custody Record**

Page \_\_\_\_\_ of \_\_\_\_\_

PROJECT SITE		PO#		NO. OF CONTAINERS	ANALYSES				ERQ PROJECT #		
SITE NAME		EAC HHI									
COLLECTED BY (Signature)		Project							DATE REPORT DUE		
									VERBAL/FAX/HARDCOPY		
FIELD SAMPLE ID	RUSH FACTOR	SAMPLE MATRIX	DATE/TIME							REMARKS	LAB ID NO. (for lab use only)
Sample #3	N	Soil		X							
Alumite #5	N	Concrete		X							
REMARKS								RELINQUISHED BY:			DATE 7/1 TIME 5PM
RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME
LAB USE ONLY											
RECEIVED FOR LAB BY:	DATE	TIME	AIRBILL NO.	OPENED BY:	DATE	TIME	TEMP °C	SEAL #	CONDITION:		
REMARKS											



#### **Environmental Systems Division**

4915 Prospectus Drive  
Durham, NC 27713  
(919) 544-4535

Report To: C.C. Lutes

**Bill To:**

## **Chain of Custody Record**

Page \_\_\_\_\_ of \_\_\_\_\_

PROJECT SITE AVN Recycle Test #1	PO# 8844.061	NO. OF CONTAINERS	ANALYSES			ERG PROJECT #					
SITE NAME/ ERI HII											
COLLECTED BY (Signature)						DATE REPORT DUE					
						VERBAL/FAX/HARDCOPY					
FIELD SAMPLE ID	RUSH FACTOR	SAMPLE MATRIX	DATE/ TIME					LAB ID NO. (for lab use only)			
Sample #2	None	Can		X							
Sample #4	None	Cartridge		X		Tall Fridge top shelf left side					
REMARKS					RELINQUISHED BY			DATE 8/30	TIME 5:40 PM		
RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME	RELINQUISHED BY:	DATE	TIME
LAB USE ONLY											
RECEIVED FOR LAB BY:	DATE	TIME	AIRBILL NO.:	OPENED BY:	DATE	TIME	TEMP °C	SEAL #	CONDITION:		
REMARKS											

## APPENDIX F: ACUREX RAW DATA

Acurex-RTP Laboratory Results - Raw VOC Analytical Data

EPA Method TO14/8240 Compounds

Hewlett Packard 5890 GC / 5971 MSD; 30m x 0.53u DB-624 fused silica capillary

Tekmar LSC-2000 w/Carbotrap/Carbosieve SIII.

PQL = Practical Quantitation Limit

N/D = Not Detected

J = Detected @< PQL

N/A = Not Applicable

Sample Type		Can	Can	Can	Can	Can	
Test #		1	2	3	4	5	
Master Index		3549	3553	3554	3555	3556	
Sample ID		Avid	Avid	Hut	Non	Non	
		Recycler	Recycler	Blank	Recycler	Recycler	
Collection Date		1/31/95	2/1/95	2/2/95	2/3/95	2/15/95	
Analysis Date		3/1/95	3/2/95	3/2/95	3/2/95	3/2/95	
	MDL	PQL	NG/L	NG/L	NG/L	NG/L	
-		-	-	-	-	-	
dichlorodifluoromethane	0.33	1.08	<148	<136	<22.2	<182	<117
dichlorotetrafluoroethane	0.61	2.01	<207	<190	<31.1	<256	<164
chloromethane	0.3	1	315	329	<21.7	251	111
vinyl chloride	0.22	1	<75.7	<69.6	<11.3	<93.2	<59.7
1,3-Butadiene	0.1	1	370	146	<9.90	186	141
bromomethane	0.11	1	<115	<105	<17.2	<141	<90.9
chloroethane	0.39	1.28	<78.4	<72.0	<11.7	<96.5	<61.8
trichlorofluoromethane	0.11	1	<166	<153	<24.9	<205	<131
Dichlorotrifluoroethane	0.1	1	<184	<169	<27.6	<227	<145
Trichlorotrifluoroethane	0.06	1	<227	<209	<34.0	<280	<179
1,1-dichloroethene	0.15	1	<117	<108	<17.5	<144	<92.8
Acetone	0.1	1	535	336	7.17	1284	505
Carbon Disulfide	0.1	1	<94.1	<86.4	<14.0	<115	<74.3
methylene chloride	0.49	1.62	<103	166	<15.4	<126	<81.3
3-Methylpentane	0.1	1	<104	<96.2	<15.6	<129	<82.7
1,1-dichloroethane	0.05	1	<119	<110	<17.9	<147	<94.6
Butyl Methyl Ether	0.1	1	<124	<114	<18.5	<152	<97.9
Cis-1,2-Dichloroethene	0.06	1	<117	<108	<17.6	<145	<93.0
2-Butanone	0.1	1	<88.5	<81.2	<13.2	56	91.5
Ethyl Acetate	0.1	1	<107	<98.4	<16.0	<132	<84.6
chloroform	0.33	1.09	<144	<133	<21.6	<178	<114
1,1,1-trichloroethane	0.07	1	<161	<148	<24.1	<199	<127
carbon tetrachloride	0.35	1.14	<186	<171	<27.9	<230	<147
benzene	0.32	1.07	2437	917	<14.1	1684	675
1,2-dichloroethane	0.09	1	<131	<120	<19.6	<162	<103
trichloroethene	0.08	1	<162	<148	<24.2	<199	<127
1,2-dichloropropane	0.11	1	<137	<126	<20.5	<168	<108
cis-1,3-dichloropropene	0.15	1	<136	<125	<20.4	<168	<108
Dimehtyl Disulfide	0.1	1	<114	<105	<17.1	<141	<90.4
4-Methyl-2-Pentanone	0.1	1	<121	<111	<18.2	<149	<96.1
Octane	0.1	1	<138	<127	<20.6	<170	<109

toluene	0.1	1	934	311	<16.7	596	311
trans-1,3-dichloropropene	0.19	1	<136	<125	<20.4	<168	<108
1,1,2-trichloroethane	0.06	1	<163	<150	<24.4	<201	<128
tetrachloroethene	0.05	1	<201	<184	<30.1	<248	<158
Butyl Acetate	0.1	1	<141	<129	<21.0	<173	<111
1,2-dibromoethane	0.07	1	<228	<209	<34.0	<280	<180
chlorobenzene	0.05	1	<136	<125	<20.4	<168	<107
Nonane	0.1	1	<154	<141	<23.0	<190	<121
ethyl benzene	0.09	1	315	123	<19.2	403	111
m,p-xylene	0.05	1	198	<118	<19.2	<158	<101
o-xylene	0.13	1	148	<118	<19.2	<158	<101
Styrene	0.07	1	1061	426	<18.9	1154	247
Pinene	0.1	1	<165	<151	<24.7	<203	<130
1,1,2,2-tetrachloroethane	0.06	1	<204	<187	<30.5	<251	<161
Decane	0.1	1	<172	<158	<25.7	<212	<135
4-Ethyltoluene	0.1	1	<146	<134	<21.8	<179	<115
1,3,5-Trimethylbenzene	0.11	1	<146	<134	<21.8	<179	<115
1,2,4-Trimethylbenzene	0.22	1	<146	<134	<21.8	<179	<115
Limonene	0.1	1	<165	<151	<24.7	<203	<130
1,3-Dichlorobenzene	0.05	1	<178	<164	<26.7	<220	<141
1,4-Dichlorobenzene	0.04	1	<89.6	<82.3	<13.4	<110	<70.7
Benzyl Chloride	0.1	1	<153	<141	<22.9	<189	<121
Undecane	0.1	1	<189	<174	<28.3	<233	<149
1,2-Dichlorobenzene	0.04	1	<178	<164	<26.7	<220	<141
Dodecane	0.1	1	<206	<189	<30.8	<254	<162
1,2,4-Trichlorobenzene	0.07	1	<131	<120	<19.6	<162	<103
Hexachlorobutadiene	0.04	1	<317	<291	<47.4	<390	<250
Naphthalene	0.1	1	343	129	<23.4	250	105

**APPCD Organic Support Laboratory**  
**Household Waste - Semivolatile Analysis**

Project:	Household Wastes	Date Acquired:	8/30/96
Sample Id:	Trash #1	Date Sampled:	8/30/95
Sample Name:	Trash Semivol #1	Date Extracted:	9/10/95
MS Data File:	STRASH1B	Dilution factor:	none
Method:	SW846-Method 8270	Analyst:	Bill Preston
		QC reviewer:	Dennis Tabor

**Comment:**

Avid-Recycler Test #1

**Presampling Surrogates**                            **Percent Recovery (%)**

d10-Anthracene	79.4
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**Post Sampling Surrogates**                            **Percent Recovery (%)**

2-Fluorophenol	15.9
d5-Phenol	47.5
d5-Nitrobenzene	34.9
2-Fluorobiphenyl	59.5
2,4,6-Tribromophenol	70.6
d14-Terphenyl	107.9

**Target Analytes**                                    **Total µg**

n-Nitrosomethylmethamphetamine	ND
Methyl Methanesulfonate	ND
n-Nitrosodiethylamine	ND
Bis-(2-Chloroethyl) ether	ND
Ethyl Methanesulfonate	ND
Aniline	ND
Phenol	91.2
2-chlorophenol	1.1J
1,3-Dichlorobenzene	ND

**Target Analytes**                                    **Total µg**

1,4-Dichlorobenzene	ND
1,2-Dichlorobenzene	ND
Benzyl Alcohol	ND

Bis (2-Chloroisopropyl) ether	ND
2-Methylphenol	14.5
n-Nitrosopyrrolidine	ND
Acetophenone	4.9J
Hexachloroethane	ND
4-Methylphenol	25.9
n-Nitrosodi-n-propylamine	ND
Nitrobenzene	ND
1-Nitrosopiperidine	ND
Isophorone	ND
2,4-Dimethylphenol	10.8
Bis (2-chloroethoxy) methane	ND
2,4_Dichlorophenol	ND
1,2,4-Trichlorobenzene	ND
Naphthalene	37.9
2-Nitrophenol	ND
2,6-Dichlorophenol	ND
Hexachloropropene	ND
4-Chloroaniline	ND
Hexachlorobutadiene	ND
n-Nitrosodi-n-butylamine	ND
4-Chloro-3-methyl-phenol	ND
2-MethylNaphthalene	6.7J
Isosafrole	ND
1,2,4,5 Tetrachlorobenzene	ND
Hexachlorobutadiene	ND
2,4,6-Trichlorophenol	ND
2,4,5-Trichlorophenol	ND
2-Choronaphthalene	ND
1,3 Dinitrobenzene	ND
2-Nitroaniline	ND
3-Nitroaniline	ND
Safrole	ND

## Target Analytes

Acenaphthylene	15.9
1,4-Naphthoquinone	2.4J
Dimethylphthalate	ND
2,6-Dinitrotoluene	ND
Acenaphthene	ND
1-Naphthylamine	ND
2-Naphthylamine	ND
4-Nitroaniline	ND
2,4-Dinitrophenol	ND
Dibenzofuran	3.6J

Pentachlorobenzene	ND
2,4-Dinitrophenol	ND
2,3,4,6-Tetrachlorophenol	ND
4-Nitrophenol	ND
Fluorene	4.1J
Diethyl phthalate	1.2J
4-Chlorophenyl phenyl ether	ND
2-Methyl-4,6-dinitrophenol	ND
5-Nitro-o-toluidine	ND
Diphenylamine	ND
Diallate	ND
1,3,5-Trinitrobenzene	ND
4-Bronophenyl phenyl ether	ND
Phenacetin	ND
Hexachlorobenzene	ND
4-Aminobiphenyl	ND
Dinoseb	ND
Pentachlorophenol	ND
Pentachloronitrobenzene	ND
Phenanthrene	19.3
Anthracene	3.8J
Di-n-butyl phthalate	3.8J
Isodrin	ND
Fluoranthene	8.0J
3,3'-Dimethylbenzidine	ND
Pyrene	10.6
Chlorobenzilate	ND
p-Dimethylaminoazobenzene	ND
2-Acetylaminofluorene	ND
Benzyl butyl phthalate	3.4J

### Target Analytes

3,3'-Dichlorobenzidine	ND
Benzo (a) anthracene	6.7J
Chrysene	8.3J
di-n-octyl phthalate	ND
Benzo (b) fluoranthene	5.8J
7,12-Dimethylbenz (a) anthracene	ND
Benzo (k) fluoranthene	1.3J
Benzo (a) pyrene	4.0J
3-Methylcholanthrene	ND
Indeno (1,2,3-cd) pyrene	3.3J
Dibenz (a,h) anthracene	1.1J
Benzo (ghi) perylene	2.8J

Tentatively Identified Cmpds	ret time (min)	Total µg
Cyclotrisiloxane,hexamethyl-	6.47	17.1
Unknown	7.12	14.7

Acetamide, N,N-dimethyl -	8.36	15.3
Unknown	12.41	17.1
Hexanoic acid, 2-ethyl	17.16	16.6
Cyclopentasiloxane, decameth	17.39	36.5
Unknown	19.99	14.8
Unknown	26.67	35.0
Unknown Hydrocarbon	27.59	53.2
1,6Anhydor-.beta.Dglucopyran	28.09	25.5
Unknown	30.57	16.6
Phenol, 2,6-bis(1,1-dimethyleth	33.59	26.7
Unknown Hydrocarbon	43.83	19.1
Unknown	44.93	84.3
Unknown sustit-Hexanedioic Ac	45.39	107.1
Unknown Hydrocarbon	45.51	27.6
Unknown Hydrocarbon	45.59	23.8
Unknown	47.11	22.9
Unknown Hydrocarbon	53.03	18.5

NS = not spiked

j = detected below lowest calibration level

**APPCD Organic Support Laboratory**  
**Household Waste - Semivolatile Analysis**

Project:	Household Wastes	Date Acquired:	8/30/96
Sample Id:	Trash #2	Date Sampled:	9/1/95
Sample Name:	Trash Semivol #2	Date Extracted:	9/12/95
MS Data File:	STRASH2B	Dilution factor:	5x
Method:	SW846-Method 8270	Analyst:	Bill Preston
		QC reviewer:	Dennis Tabor

**Comment:**

Avid Recycler Test #2

**Presampling Surrogates**                    **Percent Recovery (%)**

d10-Anthracene	98.4
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**Post Sampling Surrogates**                    **Percent Recovery (%)**

2-Fluorophenol	68.5
d5-Phenol	95.2
d5-Nitrobenzene	94.4
2-Fluorobiphenyl	96.9
2,4,6-Tribromophenol	75.7
d14-Terphenyl	110.1

**Target Analytes**                            **Total µg**

n-Nitrosomethylmethamphetamine	ND
Methyl Methanesulfonate	ND
n-Nitrosodiethylamine	ND
Bis-(2-Chloroethyl) ether	ND
Ethyl Methanesulfonate	ND
Aniline	ND
Phenol	345.6
2-chlorophenol	4.3J
1,3-Dichlorobenzene	ND

**Target Analytes**

1,4-Dichlorobenzene	ND
1,2-Dichlorobenzene	1.4J
Benzyl Alcohol	6.6J

Bis (2-Chloroisopropyl) ether	ND
2-Methylphenol	70.9
n-Nitrosopyrrolidine	ND
Acetophenone	17.9J
Hexachloroethane	ND
4-Methylphenol	122.5
n-Nitrosodi-n-propylamine	ND
Nitrobenzene	ND
1-Nitrosopiperidine	ND
Isophorone	ND
2,4-Dimethylphenol	18.5J
Bis (2-chloroethoxy) methane	ND
2,4_Dichlorophenol	ND
1,2,4-Trichlorobenzene	ND
Naphthalene	229.0
2-Nitrophenol	ND
2,6-Dichlorophenol	ND
Hexachloropropene	ND
4-Chloroaniline	ND
Hexachlorobutadiene	ND
n-Nitrosodi-n-butylamine	ND
4-Chloro-3-methyl-phenol	ND
2-Methylnaphthalene	50.8
Isosafrole	ND
1,2,4,5 Tetrachlorobenzene	ND
Hexachlorobutadiene	ND
2,4,6-Trichlorophenol	ND
2,4,5-Trichlorophenol	ND
2-Choronaphthalene	ND
1,3 Dinitrobenzene	ND
2-Nitroaniline	ND
3-Nitroaniline	ND
Safrole	ND

## Target Analytes

Acenaphthylene	51.9
1,4-Naphthoquinone	3.4J
Dimethylphthalate	ND
2,6-Dinitrotoluene	ND
Acenaphthene	3.7J
1-Naphthylamine	ND
2-Naphthylamine	ND
4-Nitroaniline	ND
2,4-Dinitrophenol	ND
Dibenzofuran	12.7J

Pentachlorobenzene	ND
2,4-Dinitrophenol	ND
2,3,4,6-Tetrachlorophenol	ND
4-Nitrophenol	ND
Fluorene	19.7J
Diethyl phthalate	2.0J
4-Chlorophenyl phenyl ether	ND
2-Methyl-4,6-dinitrophenol	ND
5-Nitro-o-toluidine	ND
Diphenylamine	ND
Diallate	ND
1,3,5-Trinitrobenzene	ND
4-Bronophenyl phenyl ether	ND
Phenacetin	ND
Hexachlorobenzene	ND
4-Aminobiphenyl	ND
Dinoseb	ND
Pentachlorophenol	ND
Pentachloronitrobenzene	ND
Phenanthrene	51.2
Anthracene	11.1J
Di-n-butyl phthalate	9.0J
Isodrin	ND
Fluoranthene	9.6J
3,3'-Dimethylbenzidine	ND
Pyrene	8.5J
Chlorobenzilate	ND
p-Dimethylaminoazobenzene	ND
2-Acetylaminofluorene	ND
Benzyl butyl phthalate	3.3J

### Target Analytes

3,3'-Dichlorobenzidine	ND
Benzo (a) anthracene	1.8J
Chrysene	1.7J
di-n-octyl phthalate	ND
Benzo (b) fluoranthene	1.5J
7,12-Dimethylbenz (a) anthracene	ND
Benzo (k) fluoranthene	ND
Benzo (a) pyrene	ND
3-Methylcholanthrene	ND
Indeno (1,2,3-cd) pyrene	ND
Dibenz (a,h) anthracene	ND
Benzo (ghi) perylene	ND

Tentatively Identified Cmpds	ret time (min)	Total µg
Cyclotrisiloxane, hexamethyl-	6.51	66.7
Unknown	7.12	66.6

Unknown	7.36	101.4
Ethylbenzene	8.09	167.0
Unknown	8.37	73.8
Xylene isomer(s)	8.42	91.8
Phenylethyne	8.66	57.7
Styrene	9.20	292.1
Benzaldehyde	11.75	116.0
Unknown	12.41	130.4
Unknown Hydrocarbon	12.74	70.2
Indene	14.53	98.3
Unknown Hydrocarbon	16.08	58.0
Cyclopentasiloxane, decameth	17.39	126.2
Benzoic Acid	18.68	58.2
Naphthalene, 1-methyl-	22.77	64.5
Unknown	26.67	85.8
Unknown Substi Hexadioic Aci	45.37	170.1
Unknown Pthalate	50.43	67.1

NS = not spiked

j = detected below lowest calibration level

**APPCD Organic Support Laboratory**  
**Household Waste - Semivolatile Analysis**

Project:	Household Wastes	Date Acquired:	8/30/96
Sample Id:	Trash #3	Date Sampled:	9/6/95
Sample Name:	Trash Semivol #3	Date Extracted:	9/12/95
MS Data File:	STRASH3B	Dilution factor:	none
Method:	SW846-Method 8270	Analyst:	Bill Preston
		QC reviewer:	Dennis Tabor

**Comment:**

Hut Blank

**Presampling Surrogates**                    **Percent Recovery (%)**

d10-Anthracene	69.3
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**Post Sampling Surrogates**                    **Percent Recovery (%)**

2-Fluorophenol	7.5
d5-Phenol	12.6
d5-Nitrobenzene	11.1
2-Fluorobiphenyl	13.5
2,4,6-Tribromophenol	10.7
d14-Terphenyl	14.3

**Target Analytes**                            **Total µg**

n-Nitrosomethylmethamphetamine	ND
Methyl Methanesulfonate	ND
n-Nitrosodiethylamine	ND
Bis-(2-Chloroethyl) ether	ND
Ethyl Methanesulfonate	ND
Aniline	ND
Phenol	78.7
2-chlorophenol	ND
1,3-Dichlorobenzene	ND

**Target Analytes**                            **Total µg**

1,4-Dichlorobenzene	ND
1,2-Dichlorobenzene	ND
Benzyl Alcohol	1.9J

Bis (2-Chloroisopropyl) ether	ND
2-Methylphenol	ND
n-Nitrosopyrrolidine	ND
Acetophenone	ND
Hexachloroethane	ND
4-Methylphenol	ND
n-Nitrosodi-n-propylamine	ND
Nitrobenzene	ND
1-Nitrosopiperidine	ND
Isophorone	ND
2,4-Dimethylphenol	ND
Bis (2-chloroethoxy) methane	ND
2,4_Dichlorophenol	ND
1,2,4-Trichlorobenzene	ND
Naphthalene	1.0J
2-Nitrophenol	ND
2,6-Dichlorophenol	ND
Hexachloropropene	ND
4-Chloroaniline	ND
Hexachlorobutadiene	ND
n-Nitrosodi-n-butylamine	ND
4-Chloro-3-methyl-phenol	ND
2-MethylNaphthalene	ND
Isosafrole	ND
1,2,4,5 Tetrachlorobenzene	ND
Hexachlorobutadiene	ND
2,4,6-Trichlorophenol	ND
2,4,5-Trichlorophenol	ND
2-Choronaphthalene	ND
1,3 Dinitrobenzene	ND
2-Nitroaniline	ND
3-Nitroaniline	ND
Safrole	ND

## Target Analytes

Acenaphthylene	ND
1,4-Naphthoquinone	ND
Dimethylphthalate	ND
2,6-Dinitrotoluene	ND
Acenaphthene	ND
1-Naphthylamine	ND
2-Naphthylamine	ND
4-Nitroaniline	ND
2,4-Dinitrophenol	ND
Dibenzofuran	ND

Pentachlorobenzene	ND
2,4-Dinitrophenol	ND
2,3,4,6-Tetrachlorophenol	ND
4-Nitrophenol	ND
Fluorene	ND
Diethyl phthalate	3.6J
4-Chlorophenyl phenyl ether	ND
2-Methyl-4,6-dinitrophenol	ND
5-Nitro-o-toluidine	ND
Diphenylamine	ND
Diallate	ND
1,3,5-Trinitrobenzene	ND
4-Bronophenyl phenyl ether	ND
Phenacetin	ND
Hexachlorobenzene	ND
4-Aminobiphenyl	ND
Dinoseb	ND
Pentachlorophenol	ND
Pentachloronitrobenzene	ND
Phenanthrene	ND
Anthracene	ND
Di-n-butyl phthalate	2.8J
Isodrin	ND
Fluoranthene	ND
3,3'-Dimethylbenzidine	ND
Pyrene	ND
Chlorobenzilate	ND
p-Dimethylaminoazobenzene	ND
2-Acetylaminofluorene	ND
Benzyl butyl phthalate	1.5J

### Target Analytes

3,3'-Dichlorobenzidine	ND
Benzo (a) anthracene	ND
Chrysene	ND
di-n-octyl phthalate	ND
Benzo (b) fluoranthene	ND
7,12-Dimethylbenz (a) anthracene	ND
Benzo (k) fluoranthene	ND
Benzo (a) pyrene	ND
3-Methylcholanthrene	ND
Indeno (1,2,3-cd) pyrene	ND
Dibenz (a,h) anthracene	ND
Benzo (ghi) perylene	ND

Tentatively Identified Cmpd	ret time (min)	Total µg
Acetamide, N,N-dimethyl	8.29	35.1

Xylene isomer(s)	8.44	13.0
Unknown	12.41	21.5
Unknown Hydrocarbon	13.04	9.7
Unknown	17.11	15.9
Cyclopentasiloxane,decamethyl	17.39	23.0
Cyclopentasiloxane,decamethyl	22.29	22.1
Unknown Hydrocarbon	25.03	12.1
Unknown Siloxane	26.67	11.1
Unknown Hydrocarbon	27.58	12.6
Unknown substituted amide	37.88	20.7
Unknown substituted amide	41.39	14.0
Unknown substituted amide	41.77	24.2
Unknown	43.84	14.6
Unknown	44.82	15.4
Unknown substituted amide	44.99	202.5
Unknown substit- Hexanedioic	45.42	167.1
Unknown Phthalate	50.44	63.4
Unknown Phthalate	51.27	69.5
Unknown	51.82	25.5

NS = not spiked

j = detected below lowest calibration level

**APPCD Organic Support Laboratory**  
**Household Waste - Semivolatile Analysis**

Project:	Household Wastes	Date Acquired:	8/30/96
Sample Id:	Trash #4	Date Sampled:	9/12/95
Sample Name:	Trash Semivol #4	Date Extracted:	9/20/95
MS Data File:	STRASH4B	Dilution factor:	2X
Method:	SW846-Method 8270	Analyst:	Bill Preston
		QC reviewer:	Dennis Tabor

**Comment:**

Non Recycler Test #4

**Presampling Surrogates**                    **Percent Recovery (%)**

d10-Anthracene	80.48
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**Post Sampling Surrogates**                    **Percent Recovery (%)**

2-Fluorophenol	1.1
d5-Phenol	6.9
d5-Nitrobenzene	4.4
2-Fluorobiphenyl	9.4
2,4,6-Tribromophenol	12.5
d14-Terphenyl	17.0

**Target Analytes**                            **Total µg**

n-Nitrosomethylmethamphetamine	ND
Methyl Methanesulfonate	ND
n-Nitrosodiethylamine	ND
Bis-(2-Chloroethyl) ether	ND
Ethyl Methanesulfonate	ND
Aniline	ND
Phenol	120.0
2-chlorophenol	ND
1,3-Dichlorobenzene	ND

**Target Analytes**                            **Total µg**

1,4-Dichlorobenzene	ND
1,2-Dichlorobenzene	ND
Benzyl Alcohol	3.5J

Bis (2-Chloroisopropyl) ether	ND
2-Methylphenol	27.8
n-Nitrosopyrrolidine	ND
Acetophenone	2.8J
Hexachloroethane	ND
4-Methylphenol	47.5
n-Nitrosodi-n-propylamine	ND
Nitrobenzene	ND
1-Nitrosopiperidine	ND
Isophorone	ND
2,4-Dimethylphenol	14.0
Bis (2-chloroethoxy) methane	ND
2,4_Dichlorophenol	ND
1,2,4-Trichlorobenzene	ND
Naphthalene	30.0
2-Nitrophenol	ND
2,6-Dichlorophenol	ND
Hexachloropropene	ND
4-Chloroaniline	ND
Hexachlorobutadiene	ND
n-Nitrosodi-n-butylamine	ND
4-Chloro-3-methyl-phenol	ND
2-MethylNaphthalene	5.5J
Isosafrole	ND
1,2,4,5 Tetrachlorobenzene	ND
Hexachlorobutadiene	ND
2,4,6-Trichlorophenol	ND
2,4,5-Trichlorophenol	ND
2-Choronaphthalene	ND
1,3 Dinitrobenzene	ND
2-Nitroaniline	ND
3-Nitroaniline	ND
Safrole	ND

## Target Analytes

Acenaphthylene	22.7
1,4-Naphthoquinone	1.6J
Dimethylphthalate	ND
2,6-Dinitrotoluene	ND
Acenaphthene	1.2J
1-Naphthylamine	ND
2-Naphthylamine	ND
4-Nitroaniline	ND
2,4-Dinitrophenol	ND
Dibenzofuran	4.3J

Pentachlorobenzene	ND
2,4-Dinitrophenol	ND
2,3,4,6-Tetrachlorophenol	ND
4-Nitrophenol	ND
Fluorene	5.8J
Diethyl phthalate	2.9J
4-Chlorophenyl phenyl ether	ND
2-Methyl-4,6-dinitrophenol	ND
5-Nitro-o-toluidine	ND
Diphenylamine	ND
Diallate	ND
1,3,5-Trinitrobenzene	ND
4-Bronophenyl phenyl ether	ND
Phenacetin	ND
Hexachlorobenzene	ND
4-Aminobiphenyl	ND
Dinoseb	ND
Pentachlorophenol	ND
Pentachloronitrobenzene	ND
Phenanthrene	21.1
Anthracene	4.4J
Di-n-butyl phthalate	2.8J
Isodrin	ND
Fluoranthene	6.7J
3,3'-Dimethylbenzidine	ND
Pyrene	7.0J
Chlorobenzilate	ND
p-Dimethylaminoazobenzene	ND
2-Acetylaminofluorene	ND
Benzyl butyl phthalate	3.0J

### Target Analytes

3,3'-Dichlorobenzidine	ND
Benzo (a) anthracene	2.0J
Chrysene	2.5J
di-n-octyl phthalate	ND
Benzo (b) fluoranthene	2.5J
7,12-Dimethylbenz (a) anthracene	ND
Benzo (k) fluoranthene	ND
Benzo (a) pyrene	2.2J
3-Methylcholanthrene	ND
Indeno (1,2,3-cd) pyrene	1.5J
Dibenz (a,h) anthracene	ND
Benzo (ghi) perylene	1.6J

Tentatively Identified Cmpds	ret time (min)	Total µg
2-Furancarboxaldehyde,5meth	11.68	25.8
2Cyclopenten1one,2-hydroxy3	13.85	45.6

Unknown	16.18	57.6
Unknown	19.15	33.3
14:36-Dianhydro-alpha-d-gluc	19.97	44.4
Phenol, 4-ethyl-2-methoxy-	21.61	27.1
Butylated Hydroxytoluene	27.69	23.9
Unknown	27.96	45.9
Unknown	28.23	22.1
Unknown	28.68	39.6
Benzene, 1,1' -(1,3-propanedi	31.31	23.0
Hexadecanoic Acid	37.72	42.7
Oleic Acid	41.06	25.3
Unknown	44.93	179.4
Hexanedioic Acid,bis(2-ethylhe	45.38	215.3
Unknown	46.30	21.8
Unknown Pthalate	47.64	186.5
Unknown Pthalate	50.43	75.6
Unknown	51.81	38.5

NS = not spiked

j = detected below lowest calibration level

**APPCD Organic Support Laboratory****Household Waste - Semivolatile Analysis**

Project:	Household Wastes	Date Acquired:	8/30/96
Sample Id:	Trash #5	Date Sampled:	9/12/95
Sample Name:	Trash Semivol #5	Date Extracted:	9/20/95
MS Data File:	STRASH5B	Dilution factor:	2X
Method:	SW846-Method 8270	Analyst:	Bill Preston
		QC reviewer:	Dennis Tabor

**Comment:**

Non-Recycler Test #5

Presampling Surrogates	Percent Recovery (%)
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d10-Anthracene	96.5
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Post Sampling Surrogates	Percent Recovery (%)
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2-Fluorophenol	51.2
d5-Phenol	83.0
d5-Nitrobenzene	74.6
2-Fluorobiphenyl	80.9
2,4,6-Tribromophenol	72.1
d14-Terphenyl	92.4

Target Analytes	Total µg
-----------------	----------

n-Nitrosomethylmethamphetamine	ND
Methyl Methanesulfonate	ND
n-Nitrosodiethylamine	ND
Bis-(2-Chloroethyl) ether	ND
Ethyl Methanesulfonate	ND
Aniline	ND
Phenol	113.6
2-chlorophenol	1.7J
1,3-Dichlorobenzene	ND

<b>Target Analytes</b>	<b>Total µg</b>
1,4-Dichlorobenzene	ND
1,2-Dichlorobenzene	ND
Benzyl Alcohol	8.3J
Bis (2-Chloroisopropyl) ether	ND
2-Methylphenol	23.6
n-Nitrosopyrrolidine	ND
Acetophenone	8.8J
Hexachloroethane	ND
4-Methylphenol	76.8
n-Nitrosodi-n-propylamine	ND
Nitrobenzene	ND
1-Nitrosopiperidine	ND
Isophorone	41.1
2,4-Dimethylphenol	ND
Bis (2-chloroethoxy) methane	ND
2,4_Dichlorophenol	ND
1,2,4-Trichlorobenzene	ND
Naphthalene	77.3
2-Nitrophenol	ND
2,6-Dichlorophenol	ND
Hexachloropropene	ND
4-Chloroaniline	ND
Hexachlorobutadiene	ND
n-Nitrosodi-n-butylamine	ND
4-Chloro-3-methyl-phenol	ND
2-Methylnaphthalene	10.4J
Isosafrole	ND
1,2,4,5 Tetrachlorobenzene	ND
Hexachlorobutadiene	ND
2,4,6-Trichlorophenol	ND
2,4,5-Trichlorophenol	ND
2-Choronaphthalene	ND
1,3 Dinitrobenzene	ND
2-Nitroaniline	ND
3-Nitroaniline	ND
Safrole	ND

## Target Analytes

Acenaphthylene	20.4
1,4-Naphthoquinone	1.2J
Dimethylphthalate	ND
2,6-Dinitrotoluene	ND
Acenaphthene	1.1J
1-Naphthylamine	ND
2-Naphthylamine	ND
4-Nitroaniline	ND
2,4-Dinitrophenol	ND
Dibenzofuran	3.8J
Pentachlorobenzene	ND
2,4-Dinitrophenol	ND
2,3,4,6-Tetrachlorophenol	ND
4-Nitrophenol	ND
Fluorene	5.1J
Diethyl phthalate	2.0J
4-Chlorophenyl phenyl ether	ND
2-Methyl-4,6-dinitrophenol	ND
5-Nitro-o-toluidine	ND
Diphenylamine	ND
Diallate	ND
1,3,5-Trinitrobenzene	ND
4-Bronophenyl phenyl ether	ND
Phenacetin	ND
Hexachlorobenzene	ND
4-Aminobiphenyl	ND
Dinoseb	ND
Pentachlorophenol	ND
Pentachloronitrobenzene	ND
Phenanthrene	16.8J
Anthracene	3.4J
Di-n-butyl phthalate	17.0J
Isodrin	ND
Fluoranthene	4.9J
3,3'-Dimethylbenzidine	ND
Pyrene	5.4J
Chlorobenzilate	ND
p-Dimethylaminoazobenzene	ND
2-Acetylaminofluorene	ND
Benzyl butyl phthalate	4.2J

## Target Analytes

3,3'-Dichlorobenzidine	ND
Benzo (a) anthracene	1.5J
Chrysene	1.8J
di-n-octyl phthalate	ND
Benzo (b) fluoranthene	1.5J
7,12-Dimethylbenz (a) anthracene	ND
Benzo (k) fluoranthene	ND
Benzo (a) pyrene	1.3J
3-Methylcholanthrene	ND
Indeno (1,2,3-cd) pyrene	ND
Dibenz (a,h) anthracene	ND
Benzo (ghi) perylene	ND

Tentatively Identified Cmpd	ret time (min)	Total µg
Unknown	7.14	183.9
Unknown	8.36	87.3
2-Cyclopenten-1-one, 2-meth	9.64	57.8
2-Furancarboxaldehyde,5-me	11.70	69.4
Unknown	11.80	55.5
2Cyclopenten-1-one,2hydroxy	13.92	95.1
Unknown	16.22	65.5
Phenol,2-methoxy-4-methyl	19.17	72.7
Phenol, 4-ethyl-2-methoxy-	21.62	63.3
Hexadecanoic Acid,bis(2ethyl	45.36	57.6
Unknown Pthalate	50.35	70.7
Unknown Pthalate	50.44	110.7
Unknown Pthalate	50.81	55.5
Unknown Pthalate	50.91	58.0
Unknown Pthalate	51.19	55.5
Unknown Pthalate	51.81	53.1
Unknown Pthalate	51.92	70.1
Unknown Pthalate	52.29	56.5

NS = not spiked

j = detected below lowest calibration level

**APPCD Organic Support Laboratory****Household Waste - Semivolatile Analysis**

Project:	Household Wastes	Date Acquired:	8/30/96
Sample Id:	Trash #6	Date Sampled:	9/12/95
Sample Name:	Trash Semivol #6	Date Extracted:	9/20/95
MS Data File:	STRASH6B	Dilution factor:	none
Method:	SW846-Method 8270	Analyst:	Bill Preston
		QC reviewer:	Dennis Tabor

**Comment:**

Field Blank

**Presampling Surrogates**                   **Percent Recovery (%)**

d10-Anthracene	96.4
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**Post Sampling Surrogates**                   **Percent Recovery (%)**

2-Fluorophenol	54.7
d5-Phenol	76.8
d5-Nitrobenzene	83.6
2-Fluorobiphenyl	83.5
2,4,6-Tribromophenol	70.2
d14-Terphenyl	94.0

**Target Analytes**                   **Total µg**

n-Nitrosomethylmethamphetamine	ND
Methyl Methanesulfonate	ND
n-Nitrosodiethylamine	ND
Bis-(2-Chloroethyl) ether	ND
Ethyl Methanesulfonate	ND
Aniline	ND
Phenol	10.2
2-chlorophenol	ND
1,3-Dichlorobenzene	ND

<b>Target Analytes</b>	<b>Total µg</b>
1,4-Dichlorobenzene	ND
1,2-Dichlorobenzene	ND
Benzyl Alcohol	2.3J
Bis (2-Chloroisopropyl) ether	ND
2-Methylphenol	ND
n-Nitrosopyrrolidine	ND
Acetophenone	ND
Hexachloroethane	ND
4-Methylphenol	ND
n-Nitrosodi-n-propylamine	ND
Nitrobenzene	ND
1-Nitrosopiperidine	ND
Isophorone	ND
2,4-Dimethylphenol	ND
Bis (2-chloroethoxy) methane	ND
2,4_Dichlorophenol	ND
1,2,4-Trichlorobenzene	ND
Naphthalene	ND
2-Nitrophenol	ND
2,6-Dichlorophenol	ND
Hexachloropropene	ND
4-Chloroaniline	ND
Hexachlorobutadiene	ND
n-Nitrosodi-n-butylamine	ND
4-Chloro-3-methyl-phenol	ND
2-Methylnapthalene	ND
Isosafrole	ND
1,2,4,5 Tetrachlorobenzene	ND
Hexachlorobutadiene	ND
2,4,6-Trichlorophenol	ND
2,4,5-Trichlorophenol	ND
2-Choronaphthalene	ND
1,3 Dinitrobenzene	ND
2-Nitroaniline	ND
3-Nitroaniline	ND
Safrole	ND

## Target Analytes

Acenaphthylene	ND
1,4-Naphthoquinone	ND
Dimethylphthalate	ND
2,6-Dinitrotoluene	ND
Acenaphthene	ND
1-Naphthylamine	ND
2-Naphthylamine	ND
4-Nitroaniline	ND
2,4-Dinitrophenol	ND
Dibenzofuran	ND
Pentachlorobenzene	ND
2,4-Dinitrophenol	ND
2,3,4,6-Tetrachlorophenol	ND
4-Nitrophenol	ND
Fluorene	ND
Diethyl phthalate	1.3J
4-Chlorophenyl phenyl ether	ND
2-Methyl-4,6-dinitrophenol	ND
5-Nitro-o-toluidine	ND
Diphenylamine	ND
Diallate	ND
1,3,5-Trinitrobenzene	ND
4-Bronophenyl phenyl ether	ND
Phenacetin	ND
Hexachlorobenzene	ND
4-Aminobiphenyl	ND
Dinoseb	ND
Pentachlorophenol	ND
Pentachloronitrobenzene	ND
Phenanthrene	ND
Anthracene	ND
Di-n-butyl phthalate	3.1J
Isodrin	ND
Fluoranthene	ND
3,3'-Dimethylbenzidine	ND
Pyrene	ND
Chlorobenzilate	ND
p-Dimethylaminoazobenzene	ND
2-Acetylaminofluorene	ND
Benzyl butyl phthalate	2.8J

## Target Analytes

3,3'-Dichlorobenzidine	ND
Benzo (a) anthracene	ND
Chrysene	ND
di-n-octyl phthalate	ND
Benzo (b) fluoranthene	ND
7,12-Dimethylbenz (a) anthracene	ND
Benzo (k) fluoranthene	ND
Benzo (a) pyrene	ND
3-Methylcholanthrene	ND
Indeno (1,2,3-cd) pyrene	ND
Dibenz (a,h) anthracene	ND
Benzo (ghi) perylene	ND

## Tentatively Identified Cmpc ret time (min) Total µg

Ethyl benzene	8.14	7.9
Xylene isomer(s)	8.45	8.6
Benzaldehyde	11.77	14.1
Cyclotetrasiloxane, octameth	12.41	13.0
Hexanoic acid, 2-ethyl -	17.12	17.9
Unknown Hydrocarbon	25.03	7.9
2,5 -Cyclohexadiene-1,4dion	26.67	8.8
Unknown Hydrocarbon	27.59	8.0
Butylated Hydroxytoluene	27.68	21.2
Phenol, 2,6-bis (1,1-dimethyl	33.58	11.8
Phosphonic acid, dioctadecyl	43.84	7.6
Unknown subst. Hexanedioic	45.39	129.9
(Carbethoxyethylidine) triphe	47.57	40.5
Unknown Phthalate	47.64	63.7
Unknown Phthalate	49.82	11.2
Unknown Phthalate	50.11	9.4
Unknown Phthalate	50.34	10.5
Unknown Phthalate	50.44	203.4
Unknown Phthalate	51.82	31.0

NS = not spiked

j = detected below lowest calibration level

## ALDEHYDES AND KETONES

PQL = Practical Quantitation Limit

N/D = Not Detected

J = Detected @< PQL

N/A = Not Applicable

DL = Diluted Result

NR = Not Required

E = Estimated value

Test#	1	2	3	4	5
	Avid	Avid	Hut	Non	Non
	Recycler	Recycler	Blank	Recycler	Recycler
Sample ID	#4	#5	#6	#7	#8
Analysis Date	09/09/95	09/09/95	09/09/95	09/09/95	5\2\96
	µg	µg	µg	µg	µg
formaldehyde	2.6	0.75	<0.25	29.5	13.2
acetaldehyde	1.83	0.53	<0.25	27.8	13.9
acrolein	<0.25	<0.25	<0.25	2.56	<0.25
acetone	4.11	2.95	3.38	14.9	7.57
propionaldehyde	0.63	<0.25	<0.25	7.63	3.28
crotonaldehyde	<0.25	<0.25	<0.25	3.22	<0.25
butyraldehyde	0.43	<0.25	<0.25	<0.25	<0.25
benzaldehyde	2.06	0.38	<0.25	8.41	5.85
isovaleraldehyde	<0.25	<0.25	<0.25	0.98	<0.25
valeraldehyde	<0.25	<0.25	<0.25	<0.25	<0.25
o-tolualdehyde	<0.25	<0.25	<0.25	<0.25	<0.25
m-tolualdehyde	<0.25	<0.25	<0.25	<0.25	<0.25
p-tolualdehyde	1.4	<0.25	<0.25	<0.25	<0.25
hexaldehyde	<0.25	<0.25	<0.25	<0.25	<0.25
2,4-dimethylbenzaldehyde	<0.25	<0.25	<0.25	<0.25	<0.25

### ESTIMATED EMISSIONS OF ALDEHYDES AND KETONE (g/Kg)

Test#	1	2	3	4	5
	Avid	Avid	Hut	Non	Non
	Recycler	Recycler	Blank	Recycler	Recycler
formaldehyde	0.0434	0.0112	NA	1.229	0.491
acetaldehyde	0.0305	0.0079	NA	1.1581	0.5171
acrolein	<0.0042	<0.0037	NA	0.1066	<0.0093
acetone	0.0686	0.0441	NA	0.6207	0.2816
propionaldehyde	0.0105	<0.0037	NA	0.3179	0.122
crotonaldehyde	<0.0042	<0.0037	NA	0.1341	<0.0093
butyraldehyde	0.0072	<0.0037	NA	<0.0104	<0.0093
benzaldehyde	0.0344	0.0057	NA	0.3504	0.2176
isovaleraldehyde	<0.0042	<0.0037	NA	0.0408	<0.0093
valeraldehyde	<0.0042	<0.0037	NA	<0.0104	<0.0093
o-tolualdehyde	<0.0042	<0.0037	NA	<0.0104	<0.0093
m-tolualdehyde	<0.0042	<0.0037	NA	<0.0104	<0.0093
p-tolualdehyde	0.0234	<0.0037	NA	<0.0104	<0.0093
hexaldehyde	<0.0042	<0.0037	NA	<0.0104	<0.0093
2,4-dimethylbenzaldehyde	<0.0042	<0.0037	NA	<0.0104	<0.0093

ESTIMATED HCl EMISSIONS (g/Kg)							
HCl data							
Test No.	Test Conditions	DATE	ug HCl	Mass burnned	Vm,std	HCl conc.	Estimated
							mg/M3 g/kg
1	Avid Recycler	8/30/95	550	8.1	2.426	8.006	3.281
2	Avid Recycler	9/1/95	260	8.8	2.512	3.655	1.508
3	Hut Blank	9/6/95	4.7	0	2.615	0.063	NA
4	Non Recycler	9/8/95	22	2.6	1.691	0.459	0.4814
5	Non Recycler	9/12/95	6.3	3.9	2.7	0.082	0.08636

ESTIMATED HCN EMISSIONS (g/Kg)							
HCN data							
Test No.	Test Conditions	DATE	ug HCN	Mass burnned	Vm,std	HCN conc.	Estimated
							mg/M3 g/kg
1	Avid Recycler	8/30/95	33.7125	8.1	2.0483	0.5812	0.2382
2	Avid Recycler	9/1/95	24.7953	8.8	2.2362	0.3915	0.1615
3	Hut Blank	9/6/95	-0.6284	0	2.5447	-0.0087	na
4	Non Recycler	9/8/95	32.8109	2.6	1.6688	0.6943	0.7277
5	Non Recycler	9/12/95	14.9944	3.9	2.6648	0.1987	0.2083

PARTICULATE DATA									
Test No.	Test Cond	DATE	RUN #	coarse rot	total rot	initial Pa	initial T	coarse rot	Tot rot
				initial	initial	IN Hg	deg. C	final	final
1	Avid Recy	8/30/95	1	7	23	29.68	35	7	23
2	Avid Recy	9/1/95	2	7	23	29.36	31.7	7	23
3	Hut Blank	9/6/95	3	7	23	29.69	30	7	23
4	Non Recyc	9/8/95	4	7	23	29.47	26.1	7	23
5	Non Recyc	9/12/95	5	7	23	29.82	25	7	23
Test No.	IN Hg	deg. C	in Hg	final Pa	final T	Seas avg	Seas avg	coarse	Tare Wt
				IN Hg	deg. C	in Hg	deg. C	filter #	Final Wt
1	29.68	35.2	29.68	35.1	4	0	3.62	3	0
2	29.36	31.7	29.36	31.7	6	0	3.01	5	0
3	29.69	29.4	29.69	29.7	7	0	0.03	8	0
4	29.47	28.9	29.47	27.5	10	0	3.15	9	0
5	29.82	28.9	29.82	26.95	12	0	4.25	11	0
Test No.	mg	minutes	coarse m	Final Wt	Run Time	equation	equation	equation	initial Pa
				mg	minutes	coarse b	coarse b	total m	mm Hg
1	16.99	77	2.3675	0.10647	1.13214	-3.8465	753.872	308	753.872
2	9.57	79	2.3675	0.10647	1.13214	-3.8465	745.744	304.7	745.744
3	0.05	90	2.3675	0.10647	1.13214	-3.8465	754.126	303	754.126
4	16.21	60	2.3675	0.10647	1.13214	-3.8465	748.538	299.1	748.538
5	18.08	90	2.3675	0.10647	1.13214	-3.8465	757.428	298	757.428
Test No.	K	mm Hg	K	final T	Seas avg	Seas avg	SAMPLER		initial
				ID	DATE	RUN #	coarse Qa	coarse Qa	final
1	308.2	753.872	308.1	1	30-Aug-95	1	1.84	1.84	1.84
2	304.7	745.744	304.7	2	1-Sep-95	2	1.84	1.84	1.84
3	302.4	754.126	302.7	3	6-Sep-95	3	1.83	1.83	1.83
4	301.9	748.538	300.5	4	8-Sep-95	4	1.82	1.82	1.82
5	301.9	757.428	299.95	5	12-Sep-95	5	1.81	1.81	1.81
Test No.	Qstd	total Qa	total Qa	coarse	initial	final	total	total	fine
				Qstd	total Qa	Qavg	Qstd	Qavg	fine
1	1.77	16.38	16.39	16.39	15.72	14.54	13.95	1.074	16990
2	1.77	16.38	16.38	16.38	15.72	14.54	13.95	1.102	9570
3	1.79	16.27	16.26	16.27	15.89	14.44	14.11	1.269	50
4	1.78	16.24	16.3	16.27	15.89	14.45	14.11	0.847	16210
5	1.79	16.14	16.22	16.18	16.02	14.37	14.23	1.281	18080
Test No.	Concentra	coarse	coarse(2.5	total(PM-1	total(PM-1	Concentra	Concentra	Estimated	Estimated
						PM 2.5	PM 10	Emis. PM 2.5	Emis. PM 10
1	1.581e+4	3620	1209.67	1.21	17027	15.82	17.03	6.93	7.46
2	8682.579	3010	1445.58	1.242	10128	8.68	10.13	3.58	4.18
3	39.386	30	16.55	1.43	56	0.04	0.06	N/A	N/A
4	1.914e+4	3150	1157.02	0.953	20305	19.15	20.31	20.07	21.28
5	1.411e+4	4250	1368.62	1.442	15485	14.12	15.49	14.8	16.23

## APPENDIX G. WCL&R RAW ANALYTICAL DATA

### CHLOROBENZENES(SIM)

CHLOROBENZENES(SIM)									
Raw Data									
		Run 1			Run 2				
		Avid			Avid				
		Recycler			Recycler				
RunName:		S1109J			S1109H				
Acc.Num.:	9582042	detection	%		9582043	detection	%		
Units:		pig	limit	recovery		pig	limit	recovery	
1,3	Dichlorobenzene	4091.515	522.697	80.99012		68961.05	459.3976	92.14957	
1,4	Dichlorobenzene	1714.85	356.6881	80.99012		25897.91	313.4927	92.14957	
1,2	Dichlorobenzene	13055.74	390.2794	80.99012		94790.55	343.016	92.14957	
1,3,5	Trichlorobenzene	522.4778	286.9338	72.70316		8395.963	253.0192	82.44824	
1,2,4	Trichlorobenzene	8675.252	397.7631	72.70316		72540.66	350.7488	82.44824	
1,2,3	Trichlorobenzene	12209.78	299.52	72.70316		86094.88	264.1177	82.44824	
1,2,3,5	Tetrachlorobenzene	2724.627	206.6413	84.59205		22182.83	183.4277	95.29755	
1,2,4,5	Tetrachlorobenzene	2795.489	146.0564	84.59205		11588.96	129.6487	95.29755	
1,2,3,4	Tetrachlorobenzene	10052.11	176.3292	84.59205		45910.47	156.5208	95.29755	
1,2,3,4,5	Pentachlorobenzene	9489.454	151.5241	85.66898		45681.51	134.7458	96.33631	
1,2,3,4,5,6	Hexachlorobenzene	8837.573	179.5857	77.47478		17595.26	160.111	86.8982	
TOT	Dichlorobenzene	16438.94	356.6881	80.99012		159588.8	313.4927	92.14957	
TOT	Trichlorobenzene	25614.15	397.7631	72.70316		198513.8	350.7488	82.44824	
TOT	Tetrachlorobenzene	13047.61	146.0564	84.59205		65296.43	129.6487	95.29755	
TOT	Pentachlorobenzene	9489.454	151.5241	85.66898		45681.51	134.7458	96.33631	
TOT	Hexachlorobenzene	8837.573	179.5857	77.47478		17595.26	160.111	86.8982	
Data Corrected by Dilution Factor (DF=10)									
		Run 1			Run 2				
		Avid			Avid				
		Recycler			Recycler				
RunName:		S1109J			S1109H				
Acc.Num.:	9582042	detection	%		9582043	detection	%		
Units:		pig	limit	recovery		pig	limit	recovery	
1,3	Dichlorobenzene	40915.15	5226.97			689610.5	4593.976		
1,4	Dichlorobenzene	17148.5	3566.881			258979.1	3134.927		
1,2	Dichlorobenzene	130557.4	3902.794			947905.5	3430.16		
1,3,5	Trichlorobenzene	5224.778	2869.338			83959.63	2530.192		
1,2,4	Trichlorobenzene	86752.52	3977.631			725406.6	3507.488		
1,2,3	Trichlorobenzene	122097.8	2995.2			860948.8	2641.177		
1,2,3,5	Tetrachlorobenzene	27246.27	2066.413			221828.3	1834.277		
1,2,4,5	Tetrachlorobenzene	27954.89	1460.564			115889.6	1296.487		
1,2,3,4	Tetrachlorobenzene	100521.1	1763.292			459104.7	1565.208		
1,2,3,4,5	Pentachlorobenzene	94894.54	1515.241			456815.1	1347.458		
1,2,3,4,5,6	Hexachlorobenzene	88375.73	1795.857			175952.6	1601.11		
TOT	Dichlorobenzene	164389.4	3566.881			1595888	3134.927		
TOT	Trichlorobenzene	256141.5	3977.631			1985138	3507.488		
TOT	Tetrachlorobenzene	130476.1	1460.564			652964.3	1296.487		
TOT	Pentachlorobenzene	94894.54	1515.241			456815.1	1347.458		
TOT	Hexachlorobenzene	88375.73	1795.857			175952.6	1601.11		
NYS-DOH Analyses									
SIM Chlorobenzenes Estimated Emissions mg/Kg									
(taken from #'s corrected for dilution factor)									
		Run 1	Run 2	Run 3	Run 4	Run 5			from semi-v
		Avid	Avid	Hut	Non	Non	Field		
		Recycler	Recycler	Blank	Recycler	Recycler	Blank		Test #
RunName:		S1109J	S1109H	S1109F	S1109I	S1109G	S1109E		1
Acc.Num.:	9582042	9582043	9582044	9582045	9582045	9582046	9582047		2
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		3
1,3	Dichlorobenzene	0.016	0.2448	n/a	0.0076	0.0596	n/a		4
1,4	Dichlorobenzene	0.0067	0.0919	n/a	0.0032	0.0313	n/a		5
1,2	Dichlorobenzene	0.051	0.3365	n/a	0.1074	0.1616	n/a		
1,3,5	Trichlorobenzene	0.002	0.0298	n/a	<0.0077	0.0042	n/a		
1,2,4	Trichlorobenzene	0.0339	0.2575	n/a	0.0468	0.0519	n/a		
1,2,3	Trichlorobenzene	0.0477	0.3057	n/a	0.0457	0.0452	n/a		
1,2,3,5	Tetrachlorobenzene	0.0107	0.0788	n/a	0.0197	0.0117	n/a		
1,2,4,5	Tetrachlorobenzene	0.0109	0.0411	n/a	0.0277	0.0121	n/a		
1,2,3,4	Tetrachlorobenzene	0.0393	0.163	n/a	0.0686	0.0342	n/a		
1,2,3,4,5	Pentachlorobenzene	0.0371	0.1622	n/a	0.0727	0.0331	n/a		
1,2,3,4,5,6	Hexachlorobenzene	0.0345	0.0625	n/a	0.0309	0.0131	n/a		
TOT	Dichlorobenzene	0.0643	0.5666	n/a	0.1065	0.2196	n/a		
TOT	Trichlorobenzene	0.1001	0.7048	n/a	0.1074	0.1178	n/a		
TOT	Tetrachlorobenzene	0.051	0.2318	n/a	0.0985	0.0487	n/a		
TOT	Pentachlorobenzene	0.0371	0.1622	n/a	0.0727	0.0331	n/a		
TOT	Hexachlorobenzene	0.0345	0.0625	n/a	0.0309	0.0131	n/a		

## CHLOROBENZENES(SIM)

Semi-Volatile Data from State of NY									
Open Burn Project: Household Waste					From				
Target Compounds based on 1 mL of concentrated extract					State of NY				
Test#	1	2	3	4	5	Estimated	1	2	3
	Avid	Avid	Hut	Non	Non	Method	Avid	Avid	Non
Recycler	Recycler	Blank	Recycler	Recycler	Recycler	Dilution	Recycler	Recycler	Recycler
Sample ID	9582042	9582043	9582044	9582045	9582046	Limit	9582042	9582043	9582044
Compound	ug/mL	ug/mL	ug/mL	ug/mL	ug/mL	ug	ug	ug	ug
1,4-Dichlorobenzene-d4	20,0000	20,0000	20,0000	20,0000	20,0000				
Naphthalene-d9	20,0000	20,0000	20,0000	20,0000	20,0000				
Acenaphthene-d10	20,0000	20,0000	20,0000	20,0000	20,0000				
Phenanthrene-d10	20,0000	20,0000	20,0000	20,0000	20,0000				
Chrysene-d12	20,0000	20,0000	20,0000	20,0000	20,0000				
Perylene-d12	20,0000	20,0000	20,0000	20,0000	20,0000				
2-Fluorophenol	26,7277	99,0462	16,3926	2,3746	72,1842	200.00	2-Fluorophenol	13.36	49.52
Phenol-d5	83,8489	144,5235	24,3492	13,5798	116,8968	200.00	Phenol-d5	41.92	72.27
Nitrobenzene-d5	33,2986	91,6981	10,7087	10,6336	64,5802	100.00	Nitrobenzene-d5	33.30	91.70
2-Fluorobiphenyl	60,9269	70,4072	12,4074	9,7996	57,1754	100.00	2-Fluorobiphenyl	60.93	70.41
2,4,6-Tribromophenol	204,2365	178,9856	28,8261	36,0669	166,4324	200.00	2,4,6-Tribromophenol	102.12	89.49
Terphenyl-d14	151,0016	145,4663	17,4938	21,4648	106,4828	100.00	Terphenyl-d14	151.00	145.47
Anthracene-d10	129,4000	107,5000	142,3000	123,8000	110,6000	200.00	Anthracene-d10	64.70	53.75
Pyridine	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.00	0.00
N-Nitrosodimethylamine	0.0000	0.0000	0.0000	0.0000	0.0000	7.17	<7.17	<7.17	<7.17
2-Picoline	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.00	0.00
N-Nitrosomethylimidamine	0.0000	0.0000	0.0000	0.0000	0.0000	7.23	<7.23	<7.23	<7.23
Methyl methanesulfonate	0.0000	0.0000	0.0000	0.0000	0.0000	6.64	<6.64	<6.64	<6.64
N-Nitrosodiethylamine	0.0000	0.0000	0.0000	0.0000	0.0000	7.28	<7.28	<7.28	<7.28
Ethyl methanesulfonate	0.0000	0.0000	0.0000	0.0000	0.0000	6.55	<6.55	<6.55	<6.55
Aniline	0.0000	0.0000	0.0000	0.0000	0.0000	6.55	<6.55	<6.55	<6.55
Phenol	117,6674	386,4342	111,9110	165,3744	116,7774	7.51	117,67	386,43	111,91
bis(2-Chloroethyl)ether	0.0000	0.0000	0.0000	0.0000	0.0000	7.44	<7.44	<7.44	<7.44
2-Chlorophenol	1,2079	4,1012	0.0000	6,6692	1,6640	7.19	1,2079J	4,1012J	7.19
1,3-Dichlorobenzene	0.0496	0.7620	0.0000	0.0000	0.0000	2.91	0.0496J	0.762J	<2.91
1,4-Dichlorobenzene	0.0349	0.4344	0.0286	0.0000	0.0423	3.17	0.0343J	0.4344J	0.0286J
1,2-Dichlorobenzene	0.1589	1,3592	0.1179	0.0540	0.1765	3.20	0.1589J	1,3592J	0.1179J
Benzyl alcohol	1,8505	5,8344	1,7877	6,8248	11,5099	10.40	1,8505J	5,8344J	1,7877J
2,2'-Oxybis(1-Chloropropane)	0.0000	0.0000	0.0000	0.0000	0.0000	6.38	<6.38	<6.38	<6.38
2-Methylphenol	12,6200	63,4859	1,0771	33,2521	46,5338	6.55	12,62	63,49	1,0771J
Acetophenone	3,6276	17,7997	0.3810	3,2010	6,8051	7.17	3,6276J	17.80	0.381J
N-Nitrosopyrrolidine	0.0000	0.0000	0.0000	0.0000	0.0000	8.04	<8.04	<8.04	<8.04
N-Nitrosomorpholine	0.0000	0.0000	0.0000	0.0000	0.0000	7.49	<7.49	<7.49	<7.49
o-Toluidine	0.0000	0.0000	0.0000	0.0000	0.0000	5.09	<5.09	<5.09	<5.09
Hexachloroethane	0.0000	0.0000	0.0000	0.0000	0.0000	2.27	<2.27	<2.27	<2.27
N-Nitrosodi-n-propylamine	0.0000	0.0000	0.0000	0.0000	0.0000	7.85	<7.85	<7.85	<7.85
3- or 4-Methylphenol	24,1866	110,7802	0.9615	53,5580	63,3458	6.02	24,19	110,78	0.9615J
Nitrobenzene	0.0000	0.0000	0.0000	0.0000	0.0000	6.74	<6.74	<6.74	<6.74
N-Nitrosopiperidine	0.0000	0.0000	0.0000	0.0000	0.0000	6.51	<6.51	<6.51	<6.51
Isophorone	0.0000	0.0000	0.0000	0.0000	0.0000	6.58	<6.58	<6.58	<6.58
2-Nitrophenol	0.0000	0.0000	0.0000	0.0000	0.0000	6.76	<6.76	<6.76	<6.76
2,4-Dimethylphenol	9,8926	30,8647	0.0000	41,0315	52,5559	6.03	9,89	30,86	0.003
2-Chloro-4-methylphenoxyacetate	0.0000	0.0000	0.0000	0.0000	0.0000	5.26	<5.26	<5.26	<5.26
bis(2-Chloroethyl)methane	0.0000	0.0000	0.0000	0.0000	0.0000	6.50	<6.5	<6.5	<6.5
Dimethylphenylmethanimine	0.0000	0.0000	0.0000	0.0000	0.0000	0.85	<0.85	<0.85	<0.85
2,4-Dichlorophenol	0.0000	1,5533	0.0000	0.3225	0.0000	6.82	<6.82	1,5533J	<6.82
1,2,4-Trichlorobenzene	0.0000	0.9140	0.0000	0.0342	0.0000	2.15	<2.15	0.914J	<2.15
Naphthalene	32,7042	151,6709	0.7098	29,7230	52,0067	3.38	32,70	151,67	0.7099J
4-Chloroaniline	0.0000	0.0000	0.0000	0.0000	0.0000	5.22	<5.22	<5.22	<5.22
2,6-Dichlorophenol	0.0000	0.4976	0.0000	0.0000	0.0000	7.04	<7.04	0.4976J	<7.04
Hexachloropropene	0.0000	0.0000	0.0000	0.0000	0.0000	1.46	<1.46	<1.46	<1.46
Hexachlorobutadiene	0.0000	0.0000	0.0000	0.0000	0.0000	1.61	<1.61	<1.61	<1.61
1,4-Phenenediamine	0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.00	0.00
N-Nitroso-di-butylamine	0.0000	0.0000	0.0000	0.0000	0.0000	6.35	<6.35	<6.35	<6.35
4-Chloro-3-methylphenol	0.0000	0.0000	0.0000	0.0000	0.0000	7.15	<7.15	<7.15	<7.15
Safrole	0.0000	0.0000	0.0000	0.0000	0.0000	3.62	<3.62	<3.62	<3.62
2-Methylnaphthalene	5,0713	46,1540	0.4048	5,5025	6,8528	2.94	5.07	46,15	0.4048J
1,2,4,5-Tetrachlorobenzene	0.0901	0.4987	0.0000	0.0517	0.0000	2.89	0.0901J	0.4987J	<2.89
Hexachlorocyclopentadiene	0.0000	0.0000	0.0000	0.0000	0.0000	2.26	<2.26	<2.26	<2.26
cis-Isoasfole	0.0000	0.0000	0.0000	0.0000	0.0000	4.45	<4.45	<4.45	<4.45
2,4,6-Trichlorophenol	0.7175	1,3524	0.0000	0.0000	0.0000	6.57	0.7175J	1,3524J	<6.57
2,4,5-Trichlorophenol	0.0000	0.0000	0.0000	0.0000	0.0000	7.35	<7.35	<7.35	<7.35
trans-Isoasfole	0.0000	0.0000	0.0000	0.0000	0.0000	3.38	<3.38	<3.38	<3.38
2-Chloronaphthalene	0.0000	0.0000	0.0000	0.0000	0.0000	3.43	<3.43	<3.43	<3.43
2-Nitrobenzene	0.0000	0.0000	0.0000	0.0000	0.0000	6.56	<6.56	<6.56	<6.56
1,4-Naphthoquinone	0.0000	0.0000	0.0000	0.0000	0.0000	9.87	<9.87	<9.87	<9.87
1,3-Dinitrobenzene	0.0000	0.0000	0.0000	0.0000	0.0000	6.27	<6.27	<6.27	<6.27
Dimethylphthalate	0.0000	0.0000	0.0000	0.0000	0.0000	6.53	<6.53	<6.53	<6.53
Acenaphthylene	11,5636	34,7210	0.0945	21,2562	12,4391	3.79	11,56	34,72	0.0945J
2,6-Dinitrotoluene	0.0000	0.0000	0.0000	0.0000	0.0000	6.21	<6.21	<6.21	<6.21
1-Naphthylamine	0.0000	0.0000	0.0000	0.0000	0.0000	3.25	<3.25	<3.25	<3.25
2-Naphthylamine	0.0000	0.0000	0.0000	0.0000	0.0000	3.20	<3.2	<3.2	<3.2
2,3,4,6-Tetrachlorophenol	0.0000	0.0000	0.0000	0.0000	0.0000	6.59	<6.59	<6.59	<6.59
Fluorene	3,0264	12,3976	0.1157	5,8660	3,4486	4.11	3,0264J	12,40	0.1157J
Diethylphthalate	0.0000	0.9648	2,6214	2,9346	1,5881	6.96	0.9648J	2,6214J	2,9346J
4-Chlorophenyl-phenylether	0.0000	0.0000	0.0000	0.0000	0.0000	3.70	<3.7	<3.7	<3.7
Thioanizole	0.0000	0.0000	0.0000	0.0000	0.0000	6.05	<6.05	<6.05	<6.05
5-Nitro-2-toluidine	0.0000	0.0000	0.0000	0.0000	0.0000	6.04	<6.04	<6.04	<6.04
4,6-Dinitro-2-methylphenol	0.0000	0.0000	0.0000	0.0000	0.0000	6.39	<6.39	<6.39	<6.39
Dichenylamine	0.0000	0.0000	0.0000	0.0000	0.0000	5.85	<5.85	<5.85	<5.85
N-Nitrosodiphenylamine	0.0000	0.0000	0.0000	0.0000	0.0000	5.83	<5.83	<5.83	<5.83
Sulforaphane	0.0000	0.0000	0.0000	0.0000	0.0000	5.37	<5.37	<5.37	<5.37
Diellate-A	0.0000	0.0000	0.0000	0.0000	0.0000	4.51	<4.51	<4.51	<4.51
Phorate	0.0000	0.0000	0.0000	0.0000	0.0000	5.06	<5.06	<5.06	<5.06
1,3,5-Trinitrobenzene	0.0000	0.0000	0.0000	0.0000	0.0000	5.63	<5.63	<5.63	<5.63
4-Bromophenyl-phenylether	0.0000	0.0000	0.0000	0.0000	0.0000	4.27	<4.27	<4.27	<4.27
alpha-BHC	0.0000	0.0000	0.0000	0.0000	0.0000	5.46	<5.46	<5.46	<5.46
Phenacetin	0.0000	0.0000	0.0000	0.0000	0.0000	6.73	<6.73	<6.73	<6.73
Diellate-B	0.0000	0.0000	0.0000	0.0000	0.0000	4.72	<4.72	<4.72	<4.72
Hexachlorobenzene	0.1047	0.0000	0.0000	0.0000	0.0000	4.53	0.1047J	0.453	<4.53
Dimethoate	0.0000	0.0000	0.0000	0.0000	0.0000	8.79	<8.79	<8.79	<8.79
4-Aminobiphenyl	0.0000	0.0000	0.0000	0.0000	0.0000	3.00	<3	<3	<3
beta-BHC									

Heptachlor epoxide	0.0000	0.0000	0.0000	0.0000	4.74	<4.74	<4.74	<4.74	<4.74	<4.74	<4.74
Fluoranthene	6.5459	5.2115	0.1258	5.3090	2.8527	5.13	6.55	5.21	0.1258J	5.31	2.8527J
Benzidine	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pyrene	9.9888	7.4224	0.1652	8.6265	4.3810	5.39	9.99	7.42	0.1652J	8.63	4.381J
Endosulfan I	0.0000	0.0000	0.0000	0.0000	0.00	5.60	<5.8	<5.8	<5.8	<5.8	<5.8
4,4'-DDDE	0.0000	0.0000	0.0000	0.0000	0.00	5.28	<5.28	<5.28	<5.28	<5.28	<5.28
Dieldrin	0.0000	0.0000	0.0000	0.0000	0.00	5.36	<5.36	<5.36	<5.36	<5.36	<5.36
Methyl yellow	0.0000	0.0000	0.0000	0.0000	0.00	5.77	<5.77	<5.77	<5.77	<5.77	<5.77
Endrin	0.0000	0.0000	0.0000	0.0000	0.00	6.73	<6.73	<6.73	<6.73	<6.73	<6.73
Chlorobenzilate	0.0000	0.0000	0.0000	0.0000	0.00	6.52	<6.52	<6.52	<6.52	<6.52	<6.52
Endosulfan II	0.0000	0.0000	0.0000	0.0000	0.00	5.68	<5.68	<5.68	<5.68	<5.68	<5.68
4,4'-DDD	0.0000	0.0000	0.0000	0.0000	0.00	5.44	<5.44	<5.44	<5.44	<5.44	<5.44
Famphur	0.0000	0.0000	0.0000	0.0000	0.00	28.20	<28.2	<28.2	<28.2	<28.2	<28.2
3,3'-Dimethylbenzidine	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Butylbenzylphthalate	5.6901	4.0777	6.2523	6.9170	5.2321	7.88	5.6901J	4.0777J	6.2523J	6.917J	5.2321J
Endrin aldehyde	0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Endosulfan sulfate	0.0000	0.0000	0.0000	0.0000	0.00	6.52	<6.52	<6.52	<6.52	<6.52	<6.52
4,4'-DDT	0.0000	0.0000	0.0000	0.0000	0.00	5.31	<5.31	<5.31	<5.31	<5.31	<5.31
Kepone	0.0000	0.0000	0.0000	0.0000	0.00	11.00	<11	<11	<11	<11	<11
2-Acetylaminofluorene	0.0000	0.0000	0.0000	0.0000	0.00	7.12	<7.12	<7.12	<7.12	<7.12	<7.12
Endrin ketone	0.0000	0.0000	0.0000	0.0000	0.00	5.81	<5.81	<5.81	<5.81	<5.81	<5.81
Benz(a)anthracene	3.9072	0.7484	0.0000	1.6356	0.7352	5.12	3.9072J	0.7484J	<5.12	1.6356J	0.7352J
3,3'-Dichlorobenzidine	0.0000	0.0000	0.0000	0.0000	0.00	2.92	<2.92	<2.92	<2.92	<2.92	<2.92
Methoxychlor	0.0000	0.0000	0.0000	0.0000	0.00	5.60	<5.6	<5.6	<5.6	<5.6	<5.6
Chrysene	7.6990	1.3807	0.0000	2.7224	1.3436	5.25	7.70	1.3807J	<5.25	2.7224J	1.3436J
bis(2-Ethylhexyl)phthalate	34.1738	19.1719	54.8326	113.0258	22.9886	12.10	34.17	19.17	54.83	113.03	22.99
Mrex	0.0000	0.0000	0.0000	0.0000	0.00	5.07	<5.07	<5.07	<5.07	<5.07	<5.07
Dieldrin trihydroate	7.1738	12.0024	12.0024	21.5554	21.5554	5.49	7.17	12.00	24.65	22.44	72.35
Benz(a)fluorene	1.7317	0.5286	0.0000	1.8236	0.7378	4.86	1.7317J	0.5286J	<4.86	1.836J	0.7378J
7,12-Dimethylbenz(a)anthracene	0.0000	0.0000	0.0000	0.0000	0.00	1.43	<1.43	<1.43	<1.43	<1.43	<1.43
Benz(k)fluorene	1.7906	0.5026	0.0000	1.0918	0.6624	5.81	1.7906J	0.5026J	<5.81	1.0918J	0.6624J
Benz(a)pyrene	2.5251	0.4198	0.0000	1.5911	0.6670	4.88	2.5251J	0.4198J	<4.88	1.5911J	0.6671J
3-Methylcholanthen	0.0000	0.0000	0.0000	0.0000	0.00	3.17	<3.17	<3.17	<3.17	<3.17	<3.17
Indeno[1,2,3-cd]pyrene	1.2808	0.4524	0.0000	0.8981	0.4513	5.13	1.2808J	0.4524J	<5.13	0.8981J	0.4513J
Dibenzo(a,h)anthracene	0.1653	0.0889	0.0000	0.2514	0.0819	5.32	0.1653J	0.0889J	<5.32	0.2514J	0.0819J
Benz(g,h)perylene	2.0717	0.7317	0.0000	1.6709	0.8193	5.37	2.0717J	0.7317J	<5.37	1.6709J	0.8193J
OCTANE	0.0000	0.4451	0.1071	0.0000	0.5478	0.00					
NONANE	0.0000	0.7458	0.1116	0.0000	0.1743	0.00					
DECANE	0.0000	0.8704	0.5329	0.0267	0.3781	0.00					
UNDECANE	0.0669	0.9199	0.3676	0.0000	0.3958	0.07					
DODECANE	0.1521	0.7962	0.1748	0.0000	0.5955	0.15					
TETRADECANE	0.3553	1.0224	0.5727	0.2909	0.6428	0.36					
HEXADECANE	0.4001	0.8816	0.3660	0.4655	0.9331	0.40					
OCTADECANE	0.3719	0.6094	0.1478	0.2895	0.3953	0.37					
EICOSANE	1.1518	1.0865	0.1354	0.5232	0.0000	1.15					
TETRACOSANE	3.1517	12.0254	0.0000	0.0000	2.7989	3.15					
OCTACOSANE	10.9847	0.0000	6.8212	0.0000	19.9270	10.98					
DOCTRICOANTANE	6.4273	2.3595	1.1732	1.3951	0.3484	6.43					
HEXADECANTANE	0.0000	0.0000	0.0000	0.0000	0.00	0.00					
TETRADECANTANE	0.0000	0.0000	0.0000	0.0000	0.00	0.00					
<b>NYS DOH Analyses - Semivolatiles</b>											
<b>Estimated Emissions g/Kg</b>											
0.0000= no recovery of this compound under conditions of extraction											
Test#	1	2	3	4	5						
Avid	Avid	Hut	Non	Non							
Recycler	Recycler	Blank	Recycler	Recycler							
Sample ID	9582042	9582043	9582044	9582045	9582046						
Compound	g/Kg	g/Kg	g/Kg	g/Kg	g/Kg						
Pyridine	0.0000	0.0000	n/a	0.0000	0.0000						
N-Nitrosodimethylamine	<0.0028	<0.0025	n/a	<0.0088	<0.0065						
2-Picoline	0.0000	0.0000	n/a	0.0000	0.0000						
N-Nitrosomethylamine	<0.0028	<0.0026	n/a	<0.0089	<0.0065						
Methyl methanesulfonate	<0.0026	<0.0024	n/a	<0.0082	<0.006						
N-Nitrosodiethylamine	<0.0028	<0.0026	n/a	<0.009	<0.0066						
Ethyl methanesulfonate	<0.0026	<0.0023	n/a	<0.0081	<0.0059						
Aniline	<0.0026	<0.0023	n/a	<0.0081	<0.0059						
Phenol	0.0460	0.1372	n/a	0.2040	0.1053						
bis(2-Chloroethyl)ether	<0.0026	<0.0023	n/a	<0.0092	<0.0067						
2-Chlorophenol	0.000472J	0.000474J	n/a	0.000826J	0.00153J						
1,3-Dichlorobenzene	0.0000	0.0000	0.0000	0.0000	0.0000J						
1,4-Dichlorobenzene	0.000014J	0.000154J	n/a	<0.0039	0.000288J						
1,2-Dichlorobenzene	0.000062J	0.0000483J	n/a	<0.000973	0.0001959J						
Benzyl alcohol	0.000723J	0.002071J	n/a	0.00849J	0.0104J						
2,2'-oxybis(1-Chloropropane)	<0.0025	<0.0023	n/a	<0.0079	<0.0058						
2-Methylphenol	0.0049	0.0225	n/a	0.0410	0.0419						
Acetophenone	0.001418J	0.0063	n/a	0.003948J	0.006134J						
N-Nitrosopyrrolidine	<0.0031	<0.0029	n/a	<0.0089	<0.0072						
N-Nitrosomorpholine	<0.0029	<0.0027	n/a	<0.0092	<0.0068						
o-Toluidine	<0.002	<0.0018	n/a	<0.0063	<0.0046						
Hexachloroethane	<0.0009	<0.0008	n/a	<0.0028	<0.002						
N-Nitroso-di-n-butylamine	<0.0031	<0.0028	n/a	<0.0097	<0.0071						
3- or 4-Methylphenol	0.0095	0.0393	n/a	0.0661	0.0571						
Nitrobenzene	<0.0026	<0.0024	n/a	<0.0083	<0.0061						
N-Nitrosopiperidine	<0.0025	<0.0023	n/a	<0.008	<0.0059						
Isophorone	<0.0026	<0.0023	n/a	<0.0081	<0.0059						
2-Nitrophenol	<0.0026	<0.0024	n/a	<0.0083	<0.0061						
2,4-Dimethylphenol	0.0039	0.0107	n/a	<0.0056	0.0474						
O,O,O-Triethylphosphorothioate	<0.0021	<0.0019	n/a	<0.0065	<0.0047						
bis(2-Chloroethyl)methane	<0.0025	<0.0023	n/a	<0.008	<0.0059						
Dimethylphenylhydramine	<0.0003	<0.0003	n/a	<0.0011	<0.0008						
2,4-Dichlorophenol	<0.0027	0.000114J	n/a	0.000404J	0.00061J						
1,2,4,5-Trichlorobenzene	0.000008	0.000025J	n/a	<0.0002	<0.0001						
cis-Isosafrole	<0.0017	<0.0016	n/a	<0.0055	<0.004						
2,4,6-Trichlorophenol	0.00028J	0.00048J	n/a	<0.0081	<0.0059						
2,4,5-Trichlorophenol	<0.0029	<0.0026	n/a	<0.0091	<0.0066						
trans-Isosafrole	<0.0015	<0.0014	n/a	<0.0048	<0.0035						
2-Chloronaphthalene	<0.0013	<0.0012	n/a	<0.0042	<0.0031						
2-Nitroaniline	<0.0026	<0.0023	n/a	<0.0081	<0.0059						
1,4-Naphthoquinone	<0.0039	<0.0035	n/a	<0.0122	<0.0089						
1,3-Dinitrobenzene	<0.0025	<0.0022	n/a	<0.0077	<0.0057						
Dimethylphthalate	<0.0028	<0.0023	n/a	<0.0081	<0.0069						

Diethylphthalate	<0.0027	0.000343J	n/a	0.00362J	0.001432J
4-Chlorophenyl-phenylether	<0.0014	<0.0013	n/a	<0.0046	<0.0033
Thionazin	<0.024	<0.021	n/a	<0.0075	<0.0055
5-Nitro-o-toluidine	<0.025	<0.023	n/a	<0.0079	<0.0057
4-Nitroaniline	<0.024	<0.021	n/a	<0.0075	<0.0054
4,6-Dinitro-2-methylphenol	<0.025	<0.023	n/a	<0.0079	<0.0058
Diphenylamine	<0.023	<0.021	n/a	<0.0072	<0.0053
N-Nitrosodiphenylamine	<0.023	<0.021	n/a	<0.0072	<0.0053
Sulfotep	<0.021	<0.019	n/a	<0.0066	<0.0048
Diallate-A	<0.018	<0.016	n/a	<0.0056	<0.0041
Phorate	<0.002	<0.0018	n/a	<0.0062	<0.0046
1,3,5-Trinitrobenzene	<0.022	<0.002	n/a	<0.0069	<0.0051
4-Bromophenyl-phenylether	<0.017	<0.0015	n/a	<0.0053	<0.0038
alpha-BHC	<0.021	<0.019	n/a	<0.0067	<0.0049
Phenacetin	<0.026	<0.024	n/a	<0.0083	<0.0061
Diallate-B	<0.018	<0.0017	n/a	<0.0058	<0.0043
Hexachlorobenzene	0.000041J	<0.0016	n/a	<0.0056	<0.0041
Dimethoate	<0.034	<0.0031	n/a	<0.0108	<0.0079
4-Aminophenyl	<0.012	<0.011	n/a	<0.0037	<0.0027
Beta-BHC	<0.023	<0.021	n/a	<0.0043	<0.0033
Phenylphenolphenol	<0.022	<0.002	n/a	<0.0068	<0.005
gamma-BHC	<0.023	<0.002	n/a	<0.0069	<0.0051
Pentachloronitrobenzene	<0.019	0.000404J	n/a	<0.0059	<0.0043
Pronamide	<0.021	<0.019	n/a	<0.0066	<0.0048
Phenanthrene	0.0065	0.0135	n/a	0.0270	0.0106
Anthracene	0.000968J	0.0019	n/a	0.003119J	0.001343J
Disulfoton	<0.014	<0.0013	n/a	<0.0044	<0.0032
delta-BHC	<0.021	<0.019	n/a	<0.0067	<0.0049
Dinosob	<0.022	<0.002	n/a	<0.007	<0.0051
Methyl parathion	<0.026	<0.023	n/a	<0.0081	<0.0059
Heptachlor	<0.019	<0.0018	n/a	<0.0061	<0.0045
Di-n-butylphthalate	0.00096J	0.001574J	n/a	0.002566J	0.0087
4-Nitroquinoline-1-oxide	<0.001	<0.0009	n/a	<0.0032	<0.0023
Aldrin	<0.018	<0.0016	n/a	<0.0056	<0.0041
Parathion	<0.0022	<0.002	n/a	<0.0068	<0.005
Methaphyriene	<0.006	<0.0005	n/a	<0.0018	<0.0013
Isodrin	<0.017	<0.0016	n/a	<0.0055	<0.004
Heptachlor epoxide	<0.019	<0.0017	n/a	<0.0058	<0.0043
Fluoranthene	0.0026	0.0038	n/a	0.0065	0.00372J
Benzidine	0.000	0.0000	n/a	0.0000	0.0000
Pyrene	0.0039	0.026	n/a	0.0108	0.003940J
Endosulfan I	<0.023	<0.021	n/a	<0.0072	<0.0052
4,4'-DDE	<0.021	<0.019	n/a	<0.0065	<0.0048
Dieldrin	<0.021	<0.019	n/a	<0.0066	<0.0048
Methyl yellow	<0.023	<0.002	n/a	<0.0071	<0.0052
Endrin	<0.026	<0.024	n/a	<0.0083	<0.0061
Chlorobenzilate	<0.025	<0.023	n/a	<0.008	<0.0059
Endosulfan II	<0.022	<0.002	n/a	<0.007	<0.0051
4,4'-DDD	<0.021	<0.019	n/a	<0.0067	<0.0049
Famphur	<0.011	<0.01	n/a	<0.0348	<0.0254
3,3'-Dimethylbenzidine	0.0000	0.0000	n/a	0.0000	0.0000
Butylbenzylphthalate	0.002224J	0.001448J	n/a	0.008533J	0.004716J
Endrin aldehyde	0.0000	0.0000	n/a	0.0000	0.0000
Endosulfan sulfate	<0.025	<0.023	n/a	<0.008	<0.0059
4,4'-DDT	<0.021	<0.019	n/a	<0.0066	<0.0048
Kepone	<0.043	<0.039	n/a	<0.0136	<0.0099
2-Acetylaminofluorene	<0.028	<0.025	n/a	<0.0088	<0.0064
Endrin ketone	<0.023	<0.021	n/a	<0.0072	<0.0052
Benz(a)anthracene	0.001527J	0.000266J	n/a	0.002018J	0.000663J
3,3'-Dichlorobenzidine	<0.011	<0.001	n/a	<0.0036	<0.0026
Methoxychlor	<0.022	<0.02	n/a	<0.008	<0.005
Coume	0.0030	0.0046J	n/a	0.033359J	0.012111J
iso-2-Ethylhexylphthalate	0.0134	0.0068	n/a	0.1384	0.0207
Mirex	<0.002	<0.0018	n/a	<0.0063	<0.0046
Di-n-octylphthalate	0.0028	0.0046	n/a	0.0277	0.0658
Benz(b)fluoranthene	0.000677J	0.000188J	n/a	0.001584J	0.000665J
7,12-Dimethylbenz(a)anthracene	<0.006	<0.005	n/a	<0.0018	<0.0013
Benz(k)fluoranthene	0.0007J	0.000178J	n/a	0.001347J	0.000597J
Benz(a)pyrene	0.000987J	0.000149J	n/a	0.001963J	0.000601J
3-Methylcholanthrene	<0.012	<0.011	n/a	<0.0039	<0.0029
Indeno[1,2,3-cd]pyrene	0.000501J	0.000161J	n/a	0.001108J	0.000407J
Dibenzo(a,h)anthracene	0.00065J	0.000032J	n/a	0.00031J	0.000074J
Benz(g,h,i)perylene	0.00081J	0.00026J	n/a	0.002061J	0.000739J
		0J	n/a	0J	0J
OCTANE	0.0000	0.000158J	n/a	0J	0.000494J
NONANE	0.0000	0.000265J	n/a	0J	0.000157J
DECANE	0.0000	0.000309J	n/a	0.000033J	0.000341J
UNDECANE	0.0000	0.000327J	n/a	0J	0.000357J
DODECANE	0.0001	0.000283J	n/a	0J	0.000537J
TRIDECAANE	0.0001	0.000263J	n/a	0.000259J	0.000579J
HEXADECANE	0.0002	0.00034J	n/a	0.000354J	0.000841J
OCTADECANE	0.0001	0.000246J	n/a	0.000357J	0.000356J
EICOSANE	0.0005	0.000386J	n/a	0.000645J	0J
TETRADECANE	0.0012	0.004269J	n/a	0J	0.002523J
OCTACOSANE	0.0043	0J	n/a	0J	0.017963J
DOOTRIACONTANE	0.0025	0.000838J	n/a	0.001721J	0.000312J
HEXADECACONTANE	0.0000	0J	n/a	0J	0J
TETRACONTANE	0.0000	0J	n/a	0J	0J

## PAH's(SIM)

PAH's(SIM)							
Raw Data							
	Run 1			Run 2			
	Avid			Avid			
	Recycler			Recycler			
RunName:	S1115E			S1115C			
Acc.Num.:	9582042	detection	%	9582043	detection	%	
Units:	PG	limit	recovery	PG	limit	recovery	
Naphthalene	103039	10.86434	182.2631	179284.3	11.01419	179.7833	
Acenaphthylene	69235.87	10.19921	102.3762	113907.5	12.12625	86.10712	
Acenaphthene	6125.239	17.03119	93.2366	21950.55	17.89212	88.75028	
Fluorene	37749.99	13.39614	86.51323	89677.34	13.98332	82.88044	
Phenanthrene	72597.59	8.332902	83.45888	108517.2	10.21779	68.06311	
Anthracene	15516.37	5.634816	124.0761	26298.6	6.398817	109.2617	
Fluoranthene	38168.81	5.980981	79.06458	41195.95	7.572286	62.44929	
Pyrene	42709.07	5.74234	79.85149	38780.1	7.27887	62.99527	
Benzo(a)anthracene	290497.77	4.96437	87.72358	12095.87	7.346935	59.27538	
Chrysene	42109	5.81791	75.36241	13080.26	7.086832	61.86851	
Benzo(b)fluoranthene	41441.33	5.542581	75.62285	15229	6.831847	61.35175	
Benzo(k)fluoranthene	13326.17	5.668317	73.48492	3488.019	6.715067	62.03003	
Benzo(a)pyrene	28737.18	5.579842	86.93133	6717.77	6.558836	73.95567	
Indeno(123cd)pyrene	26582.8	5.651843	70.77049	8396.619	6.000705	66.65612	
Dibenz(a,h)anthracene	9707.446	5.209414	72.90847	1901.785	5.825322	65.1999	
Benzo(ghi)perylene	25267.07	5.911573	64.94457	7916.835	5.654373	67.8987	
Data Corrected by Dilution Factor (DF=100)							
	Run 1			Run 2			
	Avid			Avid			
	Recycler			Recycler			
RunName:	S1115E			S1115C			
Acc.Num.:	9582042	detection	%	9582043	detection	%	
Units:	PG	limit	recovery	PG	limit	recovery	
Naphthalene	10303900	1086.434		17928430	1101.419		
Acenaphthylene	6923587	1019.921		11390750	1212.625		
Acenaphthene	612523.9	1703.119		2195055	1789.212		
Fluorene	3774999	1339.614		8967734	1398.332		
Phenanthrene	7259759	833.2902		10851720	1021.779		
Anthracene	1551637	563.4816		2629860	639.8817		
Fluoranthene	3816881	598.0981		4119595	757.2286		
Pyrene	4270907	574.234		3878010	727.887		
Benzo(a)anthracene	2904977	496.437		1209587	734.6935		
Chrysene	4210900	581.791		1308026	708.6832		
Benzo(b)fluoranthene	4144133	554.2581		1522900	683.1847		
Benzo(k)fluoranthene	1332617	566.8317		348801.9	671.5067		
Benzo(a)pyrene	2873718	557.9842		671777	655.8836		
Indeno(123cd)pyrene	2658280	565.1843		839661.9	600.0705		
Dibenz(a,h)anthracene	970744.6	520.9414		190178.5	582.5322		
Benzo(ghi)perylene	2526707	591.1573		791683.5	565.4373		
NYS DOH Analyses - SIM PAHs							
Estimated PAH Emissions mg/Kg							
(taken from #'s corrected by dilution factor)							
	Run 1	Run 2	Run 3	Run 4	Run 5		Tm,1
	Avid	Avid	Hut	Avid	Non		deg F
	Recycler	Recycler	Blank	Recycler	Recycler	1	93.0000
RunName:	S1115E	S1115C	S1115A	S1115D	S1115B	2	88.0000
Acc.Num.:	9582042	9582043	9582044	9582045	9582046	3	86.0000
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	4	85.0000
Naphthalene	4.0279	6.3651	n/a	18.9598	16.1032	5	71.0000
Acenaphthylene	2.7065	4.0440	n/a	13.6424	8.9577		
Acenaphthene	0.2394	0.7793	n/a	0.9578	0.5780		
Fluorene	1.4757	3.1838	n/a	4.7756	2.5360		
Phenanthrene	2.8379	3.8527	n/a	8.9946	5.6546		
Anthracene	0.6066	0.9337	n/a	2.3724	1.2910		
Fluoranthene	1.4921	1.4626	n/a	5.1917	2.9436		
Pyrene	1.6695	1.3768	n/a	6.1419	3.5157		
Benzo(a)anthracene	1.1356	0.4294	n/a	3.1364	1.3425		
Chrysene	1.6461	0.4644	n/a	3.5588	1.5136		
Benzo(b)fluoranthene	1.6200	0.5407	n/a	3.7585	1.5016		
Benzo(k)fluoranthene	0.5209	0.1238	n/a	1.6424	0.4085		
Benzo(a)pyrene	1.1234	0.2385	n/a	3.1275	1.1167		
Indeno(123cd)pyrene	1.0391	0.2981	n/a	2.7997	0.9547		
Dibenz(a,h)anthracene	0.3795	0.0675	n/a	0.4861	0.1595		
Benzo(ghi)perylene	0.9877	0.2811	n/a	2.8148	1.1340		



## DIOXINS&amp;FURANS

DIOXINS						
Raw Data						
		Run 1		Run 2		Run 3
	Avid		Avid		Hut	
	Recycler		Recycler		Blank	
RunName:	S1204		S1201A		S1201	
Acc.Num.:	9582048	detection	%	9582049	detection	%
Units:	PG	limit	recovery	PG	limit	recovery
2,3,7,8	TCDD	0	2307.871	7.670365	0	1283.692
1,2,3,7,8	PCDD	3414.446	2445.703	6.788609	0	1346.589
1,2,3,4,7,8	HXCDD	391.6941	468.2535	44.43986	0	350.2469
1,2,3,6,7,8	HXCDD	3566.193	2777.409	6.955112	0	1688.189
1,2,3,7,8,9	HXCDD	2084.12	2559.716	6.955112	0	1555.869
1,2,3,4,6,7,8	HPCDD	38698.84	4784.308	4.980959	2065.381	2637.106
1,2,3,4,6,7,8,9	OCDD	29142.65	5724.797	4.980959	1299.12	3155.502
2,3,7,8	TCDF	5504.335	2448.438	6.496259	534.6296	1421.509
1,2,3,7,8	PCDF	8917.685	1725.859	8.579017	0	1054.168
2,3,4,7,8	PCDF	3321.813	364.2099	44.39325	488.3684	268.6294
1,2,3,4,7,8	HXCFD	3108.832	251.3142	47.19235	291.2861	189.9857
1,2,3,6,7,8	HXCFD	17017.1	1615.537	7.275937	1523.427	994.274
2,3,4,6,7,8	HXCFD	23836.05	1914.281	7.275937	2564.092	1178.135
1,2,3,7,8,9	HXCFD	5995.368	1785.186	7.275937	706.3438	1098.684
1,2,3,4,6,7,8	HPCDF	111125	2787.295	5.574284	4081.925	1452.435
1,2,3,4,7,8,9	HPCDF	1137.84	448.4982	37.13958	87.64438	313.3514
1,2,3,4,6,7,8,9	OCDF	28960.3	5154.729	4.980959	1366.656	2841.281
TOT	TCDD	35799.7	2307.871	7.670365	4996.772	1283.692
TOT	PCDD	48285.76	2445.703	6.788609	2124.783	1346.589
TOT	HXCDD	24956.48	2991.917	6.955112	1018.401	1818.573
TOT	HPCDD	85738.63	4784.308	4.980959	4145.003	2637.106
TOT	OCDD	29142.65	5724.797	4.980959	1299.12	3155.502
TOT	TCDF	400407.6	2448.438	6.496259	60885.94	1421.509
TOT	PCDF	252083.6	1725.859	8.579017	28717.97	1054.168
TOT	HXCFD	197873.3	1630.046	7.275937	15113.06	1003.203
TOT	HPCDF	145879.5	2787.295	5.574284	5732.617	1452.435
TOT	OCDF	28960.3	5154.729	4.980959	1366.656	2841.281
<b>Dioxins Estimated Emissions mg/Kg</b>						
		Run 1	Run 2	Run 3	Run 4	Run 5
	Avid	Avid	Hut	Non	Non	
	Recycler	Recycler	Blank	Recycler	Recycler	
RunName:	S1204	S1201A	S1201	S1201B	S1204A	
Acc.Num.:	9582048	9582049	9582050	9582051	9582052	
Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
2,3,7,8	TCDD	<0.0009	<0.0005	n/a	<0.0003	<0.0003
1,2,3,7,8	PCDD	0.0013	<0.0005	n/a	<0.0003	<0.0003
1,2,3,4,7,8	HXCDD	0.0002	<0.0001	n/a	<0.0004	<0.0003
1,2,3,6,7,8	HXCDD	0.0014	<0.0006	n/a	<0.0006	<0.0005
1,2,3,7,8,9	HXCDD	0.0008	<0.0006	n/a	<0.0005	<0.0004
1,2,3,4,6,7,8	HPCDD	0.0153	0.0008	n/a	<0.0006	<0.0005
1,2,3,4,6,7,8,9	OCDD	0.0115	0.0005	n/a	0.0448	0.0317
2,3,7,8	TCDF	0.0022	0.0002	n/a	0.0001	<0.0003
1,2,3,7,8	PCDF	0.0035	<0.0004	n/a	0.0001	<0.0002
2,3,4,7,8	PCDF	0.0013	0.0002	n/a	0.0002	<0.0003
1,2,3,4,7,8	HXCFD	0.0012	0.0001	n/a	0.0001	0.0001
1,2,3,6,7,8	HXCFD	0.0067	0.0006	n/a	0.0002	<0.0003
2,3,4,6,7,8	HXCFD	0.0094	0.0009	n/a	0.0001	<0.0003
1,2,3,7,8,9	HXCFD	0.0024	0.0003	n/a	<0.0004	<0.0003
1,2,3,4,6,7,8	HPCDF	0.0439	0.0015	n/a	0.0002	0.0034
1,2,3,4,7,8,9	HPCDF	0.0004	0.0000	n/a	<0.0005	<0.0003
1,2,3,4,6,7,8,9	OCDF	0.0114	0.0005	n/a	<0.0007	<0.0006
TOT	TCDD	0.0141	0.0018	n/a	<0.0003	<0.0003
TOT	PCDD	0.0191	0.0008	n/a	<0.0003	<0.0003
TOT	HXCDD	0.0099	0.0004	n/a	<0.0006	<0.0005
TOT	HPCDD	0.0338	0.0015	n/a	<0.0006	<0.0005
TOT	OCDD	0.0115	0.0005	n/a	0.0448	0.0317
TOT	TCDF	0.1580	0.0224	n/a	0.0038	0.0007
TOT	PCDF	0.0995	0.0106	n/a	0.0024	<0.0002
TOT	HXCFD	0.0781	0.0056	n/a	0.0011	0.0005
TOT	HPCDF	0.0576	0.0021	n/a	0.0002	0.0034
TOT	OCDF	0.0114	0.0005	n/a	<0.0007	<0.0006

DIOXINS & FURANS

Estimated PCB Emissions						
	Run 1	Run 2	Run 3	Run 4	Run 5	
Raw Data	Avid	Avid	Hut	Non	Non	
	Recycler	Recycler	Blank	Recycler	Recycler	
	9582048	9582049	9582050	9582051	9582052	
COMPOUND	ng	ng	ng	ng	ng	
BZ-1 (2-CHLOROBIPHENYL)	47.0000	21.0000	2.0000	LT	33.0000	150.0000
BZ-2 (3-CHLOROBIPHENYL)	580.0000	SU	2.0000	LT	2.0000	2.0000
BZ-3 (4-CHLOROBIPHENYL)	2.0000	LT	76.0000	SU	2.0000	160.0000
BZ-10, BZ-4	0.4000	LT	0.4000	LT	0.4000	LT
2,4,5,6-TETRACHLORO-m-XYLENE (Surrogate)	0.4000	LT	0.4000	LT	0.8000	3.0000
BZ-7, BZ-9	31.0000		33.0000	0.4000	LT	52.0000
BZ-6 (2,3'-DICHLOROBIPHENYL)	12.0000		22.0000	0.4000	LT	43.0000
BZ-8, BZ-5	0.4000	LT	0.4000	LT	0.4000	LT
HEXAChLOROBENZENE	330.0000		65.0000	0.4000	LT	0.4000
BZ-19 (2,2',6-TRICHLOROBIPHENYL)	INTERFER	0.4000	LT	INTERFER	0.4000	LT
BZ-12 (3,4-DICHLOROBIPHENYL) (Surrogate)	INTERFER		INTERFER	INTERFER	0.4000	LT
BZ-18 (2,2',5-TRICHLOROBIPHENYL)	54.0000		INTERFER	0.4000	LT	60.0000
BZ-15, BZ-17	18.0000		26.0000	0.4000	LT	32.0000
BZ-24, BZ-27	68.0000		23.0000	0.4000	LT	17.0000
BZ-16, BZ-32	11.0000		26.0000	0.4000	LT	28.0000
BZ-29 (2,4,5-TRICHLOROBIPHENYL)	5.6000		0.4000	LT	0.4000	LT
BZ-26 (2,3',5-TRICHLOROBIPHENYL)	17.0000		12.0000	0.4000	LT	15.0000
BZ-25 (2,3',4-TRICHLOROBIPHENYL)	0.4000	LT	0.4000	LT	0.4000	LT
BZ-31 (2,4',5-TRICHLOROBIPHENYL)	33.0000		41.3000	1.6000	LT	62.0000
BZ-28 (2,4,4'-TRICHLOROBIPHENYL)	11.0000		16.0000	0.4000	LT	0.4000
BZ-20, BZ-33, BZ-53	35.0000		33.0000	0.4000	LT	30.0000
BZ-51 (2,2',4,6'-TETRACHLOROBIPHENYL)	11.0000		7.9000	0.4000	LT	0.4000
BZ-22 (2,3,4'-TRICHLOROBIPHENYL)	19.0000		15.0000	0.4000	LT	24.0000
BZ-45 (2,2',3,6-TETRACHLOROBIPHENYL)	64.0000		INTERFER	INTERFER	76.0000	160.0000
BZ-46 (2,2',3,6'-TETRACHLOROBIPHENYL)	12.0000		INTERFER	INTERFER	INTERFER	24.0000
BZ-39 (3,4',5-TRICHLOROBIPHENYL)	0.4000	LT	0.4000	LT	0.4000	LT
BZ-52 (2,2',5,5'-TETRACHLOROBIPHENYL)	50.0000		31.0000	1.0000	LT	28.0000
BZ-49 (2,2',4,5'-TETRACHLOROBIPHENYL)	0.4000	LT	0.4000	LT	1.2000	0.4000
BZ-47 (2,2',4,4'-TETRACHLOROBIPHENYL)	340.0000		INTERFER	0.4000	LT	0.4000
BZ-48 (2,2',4,5-TETRACHLOROBIPHENYL)	0.4000	LT	0.4000	LT	0.4000	LT
BZ-44 (2,2',3,5'-TETRACHLOROBIPHENYL)	16.0000		14.0000	INTERFER	9.0000	23.0000
BZ-37, BZ-42, BZ-59	INTERFER	0.4000	LT	0.4000	LT	31.0000
BZ-41, BZ-64	24.0000		10.0000	0.4000	LT	0.4000
BZ-40 (2,2',3,3'TETRACHLOROBIPHENYL)	2.2000		1.4000	0.4000	LT	2.4000
BZ-67 (2,3',4,5-TETRACHLOROBIPHENYL)	0.4000	LT	1.3000	0.4000	LT	8.0000
BZ-63, OCS	13.0000		0.4000	LT	0.4000	LT
BZ-74 (2,4,4',5-TETRACHLOROBIPHENYL)	9.3000		5.0000	0.4000	LT	2.5000
BZ-70 (2,3',4,5-TETRACHLOROBIPHENYL)	10.0000		9.2000	0.9000	LT	5.4000
BZ-66, BZ-95	12.0000		10.0000	1.6000	SU	11.0000
BZ-91 (2,2',3,4',6-PENTACHLOROBIPHENYL)	8.0000		4.0000	0.4000	LT	8.6000
BZ-56, BZ-60	11.0000		7.4000	1.5000	LT	5.1000
BZ-92 (2,2',3,5,5'-PENTACHLOROBIPHENYL)	4.0000		2.4000	0.4000	LT	1.7000
BZ-84 (2,2',3,3',6-PENTACHLOROBIPHENYL)	3.2000		2.5000	0.4000	LT	3.9000
BZ-90, BZ-101	6.0000		4.8000	0.8000	LT	4.2000
BZ-99 (2,2',4,4',5-PENTACHLOROBIPHENYL)	21.0000		17.0000	0.4000	LT	16.0000
BZ-119 (2,3',4,4',6-PENTACHLOROBIPHENYL)	0.4000	LT	0.4000	LT	0.4000	LT
BZ-83 (2,2',3,3',5-PENTACHLOROBIPHENYL)	10.0000		8.0000	0.4000	LT	4.4000
BZ-97 (2,2',3',4,5-PENTACHLOROBIPHENYL)	7.2000		3.5000	0.4000	LT	2.1000
BZ-87, BZ-115	0.4000	LT	0.4000	LT	0.4000	LT
BZ-85, 4,4'-DDE	11.0000		5.0000	1.1000	LT	5.4000
BZ-136	3.1000		1.3000	0.4000	LT	0.4000
BZ-77, BZ-110	14.0000		10.0000	1.0000	LT	7.5000
BZ-82 (2,2',3,3',4-PENTACHLOROBIPHENYL)	0.4000	LT	5.6000	0.4000	LT	0.4000
BZ-151 (2,2',3,5,5'-HEXAChLOROBIPHENYL)	16.0000		12.0000	0.4000	LT	8.2000
BZ-135	18.0000		2.1000	0.4000	LT	4.0000
BZ-107 (2,3,3',4,5-PENTACHLOROBIPHENYL)	0.4000	LT	0.4000	LT	0.4000	LT
BZ-123, BZ-149	39.0000		22.0000	0.7000	LT	15.0000
BZ-118	21.0000		11.0000	0.7000	LT	6.7000
BZ-134	11.0000		0.4000	LT	0.4000	LT
BZ-122 (2',3,3',4,5-PENTACHLOROBIPHENYL)	4.3000		0.4000	LT	0.4000	LT
BZ-146	6.4000		3.4000	0.4000	LT	2.4000
BZ-153	10.0000		2.9000	INTERFER	INTERFER	12.0000
BZ-132, BZ-105	15.3000		3.5000	0.7000	LT	4.8000
BZ-141 (2,2',3,4,5,5'-HEXAChLOROBIPHENYL)	7.4000		4.0000	0.4000	LT	2.6000
BZ-179	0.4000	LT	0.4000	LT	0.4000	LT
BZ-137	0.4000	LT	0.4000	LT	0.4000	LT
BZ-130, BZ-176	0.4000	LT	0.4000	LT	0.4000	LT
BZ-138	12.0000		5.7000	0.4000	LT	6.0000
BZ-158	3.0000		0.4000	LT	0.4000	LT
BZ-129	0.4000	LT	1.1000	0.4000	LT	0.4000
BZ-178	12.0000		0.7000	0.4000	LT	0.4000
BZ-175		NR		NR	NR	NR
BZ-187	11.0000		0.4000	LT	0.4000	LT
BZ-183	0.4000	LT	9.9000	0.4000	LT	7.2000
BZ-128	5.7000		2.5000	0.4000	LT	2.6000
BZ-167	5.3000		1.5000	0.4000	LT	4.3000

BZ-185	0.4000	LT	0.4000	LT	0.4000	LT	0.4000	LT	2.7000	
BZ-174	6.5000		4.5000		INTERFER		2.1000		7.8000	
BZ-177	5.8000		1.9000		0.4000	LT	1.2000		7.7000	
BZ-171, BZ-202		INTERFER		INTERFER		INTERFER		INTERFER		34.0000
BZ-156	6.8000		0.4000	LT	0.4000	LT	0.4000	LT	0.4000	LT
BZ-173, BZ-157, IUPAC-201	0.4000	LT								
BZ-172	4.5000		0.4000	LT	0.4000	LT	1.7000		0.4000	LT
BZ-197	2.9000		1.2000		0.4000	LT	0.4000	LT	0.4000	LT
BZ-180	31.0000		0.4000	LT	1.0000		14.0000		0.4000	LT
BZ-193	0.4000	LT								
BZ-191	5.0000		1.8000		0.4000	LT	0.4000	LT	0.4000	LT
IUPAC-200	0.4000	LT	0.4000	LT	0.4000	LT	0.4000	LT	3.1000	
MIREX		INTERFER								
BZ-170, BZ-190	0.4000	LT	8.0000		0.4000	LT	0.4000	LT	11.0000	
IUPAC-199	5.9000		2.0000		0.4000	LT	0.7000		1.4000	
BZ-203, BZ-196	9.7000		0.4000	LT	0.4000	LT	1.2000		2.5000	
BZ-189	11.0000		0.4000	LT	0.4000	LT	0.4000	LT	3.8000	
BZ-195	7.8000		1.1000		0.4000	LT	0.4000	LT	2.4000	
BZ-194		INTERFER		INTERFER		0.4000	LT	2.3000	0.4000	LT
BZ-206		INTERFER		0.4000	LT	0.4000	LT	0.4000	LT	INTERFER
BZ-209 (DECACHLOROBIPHENYL) (Surrogate)	3.7000		2.7000		0.4000	LT	1.0000		0.4000	LT
BZ-14 (3,5-DICHLOROBIPHENYL)	464.0000		450.0000		400.0000		470.0000	EE	520.0000	
BZ-65 (2,3,5,6-TETRACHLOROBIPHENYL)	905.0000		950.0000		790.0000		1000.0000		830.0000	
BZ-166, BZ-175	1090.0000		1150.0000		1130.0000		1040.0000		1140.0000	
Estimated emissions mg/Kg										
	Run 1		Run 2		Run 3		Run 4		Run 5	
	Avid		Avid		Hut		Non		Non	
	Recycler		Recycler		Blank		Recycler		Recycler	
COMPOUND	mg/kg									
BZ-1 (2-CHLOROBIPHENYL)	0.0185		0.0077		n/a		0.0408		0.1344	
BZ-2 (3-CHLOROBIPHENYL)	0.2288	SU	0.0007	LT	n/a		0.0025		0.0018	LT
BZ-3 (4-CHLOROBIPHENYL)	0.0008	LT	0.0280	SU	n/a		0.0841	SU	0.1434	
BZ-10, BZ-4	0.0002	LT	0.0001	LT	n/a		0.0005	LT	0.0004	LT
2,4,5,6-TETRACHLORO-m-XYLENE (Surrogate)	0.0002	LT	0.0001	LT	n/a		0.0010		0.0027	
BZ-7, BZ-9	0.0122		0.0121		n/a		0.0643		0.0986	
BZ-6 (2,3'-DICHLOROBIPHENYL)	0.0047		0.0081		n/a		0.0005	LT	0.0385	
BZ-8, BZ-5	0.0002	LT	0.0001	LT	n/a		0.0005	LT	0.0004	LT
HEXAChlorOBENZENE	0.1302		0.0239		n/a		0.0005	LT	0.0448	
BZ-19 (2,2',6-TRICHLOROBIPHENYL)	interfer		0.0001	LT	n/a		0.0005	LT	0.0117	
BZ-12 (3,4-DICHLOROBIPHENYL) (Surrogate)	interfer		interfer		n/a		0.0005	LT	0.0152	
BZ-18 (2,2',5-TRICHLOROBIPHENYL)	0.0213		interfer		n/a		0.0742		0.0726	
BZ-15, BZ-17	0.0071		0.0096		n/a		0.0396		0.0385	
BZ-24, BZ-27	0.0268		0.0085		n/a		0.0210		0.0004	LT
BZ-16, BZ-32	0.0043		0.0096		n/a		0.0346		0.0448	
BZ-29 (2,4,5-TRICHLOROBIPHENYL)	0.0022		0.0001	LT	n/a		0.0005	LT	0.0004	LT
BZ-26 (2,3',5-TRICHLOROBIPHENYL)	0.0067		0.0044		n/a		0.0186		0.0323	
BZ-25 (2,3',4-TRICHLOROBIPHENYL)	0.0002	LT	0.0001	LT	n/a		0.0005	LT	0.0004	LT
BZ-31 (2,4',5-TRICHLOROBIPHENYL)	0.0130		0.0152		n/a		0.0767		0.0645	
BZ-28 (2,4,4'-TRICHLOROBIPHENYL)	0.0043		0.0059		n/a		0.0005	LT	0.0430	
BZ-20, BZ-33, BZ-53	0.0138		0.0121		n/a		0.0371		0.0592	
BZ-51 (2,2',4,6'-TETRACHLOROBIPHENYL)	0.0043		0.0029		n/a		0.0005	LT	0.0004	LT
BZ-22 (2,3,4'-TRICHLOROBIPHENYL)	0.0075		0.0055		n/a		0.0297		0.0538	
BZ-45 (2,2',3,6-TETRACHLOROBIPHENYL)	0.0253		interfer		n/a		0.0940		0.1434	
BZ-46 (2,2',3,6'-TETRACHLOROBIPHENYL)	0.0047		interfer		n/a		interfer		0.0215	
BZ-39 (3,4',5-TRICHLOROBIPHENYL)	0.0002	LT	0.0001	LT	n/a		0.0005	LT	0.0004	LT
BZ-52 (2,2',5,5'-TETRACHLOROBIPHENYL)	0.0197		0.0114		n/a		0.0346		0.0780	
BZ-49 (2,2',4,5'-TETRACHLOROBIPHENYL)	0.0002	LT	0.0001	LT	n/a		0.0005	LT	0.0004	LT
BZ-47 (2,2',4,4'-TETRACHLOROBIPHENYL)	0.1342		interfer		n/a		0.0005	LT	interfer	
BZ-48 (2,2',4,5-TETRACHLOROBIPHENYL)	0.0002	LT	0.0001	LT	n/a		0.0005	LT	interfer	
BZ-44 (2,2',3,5'-TETRACHLOROBIPHENYL)	0.0063		0.0052		n/a		0.0111		0.0206	
BZ-37, BZ-42, BZ-59	interfer		0.0001	LT	n/a		0.0383		interfer	
BZ-41, BZ-64	0.0095		0.0037		n/a		0.0005	LT	0.0484	
BZ-40 (2,2',3,3'TETRACHLOROBIPHENYL)	0.0009		0.0005		n/a		0.0030		0.0035	
BZ-67 (2,3',4,5-TETRACHLOROBIPHENYL)	0.0002	LT	0.0005		n/a		0.0099		0.0004	LT
BZ-63, OCS	0.0051		0.0001	LT	n/a		0.0005	LT	0.0004	LT
BZ-74 (2,4,4',5-TETRACHLOROBIPHENYL)	0.0037		0.0018		n/a		0.0031		0.0088	
BZ-70 (2,3',4',5-TETRACHLOROBIPHENYL)	0.0039		0.0034		n/a		0.0067		0.0099	
BZ-66, BZ-95	0.0047		0.0037		n/a		0.0136		0.0206	
BZ-91 (2,2',3,4',6-PENTACHLOROBIPHENYL)	0.0032		0.0015		n/a		0.0106		0.0041	
BZ-56, BZ-60	0.0043		0.0027		n/a		0.0063		0.0073	
BZ-92 (2,2',3,5,5'-PENTACHLOROBIPHENYL)	0.0016		0.0009		n/a		0.0021		0.0031	
BZ-84 (2,2',3,3',6-PENTACHLOROBIPHENYL)	0.0013		0.0009		n/a		0.0048		0.0083	
BZ-90, BZ-101	0.0024		0.0018		n/a		0.0052		0.0108	
BZ-99 (2,2',4,4',6-PENTACHLOROBIPHENYL)	0.0083		0.0063		n/a		0.0198		0.0188	
BZ-119 (2,3',4,4',6-PENTACHLOROBIPHENYL)	0.0002	LT	0.0001	LT	n/a		0.0005	LT	0.0004	LT
BZ-83 (2,2',3,3',5-PENTACHLOROBIPHENYL)	0.0039		0.0029		n/a		0.0054		0.0019	
BZ-97 (2,2',3,4,5-PENTACHLOROBIPHENYL)	0.0028		0.0013		n/a		0.0026		0.0056	
BZ-87, BZ-115	0.0002	LT	0.0001	LT	n/a		0.0005	LT	0.0004	LT
BZ-85, 4,4'-DDE	0.0043		0.0018		n/a		0.0067		0.0099	
BZ-136	0.0012		0.0005		n/a		0.0005	LT	0.0029	
BZ-77, BZ-110	0.0055		0.0037		n/a		0.0093		0.0152	
BZ-82 (2,2',3,3',4-PENTACHLOROBIPHENYL)	0.0002	LT	0.0021		n/a		0.0005	LT	0.0065	

Estimated emissions mg/Kg					
	Run 1	Run 2	Run 3	Run 4	Run 5
COMPOUND	Avid	Avid	Hut	Non	Non
9582048	9582049	9582050	9582051	9582052	
mg/kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
BZ-151 (2,2',3,5,5',6-HEXACHLOROBIPHENYL)	0.0063	0.0044	n/a	0.0101	0.0179
BZ-135	0.0071	0.0008	n/a	0.0049	0.0045
BZ-107 (2,3,3',4',5-PENTACHLOROBIPHENYL)	0.0002	LT	0.0001	LT	0.0005
BZ-123, BZ-149	0.0154	0.0081	n/a	0.0186	0.0287
BZ-118	0.0083	0.0040	n/a	0.0083	0.0143
BZ-134	0.0043	0.0001	LT	n/a	0.0005
BZ-122 (2',3,3',4,5-PENTACHLOROBIPHENYL)	0.0017	0.0001	LT	n/a	0.0005
BZ-146	0.0025	0.0013	n/a	0.0030	0.0036
BZ-153	0.0039	0.0011	n/a	interfer	0.0108
BZ-132, BZ-105	0.0060	0.0013	n/a	0.0059	0.0049
BZ-141 (2,2',3,4,5,5'-HEXACHLOROBIPHENYL)	0.0029	0.0015	n/a	0.0032	0.0039
BZ-179	0.0002	LT	0.0001	LT	n/a
BZ-137	0.0002	LT	0.0001	LT	n/a
BZ-130, BZ-176	0.0002	LT	0.0001	LT	n/a
BZ-138	0.0047	0.0021	n/a	0.0074	0.0080
BZ-158	0.0012	0.0001	LT	n/a	0.0005
BZ-129	0.0002	LT	0.0004	n/a	0.0005
BZ-178	0.0047	0.0003	n/a	0.0005	LT
BZ-175	interfer	NR	interfer	NR	n/a
BZ-187	0.0043	0.0001	LT	n/a	0.0005
BZ-183	0.0002	LT	0.0036	n/a	0.0089
BZ-128	0.0022	0.0009	n/a	0.0032	0.0004
BZ-167	0.0021	0.0006	n/a	0.0005	LT
BZ-185	0.0002	LT	0.0001	LT	n/a
BZ-174	0.0026	0.0017	n/a	0.0026	0.0070
BZ-177	0.0023	0.0007	n/a	0.0015	0.0069
BZ-171, BZ-202	interfer	interfer	n/a	interfer	0.0305
BZ-156	0.0027	0.0001	LT	n/a	0.0005
BZ-173, BZ-157, IUPAC-201	0.0002	LT	0.0001	LT	n/a
BZ-172	0.0018	0.0001	LT	n/a	0.0021
BZ-197	0.0011	0.0004	n/a	0.0005	LT
BZ-180	0.0122	0.0001	LT	n/a	0.0173
BZ-193	0.0002	LT	0.0001	LT	n/a
BZ-191	0.0020	0.0007	n/a	0.0005	LT
IUPAC-200	0.0002	LT	0.0001	LT	n/a
MIREX	interfer	interfer	n/a	interfer	interfer
BZ-170, BZ-190	0.0002	LT	0.0029	n/a	0.0005
IUPAC-199	0.0023	0.0007	n/a	0.0009	0.0013
BZ-203, BZ-196	0.0038	0.0001	LT	n/a	0.0015
BZ-189	0.0043	0.0001	LT	n/a	0.0005
BZ-195	0.0031	0.0004	n/a	0.0005	LT
BZ-194	interfer	interfer	n/a	0.0028	0.0004
BZ-206	interfer	0.0001	LT	n/a	0.0005
BZ-209 (DECACHLOROBIPHENYL) (Surrogate)	0.0015	0.0010	n/a	0.0012	0.0004
BZ-14 (3,5-DICHLOROBIPHENYL)	0.1831	0.1656	n/a	0.5812	EE 0.4660
BZ-65 (2,3,5,6-TETRACHLOROBIPHENYL)	0.3571	0.3495	n/a	1.2367	0.7439
BZ-166, BZ-175	0.4301	0.4231	n/a	1.2862	1.0217
<hr/>					
su - suspicious result, analyst suggested poor confirmation					
lt - less than					
nr - not required for analysis					
ee - estimated result					
interfer - peak interference, could not quantify					

Metals

Metals							
Metals Quantities in Sample Media (filter blank or reagent blank as appropriate subtracted from all samples)							
	Run 1	Run 2	Run 3	Run 4	Run 5	Filter	
	Avid Recycler	Avid Recycler	Hut Blank	non-Recycler	non-Recycler	Blank	
metal	total ug	total ug	total ug	total ug	total ug	total ug	metal
	on filter	on filter	on filter	on filter	on filter	on filter	
Cu	40.20	17.00	0.26	1.90	0.44	0.64	Cu
Ni	1.30	<0.20	<1.24	<0.20	<0.20	1.20	Ni
Zn	50.60	7.00	<8.2	<0.80	<0.80	8.20	Zn
Pb	0.96	7.30	<0.36	0.66	0.16	0.36	Pb
Mg	8.20	<0.20	<8.8	2.80	<2.0	8.80	Mg
Al	588.00	6.80	<8.2	2.20	6.00	8.20	Al
Se	<1.00	<1.00	<1.00	<1.00	<1.00	<1	Se
Ba	<0.10	<0.10	0.64	1.09	0.65	0.20	Ba
Be	<0.04	<0.04	<0.04	<0.04	<0.04	<.04	Be
Ag	0.07	<.04	<.04	0.06	<.04	<.04	Ag
Cd	0.17	0.18	0.02	0.21	0.04	<.02	Cd
As	2.00	5.50	<0.02	3.80	0.19	<.02	As
Cr	0.54	0.54	0.32	<0.20	0.20	0.82	Cr
Hg	<0.04	<0.04	<0.02	<0.04	0.11	<.04	Hg
n/a= not analyzed							
*no data because of broken sample							

Total of Particulate Phase Metals: Filter and HNO<sub>3</sub> Rinse

Note: Where two values, one a nondetect and one a detect were totaled, the absolute values were totaled and a less than sign was applied if the non

	Run 1	Run 2	Run 3	Run 4	Run 5	Filter and	
total	Avid Recycler	Avid Recycler	Hut Blank	non-Recycler	non-Recycler	Reagent Blank	
metal*	total ug	total ug	total ug	total ug	total ug	total ug	
Cu	41.10	18.10	0.38	1.90	0.78	1.54	
Ni	2.20	0.55	<1.35	<0.20	0.34	2.10	
Zn	51.70	9.00	<10.05	<0.80	0.10	9.30	
Pb	1.12	7.52	<0.47	0.66	0.30	0.52	
Mg	8.95	<0.7	<10.7	2.80	<2.5	9.55	
Al	588.50	7.30	<21.95	2.20	6.50	22.00	
Se	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	
Ba	0.28	0.24	0.71	1.09	0.79	0.38	
Be	<0.05	<0.05	<0.05	<0.04	<0.05	<.05	
Ag	0.08	<0.05	<0.05	0.06	<0.05	<.05	
Cd	0.37	0.22	0.04	0.21	0.05	<.026	
As	2.04	5.84	0.03	3.80	0.21	<.028	
Cr	0.65	0.61	0.34	<0.20	0.24	0.93	
Hg	<0.04	<0.04	<0.02	<0.04	0.11	<.04	

\*total metal = solid metal + nitric rinse, where numbers less than detection limits were added at detection limit

Note when adding a less than quantity and an actual detected value from two fractions result reported without a less than sign

Filter blank has been subtracted from all samples including hut blank.				
EQUATIONS USED:				
Total ug/sample (filter)=(ug/l sample-ug/l blank)*0.05 l (0.1 l for Hg)*4 (1/4 filter digested)				
Total ug/sample (HNO <sub>3</sub> or HCl)=(ug/l sample-ug/l reagent blank)*0.05l (0.1 l for Hg)				

Metals

<b>Total Particulate Metals Concentration in Facility Air</b>							
mg/M3	Run 1	Run 2	Run 3	Run 4	Run 5		
metal	Avid Recycler	Avid Recycler	Hut Blank	non-Recycler	non-Recycler		
conc.	mg/M3	mg/M3	mg/M3	mg/M3	mg/M3		
Cu	0.000030	0.014982	0.000269	0.002043	0.000541		
Ni	0.000002	0.000455	<0.000143	<0.000215	0.000236		
Zn	0.000038	0.007450	<0.000573	<0.00086	0.000069		
Pb	0.000001	0.006225	<0	0.000710	0.000208		
Mg	0.000007	<0.002069	<0.00179	0.003010	<0.001734		
Al	0.000434	0.006042	<0	0.002365	0.004507		
Se	<0.001151	<0.001035	<0.000895	<0.001344	<0.000867		
Ba	0.000000	0.000199	0.000508	0.001172	0.000548		
Be	<0.000046	<0.000041	<0.000036	<0.000054	<0.000035		
Ag	0.000000	<0.000041	<0.000036	0.000065	<0.000035		
Cd	0.000000	0.000182	0.000029	0.000226	0.000035		
As	0.000002	0.004834	0.000021	0.004085	0.000146		
Cr	0.000000	0.000505	0.000240	<0.000215	0.000166		
Hg	<0.000037	<0.000033	<0.000029	<0.000043	0.000076		
<b>Total Estimated Particulate Phase Metals Emissions</b>							
	Run 1	Run 2	Run 3	Run 4	Run 5		
	Avid Recycler	Avid Recycler	Hut Blank	non-Recycler	non-Recycler		
	8/30/95	9/1/95	9/6/95	9/8/95	9/12/95		
metal	g/Kg	g/Kg	g/Kg	g/Kg	g/Kg		
Cu	0.015015	0.006176	n/a	0.002164	0.000573		
Ni	0.000804	0.000188	n/a	<0.000228	0.000250		
Zn	0.018888	0.003071	n/a	<0.000911	0.000073		
Pb	0.000409	0.002566	n/a	0.000752	0.000220		
Mg	0.003270	<0.000853	n/a	0.003189	<0.001837		
Al	0.215000	0.002491	n/a	0.002506	0.004776		
Se	<0.000457	<0.000426	n/a	<0.001424	<0.000918		
Ba	0.000102	0.000082	n/a	0.001242	0.000580		
Be	<0.000018	<0.000017	n/a	<0.000057	<0.000037		
Ag	0.000029	<0.000017	n/a	0.000068	<0.000037		
Cd	0.000135	0.000075	n/a	0.000239	0.000037		
As	0.000745	0.001993	n/a	0.004329	0.000154		
Cr	0.000237	0.000208	n/a	<0.000228	0.000176		
Hg	<0.000015	<0.000014	n/a	<0.000046	0.000081		

Metals

Metals

ESTIMATED GASEOUS MERCURY EMISSIONS (g/Kg)

Mercury							
ESTIMATED GASEOUS MERCURY EMISSIONS (g/Kg)							
				TLI Data	NYS DOH data	Total	
				Impinger	HCl	Vapor Phase	
Test	Test Conditions	DATE	RUN #	Catch	Rinse	Catch	Mass burnned
No.				ug Hg	ug Hg	< ug Hg	Kg
1	Avid Recycler	8/30/95	1	<4.00	comb.	4.0000	8.1
2	Avid Recycler	9/1/95	2	<4.00	<.1	4.1000	8.8
3	Hut Blank	9/6/95	3	<4.00	<.1	4.1000	0.0
4	Non Recycler	9/8/95	4	<4.00	0.3200	4.3200	2.6
5	Non Recycler	9/12/95	5	<4.00	<.1	4.1000	3.9
	Media Blank			<4	<.1	4.1000	na
na = not applicable							
comb = combined with impinger catch for analysis							
	Tm,1	Tm,f	Tm,avg	Pbar			dH
Test #	deg F	deg F	deg F	in Hg			
1	92.0000	96.0000	94.0000	29.6800			0.8500
2	87.0000	97.5000	92.2500	29.3600			0.8500
3	84.0000	96.0000	90.0000	29.6900			0.8500
4	83.5000	93.0000	88.2500	29.4700			0.8500
5	73.5000	87.5000	80.5000	29.8200			0.8500
moisture from r2 10ml collected							

ESTIMATED GASEOUS MERCURY EMISSIONS (g/Kg)

Estimated								
Vm, std ft3	Hg conc. ug/M3	Hg emissions < g/kg						
38.3753	3.6819	1.430E-03						
42.6854	3.3929	1.354E-03						
49.3420	2.9351	na						
32.8684	4.6426	4.758E-03						
50.9606	2.8419	2.989E-03						
na	na	na						
Impinger								
Yd	DGM,i	DGM,f	Vm	Run Time	Hg conc.	Hg det. limit	Air into hut	Mass Burnned
			ft3	min	mg/ft3	ug	CUFT/MIN	lb
1.0293	34.2940	73.6620	39.3680	70.0000	0.0001	4.00	1622.5000	18.0000
1.0293	77.2320	121.3580	44.1260	79.0000	0.0001	4.00	1622.5000	20.2000
1.0293	121.7320	171.9680	50.2360	90.0000	0.0001	4.00	1622.5000	N/A
1.0293	172.1690	205.7750	33.6060	60.0000	0.0001	4.00	1622.5000	7.0000
1.0293	205.9160	256.6820	50.7660	90.0000	0.0001	4.00	1622.5000	9.0000

## Raw Ash Data

### PCDD/PCDF, PCB, CB Method blank for ash

2,3,7,8-TETRACHLORODIBENZODIOXIN	19 PG/G	LT
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	19 PG/G	LT
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	24 PG/G	LT
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	21 PG/G	LT
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	20 PG/G	LT
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	29 PG/G	LT
OCTACHLORODIBENZODIOXIN	53 PG/G	LT
2,3,7,8-TETRACHLORODIBENZOFURAN	17 PG/G	LT
1,2,3,7,8-PENTACHLORODIBENZOFURAN	14 PG/G	LT
2,3,4,7,8-PENTACHLORODIBENZOFURAN	18 PG/G	LT
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	15 PG/G	LT
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	15 PG/G	LT
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	18 PG/G	LT
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	17 PG/G	LT
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	19 PG/G	LT
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	22 PG/G	LT
OCTACHLORODIBENZOFURAN	32 PG/G	LT
TOTAL TETRACHLORODIBENZODIOXINS	19 PG/G	LT
TOTAL PENTACHLORODIBENZODIOXINS	19 PG/G	LT
TOTAL HEXACHLORODIBENZODIOXINS	21 PG/G	LT
TOTAL HEPTACHLORODIBENZODIOXINS	29 PG/G	LT
TOTAL TETRACHLORODIBENZOFURANS	43 PG/G	
TOTAL PENTACHLORODIBENZOFURANS	14 PG/G	LT
TOTAL HEXACHLORODIBENZOFURANS	15 PG/G	LT
TOTAL HEPTACHLORODIBENZOFURANS	19 PG/G	LT
BZ-1 (2-CHLOROBIPHENYL)	2.5 NG/G	LT
BZ-2 (3-CHLOROBIPHENYL)	2.5 NG/G	LT
BZ-3 (4-CHLOROBIPHENYL)	2.5 NG/G	LT
BZ-10, BZ-4	0.5 NG/G	LT
2,4,5,6-TETRACHLORO-m-XYLENE (Surrogate)	152 NG/G	
BZ-7, BZ-9	0.5 NG/G	LT
BZ-6 (2,3'-DICHLOROBIPHENYL)	0.5 NG/G	LT
BZ-8, BZ-5	0.5 NG/G	LT
HEXAChLOROBENZENE	0.5 NG/G	LT
BZ-19 (2,2',6-TRICHLOROBIPHENYL)	INTERFER NG/G	
BZ-12 (3,4-DICHLOROBIPHENYL)(Surrogate)	0.5 NG/G	LT
BZ-18 (2,2',5-TRICHLOROBIPHENYL)	0.5 NG/G	LT
BZ-15, BZ-17	0.5 NG/G	LT
BZ-24, BZ-27	0.5 NG/G	LT
BZ-16, BZ-32	0.5 NG/G	LT
BZ-29 (2,4,5-TRICHLOROBIPHENYL)	0.5 NG/G	LT
BZ-26 (2,3',5-TRICHLOROBIPHENYL)	0.5 NG/G	LT
BZ-25 (2,3',4-TRICHLOROBIPHENYL)	0.5 NG/G	LT
BZ-31 (2,4',5-TRICHLOROBIPHENYL)	0.5 NG/G	LT
BZ-28 (2,4,4'-TRICHLOROBIPHENYL)	0.5 NG/G	LT
BZ-20, BZ-33, BZ-53	0.5 NG/G	LT
BZ-51 (2,2',4,6-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-22 (2,3,4'-TRICHLOROBIPHENYL)	0.5 NG/G	LT

## Raw Ash Data

BZ-45 (2,2',3,6-TETRACHLOROBIPHENYL)	0.5 NG/G	PL
BZ-46 (2,2',3,6'-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-39 (3,4',5-TRICHLOROBIPHENYL)	0.5 NG/G	LT
BZ-52 (2,2',5,5'-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-49 (2,2',4,5'-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-47 (2,2',4,4'-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-48 (2,2',4,5-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-44 (2,2',3,5'-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-37, BZ-42, BZ-59	0.5 NG/G	LT
BZ-41, BZ-64	0.5 NG/G	LT
BZ-40 (2,2',3,3'TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-67 (2,3',4,5-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-63, OCS	0.5 NG/G	LT
BZ-74 (2,4,4',5-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-70 (2,3',4',5-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-66, BZ-95	0.5 NG/G	LT
BZ-91 (2,2',3,4',6-PENTACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-56, BZ-60	0.5 NG/G	LT
BZ-92 (2,2',3,5,5'-PENTACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-84 (2,2',3,3',6-PENTACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-90, BZ-101	0.5 NG/G	LT
BZ-99 (2,2',4,4',5-PENTACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-119 (2,3',4,4',6-PENTACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-83 (2,2',3,3',5-PENTACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-97 (2,2',3',4,5-PENTACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-87, BZ-115	0.8 NG/G	
BZ-85, 4,4'-DDE	0.5 NG/G	LT
BZ-136	0.5 NG/G	LT
BZ-77, BZ-110	0.5 NG/G	LT
BZ-82 (2,2',3,3',4-PENTACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-151 (2,2',3,5,5',6-HEXACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-135	0.5 NG/G	LT
BZ-107 (2,3,3',4',5-PENTACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-123, BZ-149	0.5 NG/G	LT
BZ-118	0.5 NG/G	LT
BZ-134	0.5 NG/G	LT
BZ-122 (2',3,3',4,5-PENTACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-146	0.5 NG/G	LT
BZ-153	0.5 NG/G	LT
BZ-132, BZ-105	0.5 NG/G	LT
BZ-141 (2,2',3,4,5,5'-HEXACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-179	0.5 NG/G	LT
BZ-137	0.5 NG/G	LT
BZ-130, BZ-176	0.5 NG/G	LT
BZ-138	0.5 NG/G	LT
BZ-158	0.5 NG/G	LT
BZ-129	0.5 NG/G	LT
BZ-178	0.5 NG/G	LT
BZ-175	0.5 NG/G	LT

## Raw Ash Data

BZ-187	0.5 NG/G	LT
BZ-183	0.5 NG/G	LT
BZ-128	0.5 NG/G	LT
BZ-167	0.5 NG/G	LT
BZ-185	0.5 NG/G	LT
BZ-174	0.5 NG/G	LT
BZ-177	0.5 NG/G	LT
BZ-171, BZ-202	0.5 NG/G	LT
BZ-156	0.5 NG/G	LT
BZ-173, BZ-157, IUPAC-201	0.5 NG/G	LT
BZ-172	0.5 NG/G	LT
BZ-197	0.5 NG/G	LT
BZ-180	0.5 NG/G	LT
BZ-193	0.5 NG/G	LT
BZ-191	0.5 NG/G	LT
IUPAC-200	0.5 NG/G	LT
MIREX	0.5 NG/G	LT
BZ-170, BZ-190	0.5 NG/G	LT
IUPAC-199	0.5 NG/G	LT
BZ-203, BZ-196	0.5 NG/G	LT
BZ-189	0.5 NG/G	LT
BZ-195	0.5 NG/G	PL
BZ-194	0.5 NG/G	PL
BZ-206	2 NG/G	
BZ-209 (DECACHLOROBIPHENYL)(Surrogate)	154 NG/G	
BZ-14 (3,5-DICHLOROBIPHENYL)	36 NG/G	
BZ-65 (2,3,5,6-TETRACHLOROBIPHENYL)	41 NG/G	
BZ-166, BZ-175	48 NG/G	

## Raw Ash Data

### SVOC method blank for ash

ACENAPHTHENE	330 µG/KG	LT
ACENAPHTHYLENE	330 µG/KG	LT
ACETOPHENONE	330 µG/KG	LT
2-ACETYLAMINOFLUORENE	660 µG/KG	LT
ALDRIN	330 µG/KG	LT
4-AMINOBIPHENYL	660 µG/KG	LT
ANTHRACENE	330 µG/KG	LT
AROCLOR 1016	6600 µG/KG	LT
AROCLOR 1221	6600 µG/KG	LT
AROCLOR 1232	6600 µG/KG	LT
AROCLOR 1242	6600 µG/KG	LT
AROCLOR 1248	6600 µG/KG	LT
AROCLOR 1254	6600 µG/KG	LT
AROCLOR 1260	6600 µG/KG	LT
BENZO(a)ANTHRACENE	330 µG/KG	LT
BENZO(b)FLUORANTHENE	330 µG/KG	LT
BENZO(k)FLUORANTHENE	330 µG/KG	LT
BENZO(ghi)PERYLENE	3 µG/KG	J
BENZO(a)PYRENE	330 µG/KG	LT
BENZYL ALCOHOL	330 µG/KG	LT
HCH,ALPHA	2 µG/KG	LT
HCH,BETA	2 µG/KG	LT
HCH,DELTA	2 µG/KG	LT
HCH,GAMMA (LINDANE)	2 µG/KG	LT
4-BROMOPHENYL PHENYL ETHER	330 µG/KG	LT
BUTYL BENZYL PHTHALATE	330 µG/KG	LT
CHLORDANE, GAMMA ISOMER	1600 µG/KG	LT
4-CHLOROANILINE	330 µG/KG	LT
CHLOROBENZILATE	330 µG/KG	LT
BIS(2-CHLOROETHOXY)METHANE	330 µG/KG	LT
BIS(2-CHLOROETHYL)ETHER	330 µG/KG	LT
BIS(2-CHLOROISOPROPYL)ETHER	330 µG/KG	LT
4-CHLORO-3-METHYLPHENOL	330 µG/KG	LT
2-CHLORONAPHTHALENE	330 µG/KG	LT
2-CHLOROPHENOL	330 µG/KG	LT
4-CHLOROPHENYL PHENYL ETHER	330 µG/KG	LT
CHRYSENE	330 µG/KG	LT
4,4'-DDD	330 µG/KG	LT
4,4'-DDE	330 µG/KG	LT
4,4'-DDT	3 µG/KG	LT
DIALLATE	330 µG/KG	LT
DIBENZOFURAN	330 µG/KG	LT
DIBENZ(A,H)ANTHRACENE	2 µG/KG	J
DI-N-BUTYL PHTHALATE	2 µG/KG	J
1,2-DICHLOROBENZENE	330 µG/KG	LT
1,3-DICHLOROBENZENE	330 µG/KG	LT
1,4-DICHLOROBENZENE	330 µG/KG	LT
3,3'-DICHLOROBENZIDINE	330 µG/KG	LT

## Raw Ash Data

2,4-DICHLOROPHENOL	330 µG/KG	LT
2,6-DICHLOROPHENOL	330 µG/KG	LT
DIELDRIN	3 µG/KG	LT
DIETHYLPHthalATE	330 µG/KG	LT
DIMETHOATE	660 µG/KG	LT
DIMETHYLPHthalATE	330 µG/KG	LT
P-DIMETHYLAMINO-AZOBENZENE	660 µG/KG	LT
3,3'-DIMETHYLBENZIDINE	330 µG/KG	LT
7,12-DIMETHYLBenz(A)ANTHRACENE	330 µG/KG	LT
2,4-DIMETHYLPHENOL	330 µG/KG	LT
1,3-DINITROBENZENE	330 µG/KG	LT
2-METHYL-4,6-DINITROPHENOL	1600 µG/KG	LT
2,4-DINITROPHENOL	1600 µG/KG	LT
2,4-DINITROTOLUENE	330 µG/KG	LT
2,6-DINITROTOLUENE	330 µG/KG	LT
DIPHENYLAMINE	660 µG/KG	LT
DISULFOTON (Di-Syston)	330 µG/KG	LT
ENDOSULFAN I	660 µG/KG	LT
ENDOSULFAN II	330 µG/KG	LT
ENDOSULFAN SULFATE	330 µG/KG	LT
ENDRIN	330 µG/KG	LT
ENDRIN ALDEHYDE	330 µG/KG	LT
ETHYL METHANESULFONATE	660 µG/KG	LT
BIS(2-ETHYLHEXYL)PHTHALATE	14 µG/KG	J
FAMPHUR	660 µG/KG	LT
FLUORANTHENE	330 µG/KG	LT
FLUORENE	330 µG/KG	LT
HEPTACHLOR	330 µG/KG	LT
HEPTACHLOR EPOXIDE	330 µG/KG	LT
HEXACHLOROBENZENE	330 µG/KG	LT
HEXACHLOROBUTADIENE (C-46)	330 µG/KG	LT
HEXACHLOROCYCLOPENTADIENE (C-56)	330 µG/KG	LT
HEXACHLOROETHANE	330 µG/KG	LT
HEXACHLOROPROPENE	330 µG/KG	LT
INDENO(1,2,3-cd)PYRENE	2 µG/KG	J
ISODRIN	660 µG/KG	LT
ISOPHORONE	330 µG/KG	LT
ISOSAFROLE	330 µG/KG	LT
KEPONE	660 µG/KG	LT
METHAPYRILENE	3300 µG/KG	LT
METHOXYCHLOR	330 µG/KG	LT
METHYL METHANESULFONATE	330 µG/KG	LT
METHYL PARATHION	330 µG/KG	LT
3-METHYLCHOLANTHRENE	330 µG/KG	LT
2-METHYLNAPHTHALENE	330 µG/KG	LT
2-METHYL PHENOL	330 µG/KG	LT
3- OR 4-METHYLPHENOL	330 µG/KG	LT
NAPHTHALENE	330 µG/KG	LT
1,4-NAPHTHOQUINONE	330 µG/KG	LT

## Raw Ash Data

1-NAPHTHYLAMINE	330 µG/KG	LT
2-NAPHTHYLAMINE	330 µG/KG	LT
2-NITROANILINE	1600 µG/KG	LT
3-NITROANILINE	1600 µG/KG	LT
4-NITROANILINE	660 µG/KG	LT
NITROBENZENE	330 µG/KG	LT
2-NITROPHENOL	330 µG/KG	LT
4-NITROPHENOL	1600 µG/KG	LT
N-NITROSODIETHYLAMINE	9900 µG/KG	LT
N-NITROSOSDIMETHYLAMINE	66 µG/KG	LT
N-NITROSODIPHENYLAMINE	160 µG/KG	LT
N-NITROSODI-N-BUTYLAMINE	330 µG/KG	LT
N-NITROSOMETHYL-ETHYLAMINE	330 µG/KG	LT
N-NITROSOPIPERIDINE	6600 µG/KG	LT
N-NITROSO-DI-N-PROPYLAMINE	330 µG/KG	LT
N-NITROSYRROLIDINE	330 µG/KG	LT
5-NITRO-O-TOLUIDINE	330 µG/KG	LT
DI-N-OCTYL PHTHALATE	330 µG/KG	LT
PARATHION, ETHYL	330 µG/KG	LT
PENTACHLOROBENZENE	330 µG/KG	LT
PENTACHLORONITROBENZENE	330 µG/KG	LT
PENTACHLOROPHENOL	1600 µG/KG	LT
PHENACETIN	660 µG/KG	LT
PHENANTHRENE	330 µG/KG	LT
PHENOL	330 µG/KG	LT
P-PHENYLENEDIAMINE	330 µG/KG	LT
PHORATE	330 µG/KG	LT
PRONAMIDE	330 µG/KG	LT
PYRENE	330 µG/KG	LT
SAFROLE	330 µG/KG	LT
1,2,4,5-TETRACHLOROBENZENE	330 µG/KG	LT
2,3,4,6-TETRACHLOROPHENOL	330 µG/KG	LT
THIONAZIN	330 µG/KG	LT
O-TOLUIDINE	330 µG/KG	LT
TOXAPHENE	66 µG/KG	LT
1,2,4-TRICHLOROBENZENE	330 µG/KG	LT
2,4,5-TRICHLOROPHENOL	820 µG/KG	LT
2,4,6-TRICHLOROPHENOL	330 µG/KG	LT
PYRIDINE	3300 µG/KG	LT
ALPHA-PICOLINE	3300 µG/KG	LT
ANILINE	330 µG/KG	LT
BENZIDINE	1600 µG/KG	LT
ENDRIN KETONE	33 µG/KG	LT
1,3,5-TRINITROBENZENE	330 µG/KG	LT
4-NITROQUINOLINE 1-OXIDE	1200 µG/KG	LT
CHLORDANE, ALPHA ISOMER	1600 µG/KG	LT

## Raw Ash Data

### Composite Ash for Avid Recycler

2,3,7,8-TETRACHLORODIBENZODIOXIN	31	PG/G
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	230	PG/G
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	270	PG/G
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	420	PG/G
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	300	PG/G
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	4000	PG/G
OCTACHLORODIBENZODIOXIN	9600	PG/G
2,3,7,8-TETRACHLORODIBENZOFURAN	830	PG/G
1,2,3,7,8-PENTACHLORODIBENZOFURAN	1000	PG/G
2,3,4,7,8-PENTACHLORODIBENZOFURAN	2500	PG/G
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	2300	PG/G
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	2100	PG/G
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	2900	PG/G
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	810	PG/G
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	12000	PG/G
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	1400	PG/G
OCTACHLORODIBENZOFURAN	8200	PG/G
TOTAL TETRACHLORODIBENZODIOXINS	2500	PG/G
TOTAL PENTACHLORODIBENZODIOXINS	4100	PG/G
TOTAL HEXACHLORODIBENZODIOXINS	5600	PG/G
TOTAL HEPTACHLORODIBENZODIOXINS	7600	PG/G
TOTAL TETRACHLORODIBENZOFURANS	25000	PG/G
TOTAL PENTACHLORODIBENZOFURANS	21000	PG/G
TOTAL HEXACHLORODIBENZOFURANS	19000	PG/G
TOTAL HEPTACHLORODIBENZOFURANS	17000	PG/G
BZ-1 (2-CHLOROBIPHENYL)	2.5	NG/G
BZ-2 (3-CHLOROBIPHENYL)	43	NG/G
BZ-3 (4-CHLOROBIPHENYL)	2.5	NG/G
BZ-10, BZ-4	0.5	NG/G
2,4,5,6-TETRACHLORO-m-XYLENE (Surrogate)	132	NG/G
BZ-7, BZ-9	2.1	NG/G
BZ-6 (2,3'-DICHLOROBIPHENYL)	3.7	NG/G
BZ-8, BZ-5	5.4	NG/G
HEXACHLOROBENZENE	135	NG/G
BZ-19 (2,2',6-TRICHLOROBIPHENYL)	0.5	NG/G
BZ-12 (3,4-DICHLOROBIPHENYL)(Surrogate)	6.6	NG/G
BZ-18 (2,2',5-TRICHLOROBIPHENYL)	32	NG/G
BZ-15, BZ-17	0.5	NG/G
BZ-24, BZ-27	12	NG/G
BZ-16, BZ-32	0.5	NG/G
BZ-29 (2,4,5-TRICHLOROBIPHENYL)	0.5	NG/G
BZ-26 (2,3',5-TRICHLOROBIPHENYL)	0.8	NG/G
BZ-25 (2,3',4-TRICHLOROBIPHENYL)	0.5	NG/G
BZ-31 (2,4',5-TRICHLOROBIPHENYL)	1.5	NG/G
BZ-28 (2,4,4'-TRICHLOROBIPHENYL)	0.5	NG/G
BZ-20, BZ-33, BZ-53	2.2	NG/G
BZ-51 (2,2',4,6'-TETRACHLOROBIPHENYL)	0.5	NG/G

## Raw Ash Data

BZ-22 (2,3,4'-TRICHLOROBIPHENYL)		0.5 NG/G
BZ-45 (2,2',3,6-TETRACHLOROBIPHENYL)		5.3 NG/G
BZ-46 (2,2',3,6'-TETRACHLOROBIPHENYL)		0.5 NG/G
BZ-39 (3,4',5-TRICHLOROBIPHENYL)		0.5 NG/G
BZ-52 (2,2',5,5'-TETRACHLOROBIPHENYL)		3.1 NG/G
BZ-49 (2,2',4,5'-TETRACHLOROBIPHENYL)		0.5 NG/G
BZ-47 (2,2',4,4'-TETRACHLOROBIPHENYL)		0.5 NG/G
BZ-48 (2,2',4,5-TETRACHLOROBIPHENYL)		0.5 NG/G
BZ-44 (2,2',3,5'-TETRACHLOROBIPHENYL)		2.6 NG/G
BZ-37, BZ-42, BZ-59		1.8 NG/G
BZ-41, BZ-64		1.8 NG/G
BZ-40 (2,2',3,3'TETRACHLOROBIPHENYL)	INTERFER	NG/G
BZ-67 (2,3',4,5-TETRACHLOROBIPHENYL)		0.5 NG/G
BZ-63, OCS		1.8 NG/G
BZ-74 (2,4,4',5-TETRACHLOROBIPHENYL)		0.5 NG/G
BZ-70 (2,3',4',5-TETRACHLOROBIPHENYL)		0.5 NG/G
BZ-66, BZ-95		1 NG/G
BZ-91 (2,2',3,4',6-PENTACHLOROBIPHENYL)		0.5 NG/G
BZ-56, BZ-60		1.6 NG/G
BZ-92 (2,2',3,5,5'-PENTACHLOROBIPHENYL)		0.5 NG/G
BZ-84 (2,2',3,3',6-PENTACHLOROBIPHENYL)		0.5 NG/G
BZ-90, BZ-101		0.5 NG/G
BZ-99 (2,2',4,4',5-PENTACHLOROBIPHENYL)		3.4 NG/G
BZ-119 (2,3',4,4',6-PENTACHLOROBIPHENYL)		0.5 NG/G
BZ-83 (2,2',3,3',5-PENTACHLOROBIPHENYL)		0.4 NG/G
BZ-97 (2,2',3',4,5-PENTACHLOROBIPHENYL)		2.2 NG/G
BZ-87, BZ-115		1.5 NG/G
BZ-85, 4,4'-DDE		0.5 NG/G
BZ-136		0.5 NG/G
BZ-77, BZ-110		1.2 NG/G
BZ-82 (2,2',3,3',4-PENTACHLOROBIPHENYL)		1.1 NG/G
BZ-151 (2,2',3,5,5',6-HEXACHLOROBIPHENYL)		0.5 NG/G
BZ-135		0.5 NG/G
BZ-107 (2,3,3',4',5-PENTACHLOROBIPHENYL)		0.5 NG/G
BZ-123, BZ-149		0.5 NG/G
BZ-118		0.7 NG/G
BZ-134		0.5 NG/G
BZ-122 (2',3,3',4,5-PENTACHLOROBIPHENYL)		0.5 NG/G
BZ-146		0.5 NG/G
BZ-153		0.5 NG/G
BZ-132, BZ-105		3.4 NG/G
BZ-141 (2,2',3,4,5,5'-HEXACHLOROBIPHENYL)		1.2 NG/G
BZ-179		0.5 NG/G
BZ-137		0.5 NG/G
BZ-130, BZ-176		0.5 NG/G
BZ-138		0.5 NG/G
BZ-158		0.5 NG/G
BZ-129		0.5 NG/G
BZ-178		1.7 NG/G

## Raw Ash Data

BZ-175	41	NG/G	
BZ-187	0.5	NG/G	LT
BZ-183	1.8	NG/G	
BZ-128	0.5	NG/G	LT
BZ-167	0.5	NG/G	PL
BZ-185	0.5	NG/G	LT
BZ-174	0.5	NG/G	LT
BZ-177	0.5	NG/G	LT
BZ-171, BZ-202	0.5	NG/G	LT
BZ-156	0.7	NG/G	
BZ-173, BZ-157, IUPAC-201	0.9	NG/G	
BZ-172	0.5	NG/G	LT
BZ-197	0.5	NG/G	LT
BZ-180	0.5	NG/G	LT
BZ-193	0.5	NG/G	LT
BZ-191	0.5	NG/G	LT
IUPAC-200	0.5	NG/G	LT
MIREX	0.5	NG/G	LT
BZ-170, BZ-190	2.5	NG/G	
IUPAC-199	0.5	NG/G	LT
BZ-203, BZ-196	1.6	NG/G	
BZ-189	0.6	NG/G	
BZ-195	1.1	NG/G	
BZ-194	1.4	NG/G	
BZ-206	2.8	NG/G	
BZ-209 (DECACHLOROBIPHENYL)(Surrogate)	131	NG/G	
PICES (Surrogates)		NG/G	
BZ-14 (3,5-DICHLOROBIPHENYL)	38	NG/G	
BZ-65 (2,3,5,6-TETRACHLOROBIPHENYL)	42	NG/G	
BZ-166, BZ-175	41	NG/G	
SOLIDS, DRY		PERCENT	NR
ACENAPHTHENE	5000	µG/KG	LT
ACENAPHTHYLENE	5000	µG/KG	LT
ACETOPHENONE	480	µG/KG	J
2-ACETYLAMINOFLUORENE	9900	µG/KG	LT
ALDRIN	5000	µG/KG	LT
4-AMINOBIPHENYL	9900	µG/KG	LT
ANTHRACENE	5000	µG/KG	LT
AROCLOR 1016	99000	µG/KG	LT
AROCLOR 1221	99000	µG/KG	LT
AROCLOR 1232	99000	µG/KG	LT
AROCLOR 1242	99000	µG/KG	LT
AROCLOR 1248	99000	µG/KG	LT
AROCLOR 1254	99000	µG/KG	LT
AROCLOR 1260	99000	µG/KG	LT
BENZO(a)ANTHRACENE	62	µG/KG	J
BENZO(b)FLUORANTHENE	78	µG/KG	J
BENZO(k)FLUORANTHENE	110	µG/KG	J
BENZO(ghi)PERYLENE	120	µG/KG	BJ

## Raw Ash Data

BENZO(a)PYRENE	78 µG/KG	J
BENZYL ALCOHOL	5000 µG/KG	LT
HCH,ALPHA	26 µG/KG	LT
HCH,BETA	26 µG/KG	LT
HCH,DELTA	26 µG/KG	LT
HCH,GAMMA (LINDANE)	26 µG/KG	LT
4-BROMOPHENYL PHENYL ETHER	5000 µG/KG	LT
BUTYL BENZYL PHTHALATE	110 µG/KG	J
CHLORDANE, GAMMA ISOMER	24000 µG/KG	LT
4-CHLOROANILINE	5000 µG/KG	LT
CHLOROBENZILATE	5000 µG/KG	LT
BIS(2-CHLOROETHOXY)METHANE	5000 µG/KG	LT
BIS(2-CHLOROETHYL)ETHER	5000 µG/KG	LT
BIS(2-CHLOROISOPROPYL)ETHER	5000 µG/KG	LT
4-CHLORO-3-METHYLPHENOL	5000 µG/KG	LT
2-CHLORONAPHTHALENE	5000 µG/KG	LT
2-CHLOROPHENOL	5000 µG/KG	LT
4-CHLOROPHENYL PHENYL ETHER	5000 µG/KG	LT
CHRYSENE	76 µG/KG	J
4,4'-DDD	5000 µG/KG	LT
4,4'-DDE	5000 µG/KG	LT
4,4'-DDT	50 µG/KG	LT
DIALLATE	5000 µG/KG	LT
DIBENZOFURAN	170 µG/KG	J
DIBENZ(A,H)ANTHRACENE	120 µG/KG	BJ
DI-N-BUTYL PHTHALATE	160 µG/KG	BJ
1,2-DICHLOROBENZENE	190 µG/KG	J
1,3-DICHLOROBENZENE	88 µG/KG	J
1,4-DICHLOROBENZENE	54 µG/KG	J
3,3'-DICHLOROBENZIDINE	5000 µG/KG	LT
2,4-DICHLOROPHENOL	92 µG/KG	J
2,6-DICHLOROPHENOL	5000 µG/KG	LT
DIELDRIN	50 µG/KG	LT
DIETHYLPHthalate	110 µG/KG	J
DIMETHOATE	9900 µG/KG	LT
DIMETHYLPHthalate	5000 µG/KG	LT
P-DIMETHYLAMINO-AZOBENZENE	9900 µG/KG	LT
3,3'-DIMETHYLBENZIDINE	5000 µG/KG	LT
7,12-DIMETHYLBenz(A)ANTHRACENE	5000 µG/KG	LT
2,4-DIMETHYLPHENOL	5000 µG/KG	LT
1,3-DINITROBENZENE	5000 µG/KG	LT
2-METHYL-4,6-DINITROPHENOL	25000 µG/KG	LT
2,4-DINITROPHENOL	25000 µG/KG	LT
2,4-DINITROTOLUENE	5000 µG/KG	LT
2,6-DINITROTOLUENE	5000 µG/KG	LT
DIPHENYLAMINE	9900 µG/KG	LT
DISULFOTON (Di-Syston)	5000 µG/KG	LT
ENDOSULFAN I	9900 µG/KG	LT
ENDOSULFAN II	5000 µG/KG	LT

## Raw Ash Data

ENDOSULFAN SULFATE	5000 µG/KG	LT
ENDRIN	5000 µG/KG	LT
ENDRIN ALDEHYDE	5000 µG/KG	LT
ETHYL METHANESULFONATE	9900 µG/KG	LT
BIS(2-ETHYLHEXYL)PHTHALATE	360 µG/KG	BJ
FAMPHUR	9900 µG/KG	LT
FLUORANTHENE	68 µG/KG	J
FLUORENE	78 µG/KG	J
HEPTACHLOR	5000 µG/KG	LT
HEPTACHLOR EPOXIDE	5000 µG/KG	LT
HEXACHLOROBENZENE	170 µG/KG	J
HEXACHLOROBUTADIENE (C-46)	5000 µG/KG	LT
HEXACHLOROCYCLOPENTADIENE (C-56)	5000 µG/KG	LT
HEXACHLOROETHANE	5000 µG/KG	LT
HEXACHLOROPROPENE	5000 µG/KG	LT
INDENO(1,2,3-cd)PYRENE	140 µG/KG	BJ
ISODRIN	9900 µG/KG	LT
ISOPHORONE	5000 µG/KG	LT
ISOSAFROLE	5000 µG/KG	LT
KEPONE	9900 µG/KG	LT
METHAPYRILENE	50000 µG/KG	LT
METHOXYCHLOR	5000 µG/KG	LT
METHYL METHANESULFONATE	5000 µG/KG	LT
METHYL PARATHION	5000 µG/KG	LT
3-METHYLCHOLANTHRENE	5000 µG/KG	LT
2-METHYLNAPHTHALENE	160 µG/KG	J
2-METHYL PHENOL	120 µG/KG	J
3- OR 4-METHYLPHENOL	5000 µG/KG	LT
NAPHTHALENE	650 µG/KG	J
1,4-NAPHTHOQUINONE	5000 µG/KG	LT
1-NAPHTHYLAMINE	5000 µG/KG	LT
2-NAPHTHYLAMINE	5000 µG/KG	LT
2-NITROANILINE	25000 µG/KG	LT
3-NITROANILINE	25000 µG/KG	LT
4-NITROANILINE	9900 µG/KG	LT
NITROBENZENE	5000 µG/KG	LT
2-NITROPHENOL	5000 µG/KG	LT
4-NITROPHENOL	25000 µG/KG	LT
N-NITROSODIETHYLAMINE	660 µG/KG	LT
N-NITROSOSDIMETHYLAMINE	990 µG/KG	LT
N-NITROSODIPHENYLAMINE	2500 µG/KG	LT
N-NITROSODI-N-BUTYLAMINE	5000 µG/KG	LT
N-NITROSOMETHYL-ETHYLAMINE	5000 µG/KG	LT
N-NITROSOPIPERIDINE	99000 µG/KG	LT
N-NITROSO-DI-N-PROPYLAMINE	5000 µG/KG	LT
N-NITROSO PYRROLIDINE	5000 µG/KG	LT
5-NITRO-O-TOLUIDINE	5000 µG/KG	LT
DI-N-OCTYL PHTHALATE	55 µG/KG	J
PARATHION, ETHYL	5000 µG/KG	LT

## Raw Ash Data

PENTACHLOROBENZENE	290 µG/KG	J
PENTACHLORONITROBENZENE	5000 µG/KG	LT
PENTACHLOROPHENOL	25000 µG/KG	LT
PHENACETIN	9900 µG/KG	LT
PHENANTHRENE	290 µG/KG	J
PHENOL	5000 µG/KG	LT
P-PHENYLENEDIAMINE	5000 µG/KG	LT
PHORATE	5000 µG/KG	LT
PRONAMIDE	5000 µG/KG	LT
PYRENE	76 µG/KG	J
SAFROLE	5000 µG/KG	LT
1,2,4,5-TETRACHLOROBENZENE	140 µG/KG	J
2,3,4,6-TETRACHLOROPHENOL	5000 µG/KG	LT
THIONAZIN	5000 µG/KG	LT
O-TOLUIDINE	5000 µG/KG	LT
TOXAPHENE	990 µG/KG	LT
1,2,4-TRICHLOROBENZENE	120 µG/KG	J
2,4,5-TRICHLOROPHENOL	54 µG/KG	J
2,4,6-TRICHLOROPHENOL	170 µG/KG	J
SOLIDS, DRY	93 PERCENT	
ARSENIC IN DRY SOLIDS	310 MG/KG	
SELENIUM IN DRY SOLIDS	1 MG/KG	LT
MERCURY IN DRY SOLIDS	0.11 MG/KG	LT
BERYLLIUM IN DRY SOLIDS	1 MG/KG	
SILVER IN DRY SOLIDS	25 MG/KG	
BARIUM IN DRY SOLIDS	187 MG/KG	
CADMIUM IN DRY SOLIDS	3 MG/KG	LT
COBALT IN DRY SOLIDS	12 MG/KG	
CHROMIUM IN DRY SOLIDS	286 MG/KG	
COPPER IN DRY SOLIDS	3780 MG/KG	
IRON IN DRY SOLIDS	4390 MG/KG	
MANGANESE IN DRY SOLIDS	525 MG/KG	
NICKEL IN DRY SOLIDS	18 MG/KG	
STRONTIUM IN DRY SOLIDS	104 MG/KG	
TITANIUM IN DRY SOLIDS	716 MG/KG	
VANADIUM IN DRY SOLIDS	35 MG/KG	
ZINC IN DRY SOLIDS	10900 MG/KG	
MOLYBDENUM IN DRY SOLIDS	17 MG/KG	LT
LEAD IN DRY SOLIDS	168 MG/KG	
ANTIMONY IN DRY SOLIDS	MG/KG	NR
TIN IN DRY SOLIDS	226 MG/KG	
THALLIUM IN DRY SOLIDS	MG/KG	NR
ALUMINUM IN DRY SOLIDS	92900 MG/KG	
CALCIUM IN DRY SOLIDS	97400 MG/KG	
POTASSIUM IN DRY SOLIDS	5050 MG/KG	
MAGNESIUM IN DRY SOLIDS	2860 MG/KG	
SODIUM IN DRY SOLIDS	5400 MG/KG	
PYRIDINE	870 µG/KG	J
ALPHA-PICOLINE	190 µG/KG	J

## **Raw Ash Data**

ANILINE	5000 µG/KG	LT
BENZIDINE	24000 µG/KG	LT
ENDRIN KETONE	500 µG/KG	LT
1,3,5-TRINITROBENZENE	5000 µG/KG	LT
4-NITROQUINOLINE 1-OXIDE	18000 µG/KG	LT
CHLORDANE, ALPHA ISOMER	24000 µG/KG	LT

## Raw Ash Data

### Composite Ash for Non-recycler

2,3,7,8-TETRACHLORODIBENZODIOXIN	9	PG/G
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	53	PG/G
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	44	PG/G
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	74	PG/G
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	56	PG/G
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	630	PG/G
OCTACHLORODIBENZODIOXIN	690	PG/G
2,3,7,8-TETRACHLORODIBENZOFURAN	220	PG/G
1,2,3,7,8-PENTACHLORODIBENZOFURAN	270	PG/G
2,3,4,7,8-PENTACHLORODIBENZOFURAN	690	PG/G
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	480	PG/G
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	490	PG/G
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	670	PG/G
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	150	PG/G
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	2100	PG/G
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	170	PG/G
OCTACHLORODIBENZOFURAN	560	PG/G
TOTAL TETRACHLORODIBENZODIOXINS	490	PG/G
TOTAL PENTACHLORODIBENZODIOXINS	740	PG/G
TOTAL HEXACHLORODIBENZODIOXINS	1300	PG/G
TOTAL HEPTACHLORODIBENZODIOXINS	1300	PG/G
TOTAL TETRACHLORODIBENZOFURANS	8200	PG/G
TOTAL PENTACHLORODIBENZOFURANS	6600	PG/G
TOTAL HEXACHLORODIBENZOFURANS	4600	PG/G
TOTAL HEPTACHLORODIBENZOFURANS	2900	PG/G
BZ-1 (2-CHLOROBIPHENYL)	4.9	NG/G
BZ-2 (3-CHLOROBIPHENYL)	42	NG/G
BZ-3 (4-CHLOROBIPHENYL)	22	NG/G
BZ-10, BZ-4	0.5	NG/G
2,4,5,6-TETRACHLORO-m-XYLENE (Surrogate)	161	NG/G
BZ-7, BZ-9	2.1	NG/G
BZ-6 (2,3'-DICHLOROBIPHENYL)	4.7	NG/G
BZ-8, BZ-5	3.8	NG/G
HEXACHLOROBENZENE	18	NG/G
BZ-19 (2,2',6-TRICHLOROBIPHENYL)	5.6	NG/G
BZ-12 (3,4-DICHLOROBIPHENYL)(Surrogate)	7.4	NG/G
BZ-18 (2,2',5-TRICHLOROBIPHENYL)	6.3	NG/G
BZ-15, BZ-17	0.5	NG/G
BZ-24, BZ-27	0.5	NG/G
BZ-16, BZ-32	0.5	NG/G
BZ-29 (2,4,5-TRICHLOROBIPHENYL)	0.5	NG/G
BZ-26 (2,3',5-TRICHLOROBIPHENYL)	0.8	NG/G
BZ-25 (2,3',4-TRICHLOROBIPHENYL)	0.7	NG/G
BZ-31 (2,4',5-TRICHLOROBIPHENYL)	0.9	NG/G
BZ-28 (2,4,4'-TRICHLOROBIPHENYL)	0.5	NG/G
BZ-20, BZ-33, BZ-53	0.9	NG/G
BZ-51 (2,2',4,6-TETRACHLOROBIPHENYL)	1.5	NG/G
BZ-22 (2,3,4'-TRICHLOROBIPHENYL)	0.5	NG/G
		PL

## Raw Ash Data

BZ-45 (2,2',3,6-TETRACHLOROBIPHENYL)	1.3	NG/G
BZ-46 (2,2',3,6'-TETRACHLOROBIPHENYL)	0.5	NG/G
BZ-39 (3,4',5-TRICHLOROBIPHENYL)	0.5	NG/G
BZ-52 (2,2',5,5'-TETRACHLOROBIPHENYL)	1.8	NG/G
BZ-49 (2,2',4,5'-TETRACHLOROBIPHENYL)	0.5	NG/G
BZ-47 (2,2',4,4'-TETRACHLOROBIPHENYL)	0.5	NG/G
BZ-48 (2,2',4,5-TETRACHLOROBIPHENYL)	0.5	NG/G
BZ-44 (2,2',3,5'-TETRACHLOROBIPHENYL)	1.2	NG/G
BZ-37, BZ-42, BZ-59	1.7	NG/G
BZ-41, BZ-64	0.5	NG/G
BZ-40 (2,2',3,3'TETRACHLOROBIPHENYL)	17	NG/G
BZ-67 (2,3',4,5-TETRACHLOROBIPHENYL)	0.5	NG/G
BZ-63, OCS	0.5	NG/G
BZ-74 (2,4,4',5-TETRACHLOROBIPHENYL)	0.5	NG/G
BZ-70 (2,3',4',5-TETRACHLOROBIPHENYL)	0.5	NG/G
BZ-66, BZ-95	0.8	NG/G
BZ-91 (2,2',3,4',6-PENTACHLOROBIPHENYL)	0.5	NG/G
BZ-56, BZ-60	2.1	NG/G
BZ-92 (2,2',3,5,5'-PENTACHLOROBIPHENYL)	0.5	NG/G
BZ-84 (2,2',3,3',6-PENTACHLOROBIPHENYL)	0.5	NG/G
BZ-90, BZ-101	0.5	NG/G
BZ-99 (2,2',4,4',5-PENTACHLOROBIPHENYL)	1.3	NG/G
BZ-119 (2,3',4,4',6-PENTACHLOROBIPHENYL)	0.5	NG/G
BZ-83 (2,2',3,3',5-PENTACHLOROBIPHENYL)	0.5	NG/G
BZ-97 (2,2',3',4,5-PENTACHLOROBIPHENYL)	0.5	NG/G
BZ-87, BZ-115	1.9	NG/G
BZ-85, 4,4'-DDE	0.5	NG/G
BZ-136	0.5	NG/G
BZ-77, BZ-110	1	NG/G
BZ-82 (2,2',3,3',4-PENTACHLOROBIPHENYL)	0.5	NG/G
BZ-151 (2,2',3,5,5',6-HEXACHLOROBIPHENYL)	0.5	NG/G
BZ-135	0.5	NG/G
BZ-107 (2,3,3',4',5-PENTACHLOROBIPHENYL)	0.5	NG/G
BZ-123, BZ-149	0.5	NG/G
BZ-118	0.5	NG/G
BZ-134	0.5	NG/G
BZ-122 (2',3,3',4,5-PENTACHLOROBIPHENYL)	0.5	NG/G
BZ-146	0.5	NG/G
BZ-153	0.5	NG/G
BZ-132, BZ-105	3.5	NG/G
BZ-141 (2,2',3,4,5,5'-HEXACHLOROBIPHENYL)	0.5	NG/G
BZ-179	0.5	NG/G
BZ-137	0.5	NG/G
BZ-130, BZ-176	0.5	NG/G
BZ-138	0.5	NG/G
BZ-158	0.5	NG/G
BZ-129	0.5	NG/G
BZ-178	0.7	NG/G
BZ-175	47	NG/G

## Raw Ash Data

BZ-187	0.5 NG/G	LT
BZ-183	1.8 NG/G	
BZ-128	0.5 NG/G	LT
BZ-167	0.5 NG/G	PL
BZ-185	0.5 NG/G	LT
BZ-174	0.5 NG/G	LT
BZ-177	0.5 NG/G	LT
BZ-171, BZ-202	0.5 NG/G	LT
BZ-156	0.5 NG/G	LT
BZ-173, BZ-157, IUPAC-201	0.5 NG/G	PL
BZ-172	0.5 NG/G	PL
BZ-197	0.5 NG/G	LT
BZ-180	1.1 NG/G	
BZ-193	0.5 NG/G	LT
BZ-191	0.5 NG/G	LT
IUPAC-200	0.5 NG/G	LT
MIREX	0.5 NG/G	LT
BZ-170, BZ-190	0.5 NG/G	PL
IUPAC-199	0.5 NG/G	LT
BZ-203, BZ-196	0.5 NG/G	LT
BZ-189	0.5 NG/G	LT
BZ-195	0.6 NG/G	
BZ-194	0.6 NG/G	
BZ-206	3.4 NG/G	
BZ-209 (DECACHLOROBIPHENYL)(Surrogate)	144 NG/G	
PICES (Surrogates)	NG/G	
BZ-14 (3,5-DICHLOROBIPHENYL)	40 NG/G	
BZ-65 (2,3,5,6-TETRACHLOROBIPHENYL)	47 NG/G	
BZ-166, BZ-175	47 NG/G	
SOLIDS, DRY	PERCENT	NR
ACENAPHTHENE	5000 µG/KG	LT
ACENAPHTHYLENE	61 µG/KG	J
ACETOPHENONE	1400 µG/KG	J
2-ACETYLAMINOFLUORENE	9900 µG/KG	LT
ALDRIN	5000 µG/KG	LT
4-AMINOBIPHENYL	9900 µG/KG	LT
ANTHRACENE	80 µG/KG	J
AROCLOR 1016	99000 µG/KG	LT
AROCLOR 1221	99000 µG/KG	LT
AROCLOR 1232	99000 µG/KG	LT
AROCLOR 1242	99000 µG/KG	LT
AROCLOR 1248	99000 µG/KG	LT
AROCLOR 1254	99000 µG/KG	LT
AROCLOR 1260	99000 µG/KG	LT
BENZO(a)ANTHRACENE	94 µG/KG	J
BENZO(b)FLUORANTHENE	5000 µG/KG	LT
BENZO(k)FLUORANTHENE	5000 µG/KG	LT
BENZO(ghi)PERYLENE	160 µG/KG	BJ
BENZO(a)PYRENE	5000 µG/KG	LT

## Raw Ash Data

BENZYL ALCOHOL	5000 µG/KG	LT
HCH,ALPHA	26 µG/KG	LT
HCH,BETA	26 µG/KG	LT
HCH,DELTA	26 µG/KG	LT
HCH,GAMMA (LINDANE)	26 µG/KG	LT
4-BROMOPHENYL PHENYL ETHER	5000 µG/KG	LT
BUTYL BENZYL PHTHALATE	5000 µG/KG	LT
CHLORDANE, GAMMA ISOMER	24000 µG/KG	LT
4-CHLOROANILINE	5000 µG/KG	LT
CHLOROBENZILATE	5000 µG/KG	LT
BIS(2-CHLOROETHOXY)METHANE	5000 µG/KG	LT
BIS(2-CHLOROETHYL)ETHER	5000 µG/KG	LT
BIS(2-CHLOROISOPROPYL)ETHER	5000 µG/KG	LT
4-CHLORO-3-METHYLPHENOL	5000 µG/KG	LT
2-CHLORONAPHTHALENE	5000 µG/KG	LT
2-CHLOROPHENOL	5000 µG/KG	LT
4-CHLOROPHENYL PHENYL ETHER	5000 µG/KG	LT
CHRYSENE	220 µG/KG	J
4,4'-DDD	5000 µG/KG	LT
4,4'-DDE	5000 µG/KG	LT
4,4'-DDT	50 µG/KG	LT
DIALLATE	5000 µG/KG	LT
DIBENZOFURAN	350 µG/KG	J
DIBENZ(A,H)ANTHRACENE	150 µG/KG	BJ
DI-N-BUTYL PHTHALATE	130 µG/KG	BJ
1,2-DICHLOROBENZENE	5000 µG/KG	LT
1,3-DICHLOROBENZENE	5000 µG/KG	LT
1,4-DICHLOROBENZENE	5000 µG/KG	LT
3,3'-DICHLOROBENZIDINE	5000 µG/KG	LT
2,4-DICHLOROPHENOL	5000 µG/KG	LT
2,6-DICHLOROPHENOL	5000 µG/KG	LT
DIELDRIN	50 µG/KG	LT
DIETHYLPHthalate	5000 µG/KG	LT
DIMETHOATE	9900 µG/KG	LT
DIMETHYLPHthalate	5000 µG/KG	LT
P-DIMETHYLAMINO-AZOBENZENE	9900 µG/KG	LT
3,3'-DIMETHYLBENZIDINE	5000 µG/KG	LT
7,12-DIMETHYLBenz(A)ANTHRACENE	5000 µG/KG	LT
2,4-DIMETHYLPHENOL	5000 µG/KG	LT
1,3-DINITROBENZENE	5000 µG/KG	LT
2-METHYL-4,6-DINITROPHENOL	25000 µG/KG	LT
2,4-DINITROPHENOL	25000 µG/KG	LT
2,4-DINITROTOLUENE	5000 µG/KG	LT
2,6-DINITROTOLUENE	1100 µG/KG	J
DIPHENYLAMINE	9900 µG/KG	LT
DISULFOTON (Di-Syston)	5000 µG/KG	LT
ENDOSULFAN I	9900 µG/KG	LT
ENDOSULFAN II	5000 µG/KG	LT
ENDOSULFAN SULFATE	5000 µG/KG	LT

## Raw Ash Data

ENDRIN	5000 µG/KG	LT
ENDRIN ALDEHYDE	5000 µG/KG	LT
ETHYL METHANESULFONATE	9900 µG/KG	LT
BIS(2-ETHYLHEXYL)PHTHALATE	310 µG/KG	BJ
FAMPHUR	9900 µG/KG	LT
FLUORANTHENE	170 µG/KG	J
FLUORENE	120 µG/KG	J
HEPTACHLOR	5000 µG/KG	LT
HEPTACHLOR EPOXIDE	5000 µG/KG	LT
HEXACHLOROBENZENE	5000 µG/KG	LT
HEXACHLOROBUTADIENE (C-46)	5000 µG/KG	LT
HEXACHLOROCYCLOPENTADIENE (C-56)	5000 µG/KG	LT
HEXACHLOROETHANE	5000 µG/KG	LT
HEXACHLOROPROPENE	5000 µG/KG	LT
INDENO(1,2,3-cd)PYRENE	120 µG/KG	BJ
ISODRIN	9900 µG/KG	LT
ISOPHORONE	5000 µG/KG	LT
ISOSAFROLE	5000 µG/KG	LT
KEPONE	9900 µG/KG	LT
METHAPYRILENE	50000 µG/KG	LT
METHOXYCHLOR	5000 µG/KG	LT
METHYL METHANESULFONATE	5000 µG/KG	LT
METHYL PARATHION	5000 µG/KG	LT
3-METHYLCHOLANTHRENE	5000 µG/KG	LT
2-METHYLNAPHTHALENE	400 µG/KG	J
2-METHYL PHENOL	670 µG/KG	J
3- OR 4-METHYLPHENOL	5000 µG/KG	LT
NAPHTHALENE	2400 µG/KG	J
1,4-NAPHTHOQUINONE	5000 µG/KG	LT
1-NAPHTHYLAMINE	5000 µG/KG	LT
2-NAPHTHYLAMINE	5000 µG/KG	LT
2-NITROANILINE	25000 µG/KG	LT
3-NITROANILINE	25000 µG/KG	LT
4-NITROANILINE	9900 µG/KG	LT
NITROBENZENE	5000 µG/KG	LT
2-NITROPHENOL	5000 µG/KG	LT
4-NITROPHENOL	25000 µG/KG	LT
N-NITROSODIETHYLAMINE	9900 µG/KG	LT
N-NITROSOSDIMETHYLAMINE	990 µG/KG	LT
N-NITROSODIPHENYLAMINE	2500 µG/KG	LT
N-NITROSODI-N-BUTYLAMINE	5000 µG/KG	LT
N-NITROSOMETHYL-ETHYLAMINE	5000 µG/KG	LT
N-NITROSOPIPERIDINE	99000 µG/KG	LT
N-NITROSO-DI-N-PROPYLAMINE	5000 µG/KG	LT
N-NITROSOPIRROLIDINE	5000 µG/KG	LT
5-NITRO-O-TOLUIDINE	5000 µG/KG	LT
DI-N-OCTYL PHTHALATE	5000 µG/KG	LT
PARATHION, ETHYL	5000 µG/KG	LT
PENTACHLOROBENZENE	5000 µG/KG	LT

## Raw Ash Data

PENTACHLORONITROBENZENE	5000 µG/KG	LT
PENTACHLOROPHENOL	25000 µG/KG	LT
PHENACETIN	9900 µG/KG	LT
PHENANTHRENE	810 µG/KG	J
PHENOL	5000 µG/KG	LT
P-PHENYLENEDIAMINE	5000 µG/KG	LT
PHORATE	5000 µG/KG	LT
PRONAMIDE	5000 µG/KG	LT
PYRENE	180 µG/KG	J
SAFROLE	5000 µG/KG	LT
1,2,4,5-TETRACHLOROBENZENE	5000 µG/KG	LT
2,3,4,6-TETRACHLOROPHENOL	5000 µG/KG	LT
THIONAZIN	5000 µG/KG	LT
O-TOLUIDINE	5000 µG/KG	LT
TOXAPHENE	990 µG/KG	LT
1,2,4-TRICHLOROBENZENE	5000 µG/KG	LT
2,4,5-TRICHLOROPHENOL	38 µG/KG	J
2,4,6-TRICHLOROPHENOL	5000 µG/KG	LT
SOLIDS, DRY	99 PERCENT	
ARSENIC IN DRY SOLIDS	69 MG/KG	
SELENIUM IN DRY SOLIDS	1 MG/KG	LT
MERCURY IN DRY SOLIDS	0.1 MG/KG	LT
BERYLLIUM IN DRY SOLIDS	0.8 MG/KG	
SILVER IN DRY SOLIDS	8 MG/KG	LT
BARIUM IN DRY SOLIDS	119 MG/KG	
CADMIUM IN DRY SOLIDS	2 MG/KG	LT
COBALT IN DRY SOLIDS	5 MG/KG	
CHROMIUM IN DRY SOLIDS	92 MG/KG	
COPPER IN DRY SOLIDS	343 MG/KG	
IRON IN DRY SOLIDS	3560 MG/KG	
MANGANESE IN DRY SOLIDS	152 MG/KG	
NICKEL IN DRY SOLIDS	13 MG/KG	
STRONTIUM IN DRY SOLIDS	117 MG/KG	
TITANIUM IN DRY SOLIDS	1740 MG/KG	
VANADIUM IN DRY SOLIDS	32 MG/KG	
ZINC IN DRY SOLIDS	721 MG/KG	
MOLYBDENUM IN DRY SOLIDS	16 MG/KG	LT
LEAD IN DRY SOLIDS	32 MG/KG	
ANTIMONY IN DRY SOLIDS	MG/KG	NR
TIN IN DRY SOLIDS	104 MG/KG	
THALLIUM IN DRY SOLIDS	MG/KG	NR
ALUMINUM IN DRY SOLIDS	82400 MG/KG	
CALCIUM IN DRY SOLIDS	139000 MG/KG	
POTASSIUM IN DRY SOLIDS	3110 MG/KG	
MAGNESIUM IN DRY SOLIDS	2530 MG/KG	
SODIUM IN DRY SOLIDS	3450 MG/KG	
PYRIDINE	600 µG/KG	J
ALPHA-PICOLINE	160 µG/KG	J
ANILINE	5000 µG/KG	LT

## **Raw Ash Data**

BENZIDINE	24000 µG/KG	LT
ENDRIN KETONE	500 µG/KG	LT
1,3,5-TRINITROBENZENE	5000 µG/KG	LT
4-NITROQUINOLINE 1-OXIDE	18000 µG/KG	LT
CHLORDANE, ALPHA ISOMER	24000 µG/KG	LT

## Raw Ash Data

### Metals from Avid Recycler

SOLIDS, DRY	92 PERCENT	
ARSENIC IN DRY SOLIDS	320 MG/KG	
SELENIUM IN DRY SOLIDS	1 MG/KG	LT
MERCURY IN DRY SOLIDS	0.1 MG/KG	LT
BERYLLIUM IN DRY SOLIDS	0.9 MG/KG	
SILVER IN DRY SOLIDS	9 MG/KG	LT
BARIUM IN DRY SOLIDS	185 MG/KG	
CADMIUM IN DRY SOLIDS	3 MG/KG	LT
COBALT IN DRY SOLIDS	11 MG/KG	
CHROMIUM IN DRY SOLIDS	300 MG/KG	
COPPER IN DRY SOLIDS	4910 MG/KG	
IRON IN DRY SOLIDS	4390 MG/KG	
MANGANESE IN DRY SOLIDS	541 MG/KG	
NICKEL IN DRY SOLIDS	22 MG/KG	
STRONTIUM IN DRY SOLIDS	102 MG/KG	
TITANIUM IN DRY SOLIDS	820 MG/KG	
VANADIUM IN DRY SOLIDS	37 MG/KG	
ZINC IN DRY SOLIDS	11500 MG/KG	
MOLYBDENUM IN DRY SOLIDS	17 MG/KG	LT
LEAD IN DRY SOLIDS	164 MG/KG	
ANTIMONY IN DRY SOLIDS	MG/KG	NR
TIN IN DRY SOLIDS	228 MG/KG	
THALLIUM IN DRY SOLIDS	MG/KG	NR
ALUMINUM IN DRY SOLIDS	101000 MG/KG	
CALCIUM IN DRY SOLIDS	94600 MG/KG	
POTASSIUM IN DRY SOLIDS	5000 MG/KG	
MAGNESIUM IN DRY SOLIDS	2870 MG/KG	
SODIUM IN DRY SOLIDS	5410 MG/KG	

## Raw Ash Data

### Matrix Spike of Non-Recycler

2,3,7,8-TETRACHLORODIBENZODIOXIN	820	PG/G
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	1200	PG/G
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	780	PG/G
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	780	PG/G
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	890	PG/G
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	1500	PG/G
OCTACHLORODIBENZODIOXIN	1600	PG/G
2,3,7,8-TETRACHLORODIBENZOFURAN	970	PG/G
1,2,3,7,8-PENTACHLORODIBENZOFURAN	510	PG/G
2,3,4,7,8-PENTACHLORODIBENZOFURAN	1300	PG/G
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	1300	PG/G
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	1400	PG/G
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	1600	PG/G
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	950	PG/G
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	3000	PG/G
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	1200	PG/G
OCTACHLORODIBENZOFURAN	2000	PG/G
TOTAL TETRACHLORODIBENZODIOXINS	1200	PG/G
TOTAL PENTACHLORODIBENZODIOXINS	1800	PG/G
TOTAL HEXACHLORODIBENZODIOXINS	3500	PG/G
TOTAL HEPTACHLORODIBENZODIOXINS	2200	PG/G
TOTAL TETRACHLORODIBENZOFURANS	7000	PG/G
TOTAL PENTACHLORODIBENZOFURANS	6600	PG/G
TOTAL HEXACHLORODIBENZOFURANS	7600	PG/G
TOTAL HEPTACHLORODIBENZOFURANS	4600	PG/G
BZ-1 (2-CHLOROBIPHENYL)	45	NG/G *
BZ-2 (3-CHLOROBIPHENYL)	38	NG/G SU
BZ-3 (4-CHLOROBIPHENYL)	19	NG/G SU
BZ-10, BZ-4	0.5	NG/G LT
2,4,5,6-TETRACHLORO-m-XYLENE (Surrogate)	129	NG/G
BZ-7, BZ-9	0.9	NG/G
BZ-6 (2,3'-DICHLOROBIPHENYL)	1.7	NG/G
BZ-8, BZ-5	2.7	NG/G
HEXACHLOROBENZENE	14	NG/G
BZ-19 (2,2',6-TRICHLOROBIPHENYL)	0.5	NG/G LT
BZ-12 (3,4-DICHLOROBIPHENYL)(Surrogate)	1.7	NG/G
BZ-18 (2,2',5-TRICHLOROBIPHENYL)	3.9	NG/G
BZ-15, BZ-17	2.5	NG/G INT*
BZ-24, BZ-27	0.5	NG/G LT
BZ-16, BZ-32	0.5	NG/G LT
BZ-29 (2,4,5-TRICHLOROBIPHENYL)	0.5	NG/G LT
BZ-26 (2,3',5-TRICHLOROBIPHENYL)	0.5	NG/G LT
BZ-25 (2,3',4-TRICHLOROBIPHENYL)	0.7	NG/G
BZ-31 (2,4',5-TRICHLOROBIPHENYL)	0.8	NG/G
BZ-28 (2,4,4'-TRICHLOROBIPHENYL)	0.5	NG/G PL
BZ-20, BZ-33, BZ-53	2	NG/G
BZ-51 (2,2',4,6'-TETRACHLOROBIPHENYL)	0.5	NG/G LT

## Raw Ash Data

BZ-22 (2,3,4'-TRICHLOROBIPHENYL)	8.6 NG/G	*
BZ-45 (2,2',3,6-TETRACHLOROBIPHENYL)	3.8 NG/G	
BZ-46 (2,2',3,6'-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-39 (3,4',5-TRICHLOROBIPHENYL)	0.5 NG/G	LT
BZ-52 (2,2',5,5'-TETRACHLOROBIPHENYL)	1.4 NG/G	
BZ-49 (2,2',4,5'-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-47 (2,2',4,4'-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-48 (2,2',4,5-TETRACHLOROBIPHENYL)	13 NG/G	
BZ-44 (2,2',3,5'-TETRACHLOROBIPHENYL)	1 NG/G	
BZ-37, BZ-42, BZ-59	1.1 NG/G	
BZ-41, BZ-64	0.5 NG/G	LT
BZ-40 (2,2',3,3'TETRACHLOROBIPHENYL)	15 NG/G	
BZ-67 (2,3',4,5-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-63, OCS	1.2 NG/G	EE*
BZ-74 (2,4,4',5-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-70 (2,3',4',5-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-66, BZ-95	0.6 NG/G	
BZ-91 (2,2',3,4',6-PENTACHLOROBIPHENYL)	0.5 NG/G	PL
BZ-56, BZ-60	1.8 NG/G	
BZ-92 (2,2',3,5,5'-PENTACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-84 (2,2',3,3',6-PENTACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-90, BZ-101	0.5 NG/G	PL
BZ-99 (2,2',4,4',5-PENTACHLOROBIPHENYL)	1 NG/G	
BZ-119 (2,3',4,4',6-PENTACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-83 (2,2',3,3',5-PENTACHLOROBIPHENYL)	7.3 NG/G	*
BZ-97 (2,2',3',4,5-PENTACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-87, BZ-115	1.6 NG/G	
BZ-85, 4,4'-DDE	0.5 NG/G	
BZ-136	0.5 NG/G	LT
BZ-77, BZ-110	0.8 NG/G	
BZ-82 (2,2',3,3',4-PENTACHLOROBIPHENYL)	0.5 NG/G	PL
BZ-151 (2,2',3,5,5',6-HEXACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-135	0.5 NG/G	LT
BZ-107 (2,3,3',4',5-PENTACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-123, BZ-149	0.5 NG/G	PL
BZ-118	8.3 NG/G	*
BZ-134	0.5 NG/G	LT
BZ-122 (2',3,3',4,5-PENTACHLOROBIPHENYL)	0.5 NG/G	PL
BZ-146	0.5 NG/G	LT
BZ-153	0.5 NG/G	LT
BZ-132, BZ-105	1 NG/G	
BZ-141 (2,2',3,4,5,5'-HEXACHLOROBIPHENYL)	0.5 NG/G	PL
BZ-179	0.5 NG/G	LT
BZ-137	0.5 NG/G	LT
BZ-130, BZ-176	0.5 NG/G	PL
BZ-138	0.5 NG/G	PL
BZ-158	0.5 NG/G	LT
BZ-129	8.4 NG/G	*
BZ-178	0.5 NG/G	LT

## Raw Ash Data

BZ-175	39	NG/G	
BZ-187	0.5	NG/G	LT
BZ-183	1.7	NG/G	
BZ-128	0.5	NG/G	LT
BZ-167	0.5	NG/G	PL
BZ-185	0.5	NG/G	LT
BZ-174	0.5	NG/G	LT
BZ-177	0.5	NG/G	LT
BZ-171, BZ-202	0.5	NG/G	LT
BZ-156	0.5	NG/G	PL
BZ-173, BZ-157, IUPAC-201	0.5	NG/G	LT
BZ-172	8.6	NG/G	*
BZ-197	0.5	NG/G	PL
BZ-180	1.2	NG/G	
BZ-193	0.5	NG/G	LT
BZ-191	0.5	NG/G	LT
IUPAC-200	0.5	NG/G	LT
MIREX	0.5	NG/G	LT
BZ-170, BZ-190	0.7	NG/G	
IUPAC-199	0.5	NG/G	PL
BZ-203, BZ-196	0.5	NG/G	LT
BZ-189	0.5	NG/G	PL
BZ-195	0.7	NG/G	
BZ-194	1.1	NG/G	
BZ-206	11	NG/G	*
BZ-209 (DECACHLOROBIPHENYL)(Surrogate)	128	NG/G	
PICES (Surrogates)		NG/G	
BZ-14 (3,5-DICHLOROBIPHENYL)	33	NG/G	
BZ-65 (2,3,5,6-TETRACHLOROBIPHENYL)	32	NG/G	
BZ-166, BZ-175	39	NG/G	
SOLIDS, DRY		PERCENT	NR
ACENAPHTHENE	13000	µG/KG	
ACENAPHTHYLENE	91	µG/KG	J
ACETOPHENONE	1200	µG/KG	J
2-ACETYLAMINOFLUORENE	9900	µG/KG	LT
ALDRIN	5000	µG/KG	LT
4-AMINOBIPHENYL	9900	µG/KG	LT
ANTHRACENE	110	µG/KG	J
AROCLOR 1016	99000	µG/KG	LT
AROCLOR 1221	99000	µG/KG	LT
AROCLOR 1232	99000	µG/KG	LT
AROCLOR 1242	99000	µG/KG	LT
AROCLOR 1248	99000	µG/KG	LT
AROCLOR 1254	99000	µG/KG	LT
AROCLOR 1260	99000	µG/KG	LT
BENZO(a)ANTHRACENE	100	µG/KG	J
BENZO(b)FLUORANTHENE	5000	µG/KG	LT
BENZO(k)FLUORANTHENE	5000	µG/KG	LT
BENZO(ghi)PERYLENE	5000	µG/KG	LT

## Raw Ash Data

BENZO(a)PYRENE	5000 µG/KG	LT
BENZYL ALCOHOL	5000 µG/KG	LT
HCH,ALPHA	26 µG/KG	LT
HCH,BETA	26 µG/KG	LT
HCH,DELTA	26 µG/KG	LT
HCH,GAMMA (LINDANE)	26 µG/KG	LT
4-BROMOPHENYL PHENYL ETHER	5000 µG/KG	LT
BUTYL BENZYL PHTHALATE	5000 µG/KG	LT
CHLORDANE, GAMMA ISOMER	24000 µG/KG	LT
4-CHLOROANILINE	5000 µG/KG	LT
CHLOROBENZILATE	5000 µG/KG	LT
BIS(2-CHLOROETHOXY)METHANE	5000 µG/KG	LT
BIS(2-CHLOROETHYL)ETHER	5000 µG/KG	LT
BIS(2-CHLOROISOPROPYL)ETHER	5000 µG/KG	LT
4-CHLORO-3-METHYLPHENOL	23000 µG/KG	
2-CHLORONAPHTHALENE	5000 µG/KG	LT
2-CHLOROPHENOL	17000 µG/KG	
4-CHLOROPHENYL PHENYL ETHER	5000 µG/KG	LT
CHRYSENE	240 µG/KG	J
4,4'-DDD	5000 µG/KG	LT
4,4'-DDE	5000 µG/KG	LT
4,4'-DDT	50 µG/KG	LT
DIALLATE	5000 µG/KG	LT
DIBENZOFURAN	350 µG/KG	J
DIBENZ(A,H)ANTHRACENE	5000 µG/KG	LT
DI-N-BUTYL PHTHALATE	5000 µG/KG	LT
1,2-DICHLOROBENZENE	5000 µG/KG	LT
1,3-DICHLOROBENZENE	5000 µG/KG	LT
1,4-DICHLOROBENZENE	10000 µG/KG	
3,3'-DICHLOROBENZIDINE	5000 µG/KG	LT
2,4-DICHLOROPHENOL	5000 µG/KG	LT
2,6-DICHLOROPHENOL	5000 µG/KG	LT
DIELDRIN	50 µG/KG	LT
DIETHYLPHthalate	5000 µG/KG	LT
DIMETHOATE	9900 µG/KG	LT
DIMETHYLPHthalate	5000 µG/KG	LT
P-DIMETHYLAMINO-AZOBENZENE	9900 µG/KG	LT
3,3'-DIMETHYLBENZIDINE	5000 µG/KG	LT
7,12-DIMETHYLBenz(A)ANTHRACENE	5000 µG/KG	LT
2,4-DIMETHYLPHENOL	5000 µG/KG	LT
1,3-DINITROBENZENE	5000 µG/KG	LT
2-METHYL-4,6-DINITROPHENOL	25000 µG/KG	LT
2,4-DINITROPHENOL	25000 µG/KG	LT
2,4-DINITROTOLUENE	9100 µG/KG	
2,6-DINITROTOLUENE	5000 µG/KG	LT
DIPHENYLAMINE	9900 µG/KG	LT
DISULFOTON (Di-Syston)	5000 µG/KG	LT
ENDOSULFAN I	9900 µG/KG	LT
ENDOSULFAN II	5000 µG/KG	LT

## Raw Ash Data

ENDOSULFAN SULFATE	5000 µG/KG	LT
ENDRIN	5000 µG/KG	LT
ENDRIN ALDEHYDE	5000 µG/KG	LT
ETHYL METHANESULFONATE	9900 µG/KG	LT
BIS(2-ETHYLHEXYL)PHTHALATE	1000 µG/KG	BJ
FAMPHUR	9900 µG/KG	LT
FLUORANTHENE	230 µG/KG	J
FLUORENE	170 µG/KG	J
HEPTACHLOR	5000 µG/KG	LT
HEPTACHLOR EPOXIDE	5000 µG/KG	LT
HEXACHLOROBENZENE	5000 µG/KG	LT
HEXACHLOROBUTADIENE (C-46)	5000 µG/KG	LT
HEXACHLOROCYCLOPENTADIENE (C-56)	5000 µG/KG	LT
HEXACHLOROETHANE	5000 µG/KG	LT
HEXACHLOROPROPENE	5000 µG/KG	LT
INDENO(1,2,3-cd)PYRENE	5000 µG/KG	LT
ISODRIN	9900 µG/KG	LT
ISOPHORONE	5000 µG/KG	LT
ISOSAFROLE	5000 µG/KG	LT
KEPONE	9900 µG/KG	LT
METHAPYRILENE	50000 µG/KG	LT
METHOXYCHLOR	5000 µG/KG	LT
METHYL METHANESULFONATE	5000 µG/KG	LT
METHYL PARATHION	5000 µG/KG	LT
3-METHYLCHOLANTHRENE	5000 µG/KG	LT
2-METHYLNAPHTHALENE	530 µG/KG	J
2-METHYL PHENOL	620 µG/KG	J
3- OR 4-METHYLPHENOL	5000 µG/KG	LT
NAPHTHALENE	2000 µG/KG	J
1,4-NAPHTHOQUINONE	5000 µG/KG	LT
1-NAPHTHYLAMINE	5000 µG/KG	LT
2-NAPHTHYLAMINE	5000 µG/KG	LT
2-NITROANILINE	25000 µG/KG	LT
3-NITROANILINE	25000 µG/KG	LT
4-NITROANILINE	9900 µG/KG	LT
NITROBENZENE	5000 µG/KG	LT
2-NITROPHENOL	5000 µG/KG	LT
4-NITROPHENOL	23000 µG/KG	J
N-NITROSODIETHYLAMINE	9900 µG/KG	LT
N-NITROSODIMETHYLAMINE	990 µG/KG	LT
N-NITROSODIPHENYLAMINE	2500 µG/KG	LT
N-NITROSODI-N-BUTYLAMINE	5000 µG/KG	LT
N-NITROSOMETHYL-ETHYLAMINE	5000 µG/KG	LT
N-NITROSOPIPERIDINE	99000 µG/KG	LT
N-NITROSO-DI-N-PROPYLAMINE	16000 µG/KG	
N-NITROSYRROLIDINE	5000 µG/KG	LT
5-NITRO-O-TOLUIDINE	5000 µG/KG	LT
DI-N-OCTYL PHTHALATE	5000 µG/KG	LT
PARATHION, ETHYL	5000 µG/KG	LT

## Raw Ash Data

PENTACHLOROBENZENE	5000 µG/KG	LT
PENTACHLORONITROBENZENE	5000 µG/KG	LT
PENTACHLOROPHENOL	25000 µG/KG	
PHENACETIN	9900 µG/KG	LT
PHENANTHRENE	1100 µG/KG	J
PHENOL	20000 µG/KG	
P-PHENYLENEDIAMINE	5000 µG/KG	LT
PHORATE	5000 µG/KG	LT
PRONAMIDE	5000 µG/KG	LT
PYRENE	15000 µG/KG	
SAFROLE	5000 µG/KG	LT
1,2,4,5-TETRACHLOROBENZENE	5000 µG/KG	LT
2,3,4,6-TETRACHLOROPHENOL	5000 µG/KG	LT
THIONAZIN	5000 µG/KG	LT
O-TOLUIDINE	5000 µG/KG	LT
TOXAPHENE	990 µG/KG	LT
1,2,4-TRICHLOROBENZENE	13000 µG/KG	
2,4,5-TRICHLOROPHENOL	12000 µG/KG	LT
2,4,6-TRICHLOROPHENOL	31 µG/KG	J
SOLIDS, DRY	PERCENT	NR
ARSENIC IN DRY SOLIDS	69 MG/KG	
SELENIUM IN DRY SOLIDS	1.2 MG/KG	
MERCURY IN DRY SOLIDS	0.1 MG/KG	
BERYLLIUM IN DRY SOLIDS	10.4 MG/KG	
SILVER IN DRY SOLIDS	8 MG/KG	
BARIUM IN DRY SOLIDS	499 MG/KG	
CADMIUM IN DRY SOLIDS	10 MG/KG	
COBALT IN DRY SOLIDS	97 MG/KG	
CHROMIUM IN DRY SOLIDS	123 MG/KG	
COPPER IN DRY SOLIDS	388 MG/KG	
IRON IN DRY SOLIDS	3820 MG/KG	
MANGANESE IN DRY SOLIDS	246 MG/KG	
NICKEL IN DRY SOLIDS	109 MG/KG	
STRONTIUM IN DRY SOLIDS	115 MG/KG	
TITANIUM IN DRY SOLIDS	1930 MG/KG	
VANADIUM IN DRY SOLIDS	125 MG/KG	
ZINC IN DRY SOLIDS	859 MG/KG	
MOLYBDENUM IN DRY SOLIDS	16 MG/KG	LT
LEAD IN DRY SOLIDS	128 MG/KG	
ANTIMONY IN DRY SOLIDS	MG/KG	NR
TIN IN DRY SOLIDS	103 MG/KG	
THALLIUM IN DRY SOLIDS	MG/KG	NR
ALUMINUM IN DRY SOLIDS	87300 MG/KG	
CALCIUM IN DRY SOLIDS	147000 MG/KG	
POTASSIUM IN DRY SOLIDS	3230 MG/KG	
MAGNESIUM IN DRY SOLIDS	2530 MG/KG	
SODIUM IN DRY SOLIDS	2970 MG/KG	
PYRIDINE	660 µG/KG	J
ALPHA-PICOLINE	150 µG/KG	J

## Raw Ash Data

ANILINE	5000 µG/KG	LT
BENZIDINE	24000 µG/KG	LT
ENDRIN KETONE	500 µG/KG	LT
1,3,5-TRINITROBENZENE	5000 µG/KG	LT
4-NITROQUINOLINE 1-OXIDE	18000 µG/KG	LT
CHLORDANE, ALPHA ISOMER	24000 µG/KG	LT
* - matrix spike of 10 ng/g		

## Raw Ash Data

### Matrix Spike Duplicate of Non-Recycler

2,3,7,8-TETRACHLORODIBENZODIOXIN	790 PG/G	
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	1200 PG/G	
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	770 PG/G	
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	750 PG/G	
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	860 PG/G	
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	1400 PG/G	
OCTACHLORODIBENZODIOXIN	1500 PG/G	
2,3,7,8-TETRACHLORODIBENZOFURAN	950 PG/G	
1,2,3,7,8-PENTACHLORODIBENZOFURAN	450 PG/G	
2,3,4,7,8-PENTACHLORODIBENZOFURAN	1100 PG/G	
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	1200 PG/G	
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	1300 PG/G	
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	1400 PG/G	
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	880 PG/G	
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	2300 PG/G	
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	1000 PG/G	
OCTACHLORODIBENZOFURAN	1700 PG/G	
TOTAL TETRACHLORODIBENZODIOXINS	1200 PG/G	
TOTAL PENTACHLORODIBENZODIOXINS	1700 PG/G	
TOTAL HEXACHLORODIBENZODIOXINS	3300 PG/G	
TOTAL HEPTACHLORODIBENZODIOXINS	2000 PG/G	
TOTAL TETRACHLORODIBENZOFURANS	6300 PG/G	
TOTAL PENTACHLORODIBENZOFURANS	5400 PG/G	
TOTAL HEXACHLORODIBENZOFURANS	6400 PG/G	
TOTAL HEPTACHLORODIBENZOFURANS	3600 PG/G	
BZ-1 (2-CHLOROBIPHENYL)	42 NG/G	*
BZ-2 (3-CHLOROBIPHENYL)	37 NG/G	SU
BZ-3 (4-CHLOROBIPHENYL)	21 NG/G	SU
BZ-10, BZ-4	0.5 NG/G	LT
2,4,5,6-TETRACHLORO-m-XYLENE (Surrogate)	146 NG/G	
BZ-7, BZ-9	1.3 NG/G	
BZ-6 (2,3'-DICHLOROBIPHENYL)	4.1 NG/G	
BZ-8, BZ-5	3.5 NG/G	
HEXACHLOROBENZENE	11 NG/G	
BZ-19 (2,2',6-TRICHLOROBIPHENYL)	4.3 NG/G	
BZ-12 (3,4-DICHLOROBIPHENYL)(Surrogate)	3.8 NG/G	
BZ-18 (2,2',5-TRICHLOROBIPHENYL)	3.8 NG/G	
BZ-15, BZ-17	43 NG/G	INT*
BZ-24, BZ-27	0.5 NG/G	LT
BZ-16, BZ-32	0.5 NG/G	LT
BZ-29 (2,4,5-TRICHLOROBIPHENYL)	0.5 NG/G	LT
BZ-26 (2,3',5-TRICHLOROBIPHENYL)	0.5 NG/G	LT
BZ-25 (2,3',4-TRICHLOROBIPHENYL)	0.8 NG/G	
BZ-31 (2,4',5-TRICHLOROBIPHENYL)	1.6 NG/G	
BZ-28 (2,4,4'-TRICHLOROBIPHENYL)	0.5 NG/G	LT
BZ-20, BZ-33, BZ-53	2.1 NG/G	
BZ-51 (2,2',4,6-TETRACHLOROBIPHENYL)	0.5 NG/G	LT
BZ-22 (2,3,4'-TRICHLOROBIPHENYL)	9.4 NG/G	*

## Raw Ash Data

BZ-45 (2,2',3,6-TETRACHLOROBIPHENYL)	1	NG/G	
BZ-46 (2,2',3,6'-TETRACHLOROBIPHENYL)	0.5	NG/G	LT
BZ-39 (3,4',5-TRICHLOROBIPHENYL)	0.5	NG/G	LT
BZ-52 (2,2',5,5'-TETRACHLOROBIPHENYL)	1.3	NG/G	
BZ-49 (2,2',4,5'-TETRACHLOROBIPHENYL)	0.5	NG/G	LT
BZ-47 (2,2',4,4'-TETRACHLOROBIPHENYL)	0.9	NG/G	
BZ-48 (2,2',4,5-TETRACHLOROBIPHENYL)	0.5	NG/G	LT
BZ-44 (2,2',3,5'-TETRACHLOROBIPHENYL)	0.9	NG/G	
BZ-37, BZ-42, BZ-59	1.2	NG/G	
BZ-41, BZ-64	0.5	NG/G	LT
BZ-40 (2,2',3,3'TETRACHLOROBIPHENYL)	9.7	NG/G	
BZ-67 (2,3',4,5-TETRACHLOROBIPHENYL)	0.5	NG/G	LT
BZ-63, OCS	9.4	NG/G	*
BZ-74 (2,4,4',5-TETRACHLOROBIPHENYL)	0.5	NG/G	PL
BZ-70 (2,3',4',5-TETRACHLOROBIPHENYL)	0.5	NG/G	LT
BZ-66, BZ-95	0.8	NG/G	
BZ-91 (2,2',3,4',6-PENTACHLOROBIPHENYL)	0.5	NG/G	
BZ-56, BZ-60	1.9	NG/G	
BZ-92 (2,2',3,5,5'-PENTACHLOROBIPHENYL)	0.5	NG/G	LT
BZ-84 (2,2',3,3',6-PENTACHLOROBIPHENYL)	0.5	NG/G	LT
BZ-90, BZ-101	0.5	NG/G	PL
BZ-99 (2,2',4,4',5-PENTACHLOROBIPHENYL)	1	NG/G	
BZ-119 (2,3',4,4',6-PENTACHLOROBIPHENYL)	0.5	NG/G	LT
BZ-83 (2,2',3,3',5-PENTACHLOROBIPHENYL)	8.3	NG/G	*
BZ-97 (2,2',3',4,5-PENTACHLOROBIPHENYL)	0.5	NG/G	PL
BZ-87, BZ-115	1.9	NG/G	
BZ-85, 4,4'-DDE	0.5	NG/G	PL
BZ-136	0.5	NG/G	LT
BZ-77, BZ-110	0.8	NG/G	
BZ-82 (2,2',3,3',4-PENTACHLOROBIPHENYL)	0.5	NG/G	PL
BZ-151 (2,2',3,5,5',6-HEXACHLOROBIPHENYL)	0.5	NG/G	LT
BZ-135	0.5	NG/G	LT
BZ-107 (2,3,3',4',5-PENTACHLOROBIPHENYL)	0.5	NG/G	LT
BZ-123, BZ-149	0.5	NG/G	LT
BZ-118	9.1	NG/G	*
BZ-134	0.5	NG/G	LT
BZ-122 (2',3,3',4,5-PENTACHLOROBIPHENYL)	0.5	NG/G	PL
BZ-146	0.5	NG/G	LT
BZ-153	0.5	NG/G	LT
BZ-132, BZ-105	0.9	NG/G	
BZ-141 (2,2',3,4,5,5'-HEXACHLOROBIPHENYL)	0.5	NG/G	LT
BZ-179	0.5	NG/G	LT
BZ-137	0.5	NG/G	LT
BZ-130, BZ-176	0.5	NG/G	PL
BZ-138	0.5	NG/G	PL
BZ-158	0.5	NG/G	LT
BZ-129	9.3	NG/G	*
BZ-178	0.5	NG/G	LT
BZ-175	45	NG/G	

## Raw Ash Data

BZ-187	0.5 NG/G	LT
BZ-183	0.5 NG/G	LT
BZ-128	0.5 NG/G	LT
BZ-167	0.5 NG/G	PL
BZ-185	0.5 NG/G	LT
BZ-174	0.5 NG/G	LT
BZ-177	0.5 NG/G	LT
BZ-171, BZ-202	0.5 NG/G	LT
BZ-156	0.5 NG/G	LT
BZ-173, BZ-157, IUPAC-201	0.5 NG/G	LT
BZ-172	9.3 NG/G	*
BZ-197	0.5 NG/G	PL
BZ-180	1.1 NG/G	
BZ-193	0.5 NG/G	LT
BZ-191	0.5 NG/G	LT
IUPAC-200	0.5 NG/G	LT
MIREX	0.5 NG/G	LT
BZ-170, BZ-190	0.5 NG/G	PL
IUPAC-199	0.5 NG/G	LT
BZ-203, BZ-196	0.5 NG/G	LT
BZ-189	0.5 NG/G	PL
BZ-195	0.7 NG/G	
BZ-194	0.8 NG/G	
BZ-206	11 NG/G	*
BZ-209 (DECACHLOROBIPHENYL)(Surrogate)	141 NG/G	
PICES (Surrogates)	NG/G	
BZ-14 (3,5-DICHLOROBIPHENYL)	36 NG/G	
BZ-65 (2,3,5,6-TETRACHLOROBIPHENYL)	40 NG/G	
BZ-166, BZ-175	45 NG/G	
SOLIDS, DRY	PERCENT	NR
ACENAPHTHENE	5000 µG/KG	LT
ACENAPHTHYLENE	5000 µG/KG	LT
ACETOPHENONE	5000 µG/KG	LT
2-ACETYLAMINOFLUORENE	9900 µG/KG	LT
ALDRIN	5000 µG/KG	LT
4-AMINOBIPHENYL	9900 µG/KG	LT
ANTHRACENE	110 µG/KG	J
AROCLOR 1016	99000 µG/KG	LT
AROCLOR 1221	99000 µG/KG	LT
AROCLOR 1232	99000 µG/KG	LT
AROCLOR 1242	99000 µG/KG	LT
AROCLOR 1248	99000 µG/KG	LT
AROCLOR 1254	99000 µG/KG	LT
AROCLOR 1260	99000 µG/KG	LT
BENZO(a)ANTHRACENE	100 µG/KG	J
BENZO(b)FLUORANTHENE	5000 µG/KG	LT
BENZO(k)FLUORANTHENE	5000 µG/KG	LT
BENZO(ghi)PERYLENE	5000 µG/KG	LT
BENZO(a)PYRENE	5000 µG/KG	LT

## Raw Ash Data

BENZYL ALCOHOL	5000 µG/KG	LT
HCH,ALPHA	26 µG/KG	LT
HCH,BETA	26 µG/KG	LT
HCH,DELTA	26 µG/KG	LT
HCH,GAMMA (LINDANE)	26 µG/KG	LT
4-BROMOPHENYL PHENYL ETHER	5000 µG/KG	LT
BUTYL BENZYL PHTHALATE	5000 µG/KG	LT
CHLORDANE, GAMMA ISOMER	24000 µG/KG	LT
4-CHLOROANILINE	5000 µG/KG	LT
CHLOROBENZILATE	5000 µG/KG	LT
BIS(2-CHLOROETHOXY)METHANE	5000 µG/KG	LT
BIS(2-CHLOROETHYL)ETHER	5000 µG/KG	LT
BIS(2-CHLOROISOPROPYL)ETHER	5000 µG/KG	LT
4-CHLORO-3-METHYLPHENOL	5000 µG/KG	LT
2-CHLORONAPHTHALENE	5000 µG/KG	LT
2-CHLOROPHENOL	5000 µG/KG	LT
4-CHLOROPHENYL PHENYL ETHER	5000 µG/KG	LT
CHRYSENE	240 µG/KG	J
4,4'-DDD	5000 µG/KG	LT
4,4'-DDE	5000 µG/KG	LT
4,4'-DDT	50 µG/KG	LT
DIALLATE	5000 µG/KG	LT
DIBENZOFURAN	5000 µG/KG	LT
DIBENZ(A,H)ANTHRACENE	5000 µG/KG	LT
DI-N-BUTYL PHTHALATE	5000 µG/KG	LT
1,2-DICHLOROBENZENE	5000 µG/KG	LT
1,3-DICHLOROBENZENE	5000 µG/KG	LT
1,4-DICHLOROBENZENE	5000 µG/KG	LT
3,3'-DICHLOROBENZIDINE	5000 µG/KG	LT
2,4-DICHLOROPHENOL	5000 µG/KG	LT
2,6-DICHLOROPHENOL	5000 µG/KG	LT
DIELDRIN	50 µG/KG	LT
DIETHYLPHthalate	5000 µG/KG	LT
DIMETHOATE	9900 µG/KG	LT
DIMETHYLPHthalate	5000 µG/KG	LT
P-DIMETHYLAMINO-AZOBENZENE	9900 µG/KG	LT
3,3'-DIMETHYLBENZIDINE	5000 µG/KG	LT
7,12-DIMETHYLBenz(A)ANTHRACENE	5000 µG/KG	LT
2,4-DIMETHYLPHENOL	5000 µG/KG	LT
1,3-DINITROBENZENE	5000 µG/KG	LT
2-METHYL-4,6-DINITROPHENOL	25000 µG/KG	LT
2,4-DINITROPHENOL	25000 µG/KG	LT
2,4-DINITROTOLUENE	5000 µG/KG	LT
2,6-DINITROTOLUENE	5000 µG/KG	LT
DIPHENYLAMINE	9900 µG/KG	LT
DISULFOTON (Di-Syston)	5000 µG/KG	LT
ENDOSULFAN I	9900 µG/KG	LT
ENDOSULFAN II	5000 µG/KG	LT
ENDOSULFAN SULFATE	5000 µG/KG	LT

## Raw Ash Data

ENDRIN	5000 µG/KG	LT
ENDRIN ALDEHYDE	5000 µG/KG	LT
ETHYL METHANESULFONATE	9900 µG/KG	LT
BIS(2-ETHYLHEXYL)PHTHALATE	1000 µG/KG	BJ
FAMPHUR	9900 µG/KG	LT
FLUORANTHENE	230 µG/KG	J
FLUORENE	5000 µG/KG	LT
HEPTACHLOR	5000 µG/KG	LT
HEPTACHLOR EPOXIDE	5000 µG/KG	LT
HEXACHLOROBENZENE	5000 µG/KG	LT
HEXACHLOROBUTADIENE (C-46)	5000 µG/KG	LT
HEXACHLOROCYCLOPENTADIENE (C-56)	5000 µG/KG	LT
HEXACHLOROETHANE	5000 µG/KG	LT
HEXACHLOROPROPENE	5000 µG/KG	LT
INDENO(1,2,3-cd)PYRENE	5000 µG/KG	LT
ISODRIN	9900 µG/KG	LT
ISOPHORONE	5000 µG/KG	LT
ISOSAFROLE	5000 µG/KG	LT
KEPONE	9900 µG/KG	LT
METHAPYRILENE	50000 µG/KG	LT
METHOXYCHLOR	5000 µG/KG	LT
METHYL METHANESULFONATE	5000 µG/KG	LT
METHYL PARATHION	5000 µG/KG	LT
3-METHYLCHOLANTHRENE	5000 µG/KG	LT
2-METHYLNAPHTHALENE	5000 µG/KG	LT
2-METHYL PHENOL	5000 µG/KG	LT
3- OR 4-METHYLPHENOL	5000 µG/KG	LT
NAPHTHALENE	5000 µG/KG	LT
1,4-NAPHTHOQUINONE	5000 µG/KG	LT
1-NAPHTHYLAMINE	5000 µG/KG	LT
2-NAPHTHYLAMINE	5000 µG/KG	LT
2-NITROANILINE	25000 µG/KG	LT
3-NITROANILINE	25000 µG/KG	LT
4-NITROANILINE	9900 µG/KG	LT
NITROBENZENE	5000 µG/KG	LT
2-NITROPHENOL	5000 µG/KG	LT
4-NITROPHENOL	25000 µG/KG	LT
N-NITROSODIETHYLAMINE	9900 µG/KG	LT
N-NITROSOSDIMETHYLAMINE	990 µG/KG	LT
N-NITROSODIPHENYLAMINE	2500 µG/KG	LT
N-NITROSODI-N-BUTYLAMINE	5000 µG/KG	LT
N-NITROSMETHYL-ETHYLAMINE	5000 µG/KG	LT
N-NITROSOPIPERIDINE	99000 µG/KG	LT
N-NITROSO-DI-N-PROPYLAMINE	5000 µG/KG	LT
N-NITROSOPIRROLIDINE	5000 µG/KG	LT
5-NITRO-O-TOLUIDINE	5000 µG/KG	LT
DI-N-OCTYL PHTHALATE	5000 µG/KG	LT
PARATHION, ETHYL	5000 µG/KG	LT
PENTACHLOROBENZENE	5000 µG/KG	LT

## Raw Ash Data

PENTACHLORONITROBENZENE	5000 µG/KG	LT
PENTACHLOROPHENOL	25000 µG/KG	
PHENACETIN	9900 µG/KG	LT
PHENANTHRENE	1100 µG/KG	J
PHENOL	5000 µG/KG	LT
P-PHENYLENEDIAMINE	5000 µG/KG	LT
PHORATE	5000 µG/KG	LT
PRONAMIDE	5000 µG/KG	LT
PYRENE	15000 µG/KG	
SAFROLE	5000 µG/KG	LT
1,2,4,5-TETRACHLOROBENZENE	5000 µG/KG	LT
2,3,4,6-TETRACHLOROPHENOL	5000 µG/KG	LT
THIONAZIN	5000 µG/KG	LT
O-TOLUIDINE	5000 µG/KG	LT
TOXAPHENE	990 µG/KG	LT
1,2,4-TRICHLOROBENZENE	5000 µG/KG	LT
2,4,5-TRICHLOROPHENOL	12000 µG/KG	LT
2,4,6-TRICHLOROPHENOL	5000 µG/KG	LT
PYRIDINE	50000 µG/KG	LT
ALPHA-PICOLINE	50000 µG/KG	LT
ANILINE	5000 µG/KG	LT
BENZIDINE	24000 µG/KG	LT
ENDRIN KETONE	500 µG/KG	LT
1,3,5-TRINITROBENZENE	5000 µG/KG	LT
4-NITROQUINOLINE 1-OXIDE	18000 µG/KG	LT
CHLORDANE, ALPHA ISOMER	24000 µG/KG	LT

\* - matrix spike of 10 ng/g

## Raw Ash Data

### Synthetic QC for Metals

	PERCENT	NR
SOLIDS, DRY		
ARSENIC IN DRY SOLIDS	130 MG/KG	
SELENIUM IN DRY SOLIDS	160 MG/KG	
MERCURY IN DRY SOLIDS	5.41 MG/KG	
BERYLLIUM IN DRY SOLIDS	77 MG/KG	
SILVER IN DRY SOLIDS	78 MG/KG	
BARIUM IN DRY SOLIDS	184 MG/KG	
CADMIUM IN DRY SOLIDS	117 MG/KG	
COBALT IN DRY SOLIDS	83 MG/KG	
CHROMIUM IN DRY SOLIDS	88 MG/KG	
COPPER IN DRY SOLIDS	86 MG/KG	
IRON IN DRY SOLIDS	6160 MG/KG	
MANGANESE IN DRY SOLIDS	218 MG/KG	
NICKEL IN DRY SOLIDS	127 MG/KG	
STRONTIUM IN DRY SOLIDS	40 MG/KG	LT
TITANIUM IN DRY SOLIDS	173 MG/KG	
VANADIUM IN DRY SOLIDS	61 MG/KG	
ZINC IN DRY SOLIDS	131 MG/KG	
MOLYBDENUM IN DRY SOLIDS	77 MG/KG	

TECHNICAL REPORT DATA Please read Instructions on the reverse before completing)			
1. REPORT NO. <b>EPA/600/R-97-134b</b>	2.	3. RECIPIENT'S ACCESSION NO.	
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7. AUTHOR(S)  <b>Paul M. Lemieux</b>		8. PERFORMING ORGANIZATION REPORT NO.	
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16. ABSTRACT  The report gives results of a detailed emissions characterization study, undertaken to examine, characterize, and quantify emissions from the simulated burning of household waste material in barrels. The study evaluated two waste streams: that of an avid recycler, who removed most of the recyclable content from the waste stream prior to combustion; and that of a non-recycler, who combusts the entire stream of household waste. Estimated emissions were developed in units of mass emitted per mass of waste burned. Continuous gas samples were analyzed for oxygen, carbon dioxide, carbon monoxide, nitric oxide, and total hydrocarbons. Gas-phase samples were collected using SUMMA canisters and analyzed by gas chromatography/mass spectroscopy (GC/MS) for volatile organic compounds (VOCs). Extractive samples from the combined particulate- and gas-phase were analyzed for semivolatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), chlorobenzenes (CBs), polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDDs/PCDFs), aldehydes and ketones, hydrogen chloride (HCl), hydrogen cyanide (HCN), and metals. Emissions of particulate matter (PM) with aerodynamic diameters of 10 micrometers or less (PM10) and of 2.5 micrometers or less (PM2.5) were also measured.			
17. KEY WORDS AND DOCUMENT ANALYSIS			
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