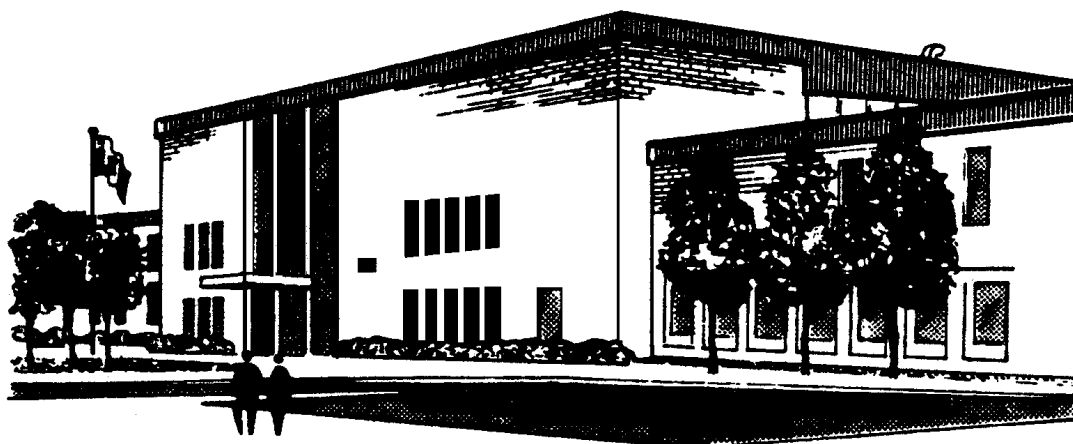


# Chemical Mass Balance Analysis of Vehicle Emissions in Residential Houses from Attached Garages

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**ERMD Report #99-26768-3**

*Prepared by: Lianne Noseworthy, Lisa Graham*

ENVIRONMENTAL TECHNOLOGY CENTRE

EMISSIONS RESEARCH AND MEASUREMENT DIVISION

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## **Summary**

The Emissions Research and Measurement Division (ERMD) of Environment Canada has collected and analysed air samples from eleven residential houses to investigate the infiltration of vehicle emissions into houses from attached garages. Chemical mass balance receptor modelling was conducted on these samples to apportion a selection of chemical compounds found in residential houses to their sources, namely, the outdoor air, the garage air, or the pre-test in-house air. The U.S. EPA's Chemical Mass Balance 8.0 model was used to conduct this analysis. The results presented herein are for a second year of testing. The results of the chemical mass balance analyses show that between 11% and 75% of the garage air or between 9% and 71% of the vehicle emissions, depending on the house, infiltrate into the house from the attached garage during an evening hot soak test. Between 18% and 82% of the garage air or between 19% and 74% of the vehicle emissions, depending on the house, infiltrate into the house from the attached garage during a morning cold start test.

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# 1 Introduction

As part of the larger project entitled “Contribution of Vehicle Emissions from an Attached Garage to Residential Indoor Air Pollution Levels”, the Emissions Research and Measurement Division (ERMD) of Environment Canada has collected and analysed air samples from eleven residential houses to investigate the infiltration of vehicle emissions into houses from attached garages.

The larger project has the following objectives:

- to qualify and quantify cold start, hot start and evaporative emissions emitted from a vehicle in a residential garage due to daily use of the vehicle;
- to qualify and quantify those vehicle emissions products which reach an adjacent room in the residence via an attached garage, i.e., through the common door, walls, or attic of the house;
- to determine the concentrations of vehicle emission products in the attached garage relative to an adjacent room inside the house;
- to model movement/path of entry of vehicle emissions in an attached garage into the house;
- to determine the removal efficiency of vehicle emissions in the air of the house versus the air of the attached garage; and
- to assess human exposure to levels of emissions found in the residence that have originated from vehicle start-up and cool-down in the attached garage.

This report presents the results of a modelling exercise to apportion the chemical compounds found in a residential home to their sources, namely, the outdoor air, the garage air, or the pre-test in-house air. The U.S. EPA’s Chemical Mass Balance 8.0 model (CMB) was used to conduct this analysis. The results presented herein are from a second season of winter testing (phase 2). The results of the CMB analysis of the first season of testing (phase1), using CMB 7.0, can be found in O’Leary’s report entitled “Infiltration of Vehicle Exhaust into Homes with Attached Garages: Field Study Results and Chemical Mass Balance Analysis.”

## 2 Source and Receptor Sample Profiles

### 2.1 Field Samples

Two types of tests were conducted: an evening hot soak evaporative emissions test and a morning cold start exhaust emissions test. At each house, seven air samples were collected with SUMMA™ canisters for volatile organic compound (VOC) analyses. The results of these analyses can be found in “Indoor Air Sampling for Infiltration of Vehicle Emissions to the House from the Attached Garage” by Graham *et al.* The sample types collected are summarized in Table 1. The in-house sample, for the purposes of modelling, is considered to be the receptor. The in-house pre-test, ambient (outdoor), and garage samples are considered to be sources. The hot soak test samples and cold start test samples were modelled separately as two distinct tests.

**Table 1: Samples Collected at each House.**

Sample	Acronym
Ambient	AMB
Hot Soak Pre-test In-house	HSPT
Hot Soak Garage	HSG
Hot Soak In-house	HSI
Cold Soak Pre-test In-house	CSPT
Cold Soak Garage	CSG
Cold Soak In-house	CSI

#### 2.1.1 In-house Receptor Profile

A segment of the receptor data input file containing the in-house receptor profile is located in Appendix A (along with four other input files). This file contains the measured concentrations of 31 hydrocarbon species and the uncertainty associated with the measurement of these species. The 31 hydrocarbon species

were selected out a possible 174 compounds for which the concentrations were known. The 31 hydrocarbon species used to model the results of the second phase of testing are those which were chosen for modelling in the first phase. The criteria governing the species selection was discussed by O'Leary in his phase 1 report. The list of species used for modelling is presented in Table 2.

**Table 2: Hydrocarbon Species Used for Modelling.**

Species	Acronym
Ethylene	ETHYL
Acetylene	ACETYL
Propylene	PROPYL
Propane	N-C3
Isobutene/1-butene	1BUTENE
n-butane	N-C4
2m-butane	2M-C4
n-pentane	N-C5
Cyclopentane	CYC-C5
2m-pentane & t-4m2-pentene	2M-C5
3m-pentane	3M-C5
n-hexane	N-C6
m-cyclopentane	MCYC-C5
Benzene	BENZENE
2m-hexane	2M-C6
3m-hexane & cyclohexene	3M-C6
224-tm-pentane/1-heptene	224TMC5
n-heptane	N-C7
Toluene/233-tm-pentane	TOLUENE
t-14-dm-cyH	DMCYCC6
n-octane/t-12-dm-cyH	N-C8
e-benzene	E-BENZ
M&p-xylene/23-dm-heptane	M&P-XYL
o-xylene	O-XYL
3e-toluene & 23-dm-octane	3E-TOLU
4e-toluene	4E-TOLU
n-decane	N-C10
3-ip-toluene	3IP-TOL
4-ip-toluene	4IP-TOL
n-undecane/12-dm-3e-benzene	N-C11
n-dodecane	N-C12

The uncertainties associated with each concentration are based on the measured values and were determined as follows:

- if the concentration of a species was greater than 10 times the quantitation limit (0.5 ng/L), then the uncertainty associated with that concentration was determined to be 10% of the concentration,
- if the concentration of a species was less than 10 times the quantitation limit (0.5 ng/L), then the uncertainty associated with that concentration was determined to be 50% of the concentration, or
- if the concentration of a species was less than the quantitation limit (0.5 ng/L), then the uncertainty associated with that concentration was determined to be 0.5 ng/L.

An exception to the above method of uncertainty determination occurs when the concentration of a species is zero. Since the model cannot process zero uncertainties, the uncertainty is arbitrarily set to a small value, namely 0.0001 ng/L. This indicates to the model that the species may be present at a very small concentration.

### 2.1.2 In-house Pre-test, Garage, and Ambient Air Source Profiles

A segment of the source profile input file is also located in Appendix A. The format of the source profile input file, requires the concentrations of the 31 species of hydrocarbons to be normalized and expressed as fractions. The uncertainties were determined using the original concentrations and the criteria discussed in section 2.1.1. These uncertainties were then propagated through to be expressed as the uncertainty associated with the normalized concentration.

## 2.2 Vehicle Emissions Samples

An Environment Canada test vehicle, which was previously characterized for its evaporative and exhaust emissions, was used in the garage while in hot soak and cold start modes. The characterisation of the test vehicle and the concentration profiles developed are discussed thoroughly in “Characterisation of the Tailpipe and Evaporative Emissions of the Test Vehicle for the Residential Garage Study” prepared by Graham *et al.* Table 3 presents a list of the exhaust and evaporative emission profiles that were also used as source profiles in the modelling. Two fuels were used during phase 2: fuel 1 was used in the vehicle for the tests at the first 8 houses (and at phase 1 test houses) and fuel 2 was used at the last 3 houses. Emissions profiles using both fuels have been developed.

**Table 3: Evaporative and Exhaust Profiles.**

Vehicle Profile	Acronym
Cold Start Profile from ERMD Vehicle Characterization Study Dec. 1997 (fuel 1)	COLDST97
Hot Start Profile from ERMD Vehicle Characterization Study Dec. 1997 (fuel 1)	HOTST97
Hot Soak Evaporative Profile from ERMD Vehicle Characterization Study Dec. 1997 (fuel 1)	EVAP97
Whole Gasoline Profile from ERMD Vehicle Characterization Study Dec. 1997 (fuel 1)	WHLGAS97
Cold Start Profile from ERMD Vehicle Characterization Study May 1999 (fuel 2)	COLDST99
Hot Soak Evaporative Profile from ERMD Vehicle Characterization Study May 1999 (fuel 2)	EVAP99
Whole Gasoline Profile from ERMD Vehicle Characterization Study May 1999 (fuel 2)	WHLGAS99

### 2.2.1 Cold Start Source Profiles

The cold start source profile (concentrations and uncertainties) for fuel 1, that was developed during the phase 1 modelling, was also used for the phase 2 modelling. The cold start source profile for fuel 2 was determined using the average of the concentrations (mg/phase) obtained from two “garage cycle” tests conducted at 0°C. The concentrations of the 31 compounds were then normalized and expressed as fractions. The uncertainties were determined using the standard deviations calculated from the two sets of concentrations, and these uncertainties were then propagated through to be expressed as the uncertainty associated with the normalized concentration.

### 2.2.2 Hot Start

The hot start source profile for fuel 1 was developed during the phase 1 modelling and was also used for the phase 2 modelling. A hot start source profile for fuel 2 was not developed since the results from the phase 1 modelling indicated that hot start emissions were not a substantial contributor to the receptor (i.e., the in-house sample).

### 2.2.3 Evaporative Source Profiles

The evaporative source profile for fuel 1 was also developed during the phase 1 modelling. As discussed by Graham *et al.*, the method by which the fuel 2 evaporative emissions were determined was different from the method used for fuel 1. The concentrations of the 31 compounds from the fuel 2 simulated evaporative emission results were normalized and expressed as fractions. The uncertainty associated with the simulated evaporative emission concentrations were determined by multiplying the uncertainty associated with the whole gas concentrations of fuel 2 (determined using the criteria discussed in section 2.1.1) by the ratio of evaporative emission concentrations to whole gas concentrations for fuel 1. The uncertainties associated with the fuel 2 normalized concentrations were determined using the uncertainties associated with the non-normalized simulated evaporative emission concentrations and then propagating them through to be expressed as the uncertainty associated with the normalized concentration.



#### 2.2.4 Whole gas Source Profiles

The whole gas source profile for fuel 1 was developed during the phase 1 modelling and was used for the phase 2 modelling. The whole gas source profile represents the concentrations of chemical species in the liquid-phase gasoline. The concentrations of the 31 hydrocarbon species for fuel 2 were normalized. The uncertainties were determined using the original concentrations and the criteria as discussed in section 2.1.1, and these uncertainties were then propagated through to be expressed as the uncertainty associated with the normalized concentrations.

### 3 Modelling Procedure

#### 3.1 Model Overview

A chemical mass balance receptor model uses the concentrations and uncertainties of selected chemical species measured in source and receptor samples to estimate the contributions of the different source types to the receptor concentrations. The CMB model uses the source and receptor input files discussed previously to develop a solution of linear equations that express each measured receptor species concentration as a linear sum of the product of source profile abundances and source contribution estimates. The source profile abundances are the normalized species concentrations in the source samples. The effective variance weighted solution analytically estimates the uncertainty of the source contribution estimates based on the precisions of both the receptor concentrations and source profiles. It gives greater influence to chemical species with higher precisions in both the source and receptor measurements than to species with lower precisions.

The output consists of the amount contributed by each source type and the performance measures. The physical and mathematical principles that define a chemical mass balance and CMB are discussed in the phase 1 report.

#### 3.2 Performance Measures

Various performance measures are used to evaluate the validity of source contribution estimates. These performance measures and the model output have also been discussed in the phase 1 report. A brief review of the performance measures is presented below to aid in the discussion to follow.

The **source contribution estimate (SCE)** is the contribution from the source type to the receptor sample. The source elimination option automatically removes negative SCEs or SCEs less than the corresponding standard error before printing the solution. Fitting sources are automatically eliminated one at a time, in sequential order, with fits performed after each elimination until all source contribution estimates are positive.

The **standard error STD ERR** of the SCE is expressed as one standard deviation of the most probable SCE. This is an indicator of the certainty of each SCE. The STD ERR is estimated by propagating the precision of the receptor data and source profiles through the effective variance least-squares calculations. Its magnitude is a function of the uncertainties of the input data and the amount of collinearity among source profiles.

The **t-statistic (TSTAT)** is the ratio of the SCE to the STD ERR. A TSTAT value of less than 2.0 indicates the SCE is at or below a level of significance. Low TSTAT values may be caused by collinearity among the profiles. Source profiles with TSTATs below 2 were removed manually one by one from the model input for each modelling run.

$\chi^2$  is the weighted sum of squares of the differences between the calculated and measured fitting species concentrations. A value less than 1 indicates a very good fit to the data, while values between 1 and 2 are acceptable. A  $\chi^2$  of zero would indicate no difference between calculated and measured species concentrations. A value greater than 4 indicates that one or more of the calculated species concentrations differs from the measured concentrations by several uncertainty intervals. High values indicate:

1. contributing sources have been omitted from the CMB calculation,
2. one or more source profiles have been selected which do not represent the contributing source types,
3. precisions of receptor or source profile data are underestimated, and/or

4. source or receptor data are inaccurate.

$R^2$  is the variance in the receptor species concentrations explained by the calculated species concentration. A low  $R^2$  (<0.8) indicates that the selected source profiles have not accounted for the variance in the selected receptor concentrations. The range of acceptable values is 0.8 to 1.0.

The **percent mass** is the sum of the SCE divided by the total concentration. A value approaching 100% is desired. The range of acceptable values is 80% to 120%.

The **degrees of freedom** is the number of species in the fit minus the number sources in the fit. Solutions with larger degrees of freedom are typically more stable than one with small degrees of freedom. The target number is greater than 5. All runs in this analysis have degrees of freedom greater than 26.

The **ratio of residual to its uncertainty (R/U)** is the signed difference between the calculated and measured concentration (the residual) divided by the uncertainty of that residual (square root of the sum of the squares of the uncertainty in the calculated and measured concentrations). R/U is used to identify species that are over or under accounted for by the model. The R/U specifies the number of uncertainty intervals by which the calculated and measured concentration differ. When the absolute value of the R/U exceeds 2, the residual is significant. If it is positive, then one or more of the profiles is contributing too much to that species. If it is negative, then there is an insufficient contribution to that species and a source may be missing. The sum of the R/U for the fitting species divided by the degrees of freedom yields the  $\chi^2$ . The highest R/U values for the fitting species are the cause for high  $\chi^2$  values.

The similarity/uncertainty clusters in version 7.0 displayed groups of sources which the model could not easily distinguish between and that were likely to be interfering with the model's ability to provide a good set of SCEs. In version 8.0, the similarity/uncertainty clusters have been replaced with an "estimable linear combinations of inestimable sources" display that identifies collinearity among sources.

### 3.3 Source Profile and Species Selection

Each in-house receptor sample was modelled using the appropriate pre-test in-house source profile and the ambient (outdoor) source profile, together with one of the following:

1. scenario 1 (S1): garage source profile (HSG or CSG)), or
2. scenario 2 (S2): hot start (HOTST97), evaporative (EVAP97 or EVAP99), cold start (COLDST97 or COLDST99), and whole gas (WHLGAS97 or WHLGAS99) source profiles.

The hot soak test samples were modelled separately from the cold start test samples. The hot soak profile was included for the cold start analyses to account for the possibility that hot soak emissions remained in the garage for the cold start test. The cold start profile was not selected as input for the hot soak analyses since there would have been no cold start in the garage in the preceding 24 hours. All 31 species were selected for each model run, however, a species with a measured concentration of zero in the receptor profile was deselected.

## 4 Modelling Results and Discussion

The following model output are located in Appendix B:

1. scenario 1 hot soak model analyses,
2. scenario 2 hot soak model analyses,
3. scenario 1 cold start model analyses, and
4. scenario 2 cold start model analyses.

### 4.1 Source Contribution Estimates

Table 4 summarizes the SCEs obtained from the hot soak test model output. (The final digit of the Receptor Sample code identifies the scenario number.)

**Table 4: Source Contribution Estimates for Hot Soak Tests.**

Receptor Sample	PT	AMB	Scenario 1	Scenario 2		
			G	HOTST	EVAP	WHLGAS
JE-HSH-1	86.3	0.0	19.1			
JE-HSH-2	87.9	0.0			17.7	0.0
SV-HSH-1	70.4	0.0	20.7			
SV-HSH-2	75.5	0.0			0.0	19.6
MH-HSH-1	32.4	40.5	20.0			
MH-HSH-2	33.1	40.0			20.9	0.0
SR-HSH-1	13.7	27.7	57.1			
SR-HSH-2	26.9	0.0			71.4	0.0
JS-HSH-1	65.8	0.0	22.4			
JS-HSH-2	67.5	0.0			10.7	9.6
PB-HSH-1	87.6	0.0	11.1			
PB-HSH-2	91.1	0.0			0.0	8.8
GS-HSH-1	71.2	0.0	23.1			
GS-HSH-2	72.4	0.0			21.1	0.0
RW-HSH-1	20.2	12.2	66.7			
RW-HSH-2	21.0	8.7			71.4	0.0
KR-HSH-1	56.0	0.0	43.4			
KR-HSH-2	58.8	0.0		6.0	21.1	13.7
FA-HSH-1	46.5	0.0	54.1			
FA-HSH-2	51.2	0.0			49.2	0.0
HD2-HSH-1	14.5	7.6	74.8			
HD2-HSH-2	18.6	5.8			55.2	14.8

Note: HD house was tested during both phase 1 and phase 2. HD2 represents HD house phase 2.

The scenario 1 garage SCEs during the hot soak test range from 11.1% at PB house to 74.8% at HD house. The scenario 2 vehicle emissions SCEs during the hot soak test range from 8.8% at PB house to 71.4% at RW and SR houses.

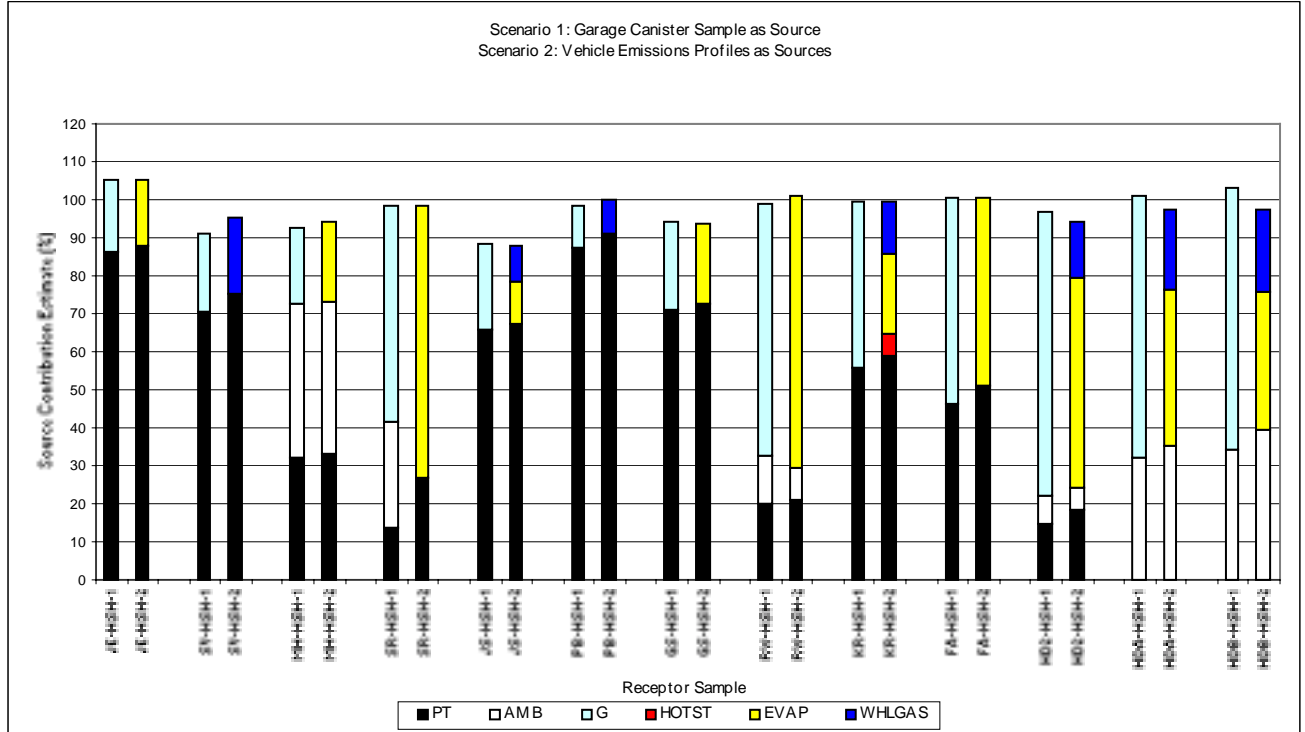
**Table 5: Source Contribution Estimates for Cold Start Tests.**

Receptor Sample	PT	AMB	Scenario 1	Scenario 2	
			G	COLDST	WHLGAS
JE-CSH-1	27.1	0.0	73.7		
JE-CSH-2	27.2	0.0		64.5	8.4
SV-CSH-1	29.8	11.9	51.8		
SV-CSH-2	29.5	14.4		50.8	0.0
MH-CSH-1	16.3	0.0	82.2		
MH-CSH-2	0.0	25.1		51.0	23.3
SR-CSH-1	38.0	0.0	61.0		
SR-CSH-2	44.1	0.0		56.5	0.0
JS-CSH-1	82.3	0.0	18.2		
JS-CSH-2	81.5	0.0		14.2	4.5
PB-CSH-1	64.9	0.0	34.2		
PB-CSH-2	65.1	0.0		24.3	9.3
GS-CSH-1	24.8	0.0	72.6		
GS-CSH-2	26.6	0.0		54.4	16.0
RW-CSH-1	24.2	0.0	74.0		
RW-CSH-2	17.2	6.2		55.8	18.4
KR-CSH-1	73.1	0.0	20.2		
KR-CSH-2	74.9	0.0		15.1	4.5
FA-CSH-1	41.9	0.0	57.4		
FA-CSH-2	39.5	10.9		30.5	18.3
HD2-CSH-1	32.9	7.8	44.3		
HD2-CSH-2	40.2	0.0		38.0	10.7

The scenario 1 garage SCEs during the cold start test range from 18.2% at JS house to 82.2% at MH house. The scenario 2 vehicle emissions SCEs during the cold start test range from 18.7% at JS house to 74.3% at MH house.

Figure 1 and Figure 3 graphically summarize the SCEs obtained from the model output.

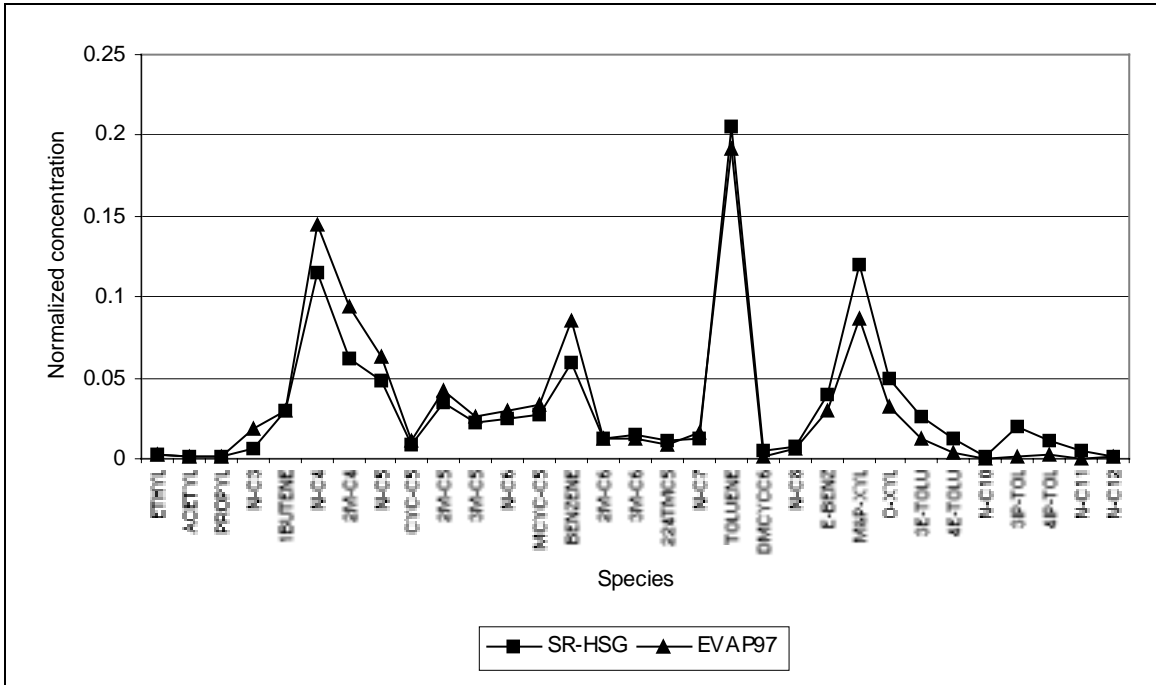
**Figure 1: Hot Soak Source Contribution Estimates**



Note: HD house was tested during both phase 1 and phase 2. Results from both phases have been modelled as a means of comparing the modelling procedure used for phase 1 and phase 2 data. HD2 signifies HD house phase 2 test, HDA signifies HD house phase 1 test with uncertainties calculated by the author, and HDB signifies HD house phase 1 test with uncertainties calculated by O'Leary. A discussion of the comparison will be presented later in this section.

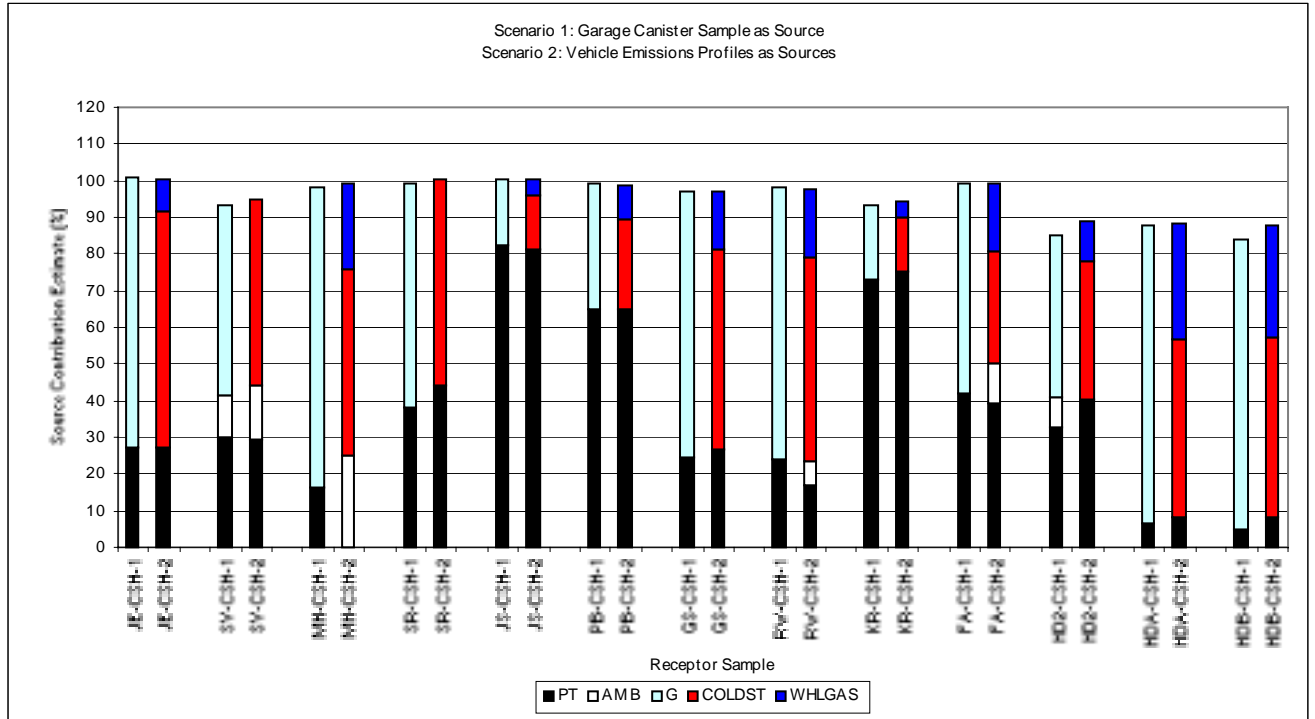
The SCE from the garage source profile in scenario 1 are typically within 5% of the SCE from the sum of the vehicle emission sources in scenario 2 for all the hot soak tests at each house. The exception is shown in the SR model results. Here, the scenario 1 results show an ambient (outdoor) contribution, whereas, the scenario 2 results show no ambient contribution. This exception can be described with reference to Figure 2.

**Figure 2: Concentration Profiles of SR-HSG and EVAP97**



The concentrations of TOLUENE and E-BENZ through to 4E-TOLU in the SR-HSG profile are greater than the concentrations of the those species in the EVAP97 profile. This means that the concentration of those species in the garage is greater than what the evaporative emissions characterisation of the vehicle indicates should be in the garage. To account for this, the model may be “diluting” the garage sample with the ambient air, thus giving an ambient SCE in the model output.

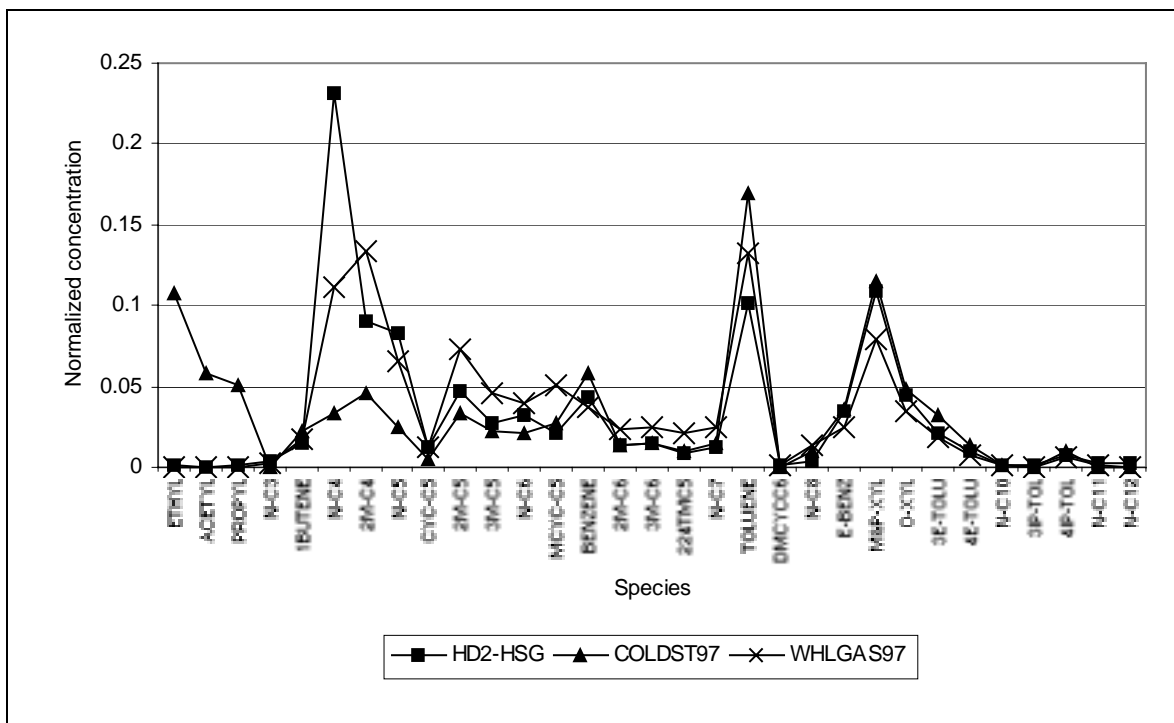
**Figure 3: Cold Start Source Contribution Estimates**



The SCE from the garage source profile in scenario 1 are also typically within 4% of the SCE from the sum of the vehicle emission source profiles in scenario 2 for the cold start tests at each house. The exceptions are shown in the MH, RW, FA, and HD2 model results. In the MH, RW, and FA results there is an ambient contribution for scenario 2, but no ambient contribution for scenario 1. Scenario 2 SCEs show ambient contributions because the garage canister samples in scenario 1, and hence source profiles, likely have a considerable amount of ambient air in them which accounts for a contribution of ambient air to the in-house receptor sample. The scenario 2 results need an ambient SCE to account for the ambient air sampled since the no ambient air is provided in the vehicle emissions profiles.

The HD2 scenario 1 SCEs show an ambient (outdoor) contribution, whereas, the scenario 2 results show no ambient contribution. This result is similar to that discussed previously for the SR-HSH SCEs. Figure 4 presents the concentration profiles for garage and vehicle emissions for HD2-CSH.

**Figure 4: Concentration Profiles of HD2-CSG, COLDST97, and WHLGAS97.**



In Figure 4, the concentrations of the species from N-C4 to N-C6 in garage profile are greater than that in the cold start emission profile. Again, the garage profile possibly needs to be “diluted” with ambient air by the model, and this gives rise to the ambient SCE in the scenario 1 output.

An attempt to remodel JE-HSH with the hot start profile included was conducted because there were, in fact, 2 hot starts in the garage during an effort to fit the test vehicle into the small garage. The results of this run are included in Appendix C, however, the SCE for HOTST97 is negative indicating the source profile is similar to another source profile or more likely, the SCE is close to zero.

#### 4.2 Performance Measures

Table 6 and Table 7 present the performance measures for the final hot soak test and cold start test model output, respectively.

**Table 6: Performance Measures for Hot Soak Analyses.**

Receptor Sample	Scenario 1			Scenario 2		
	R <sup>2</sup>	χ <sup>2</sup>	% mass	R <sup>2</sup>	χ <sup>2</sup>	% mass
JE-HSH	0.94	0.44	105.4	0.94	0.44	105.5
SV-HSH	0.94	1.65	91.0	0.95	1.34	95.1
MH-HSH	0.94	1.10	92.8	0.95	0.98	94.0
SR-HSH	0.96	0.63	98.5	0.97	0.61	98.3
JS-HSH	0.86	<b>6.32</b>	88.2	0.86	<b>6.55</b>	87.8
PB-HSH	0.95	1.37	98.7	0.95	1.45	99.9
GS-HSH	0.95	1.27	94.3	0.95	1.35	93.5
RW-HSH	0.95	1.38	99.1	0.94	1.29	101.1
KR-HSH	0.97	1.18	99.4	0.98	0.95	99.6
FA-HSH	0.92	1.80	100.6	0.91	1.71	100.4
HD2HSH	0.97	1.38	96.9	0.98	0.94	94.3
average	0.94	1.68	96.81	0.94	1.60	97.23

**Table 7: Performance Measures for Cold Start Analyses.**

Receptor Sample	Scenario 1			Scenario 2		
	R <sup>2</sup>	χ <sup>2</sup>	% mass	R <sup>2</sup>	χ <sup>2</sup>	% mass
JE-CSH	0.97	0.72	100.8	0.96	0.90	100.2
SV-CSH	0.91	3.50	93.5	0.89	3.44	94.7
MH-CSH	0.97	1.44	98.4	0.95	1.80	99.3
SR-CSH	0.93	2.35	99.0	0.93	1.92	100.6
JS-CSH	0.99	0.50	100.5	0.99	0.50	100.3
PB-CSH	0.97	1.18	99.1	0.96	1.55	98.7
GS-CSH	0.96	1.68	97.4	0.93	2.76	97.1
RW-CSH	0.95	1.89	98.2	0.93	2.74	97.5
KR-CSH	0.97	1.35	93.2	0.96	1.72	94.6
FA-CSH	0.99	0.22	99.3	0.97	0.61	99.2
HD2-CSH	0.92	<b>4.26</b>	85.0	0.93	<b>4.15</b>	88.9
average	0.96	1.74	96.8	0.95	2.01	97.4

The performance measures for all of the final model run output are within the ranges of acceptable values except for the JS-HSH and HD2-CSH results. For both of these tests, the  $\chi^2$  for both scenario 1 and 2 are outside of the range of acceptable values ( $\chi^2 < 4.0$ ). As explained in section 3.2,  $\chi^2$  is the weighted sum of squares of the differences between the calculated and measured fitting species concentrations. High values indicate:

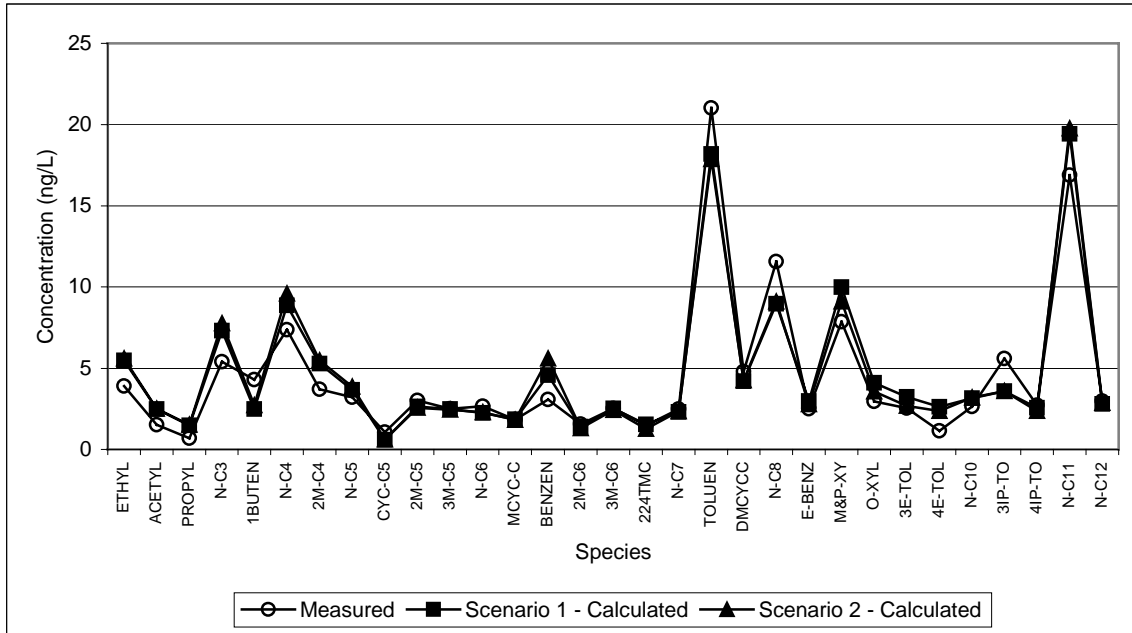
1. contributing sources have been omitted from the CMB calculation,
2. one or more source profiles have been selected which do not represent the contributing source types,
3. precisions of receptor or source profile data are underestimated, and/or
4. source or receptor data are inaccurate.

Figure 5 through Figure 26 present plots of the measured and calculated species concentrations. The high  $\chi^2$  values discussed above can be further explained with reference to Figure 9 and Figure 26. In Figure 9 (JS-HSH), there are three species that show a difference between the measured and calculated concentrations. The measured concentration of 2M-C4 (2m-butane) and N-C10 (n-decane) are higher than both the calculated concentrations, and the measured concentration of 4IP-TOL (4-ip-toluene) is lower than both of the calculated concentrations. The ratio of residual to its uncertainty (R/U) values (taken from the model output in Appendix B) for 2M-C4, N-C10 and 4IP-TOL are -2.6, -9.3, and 5.6 for scenario 1 and -2.3, -9.4, and 5.6 for scenario 2, respectively. Since the highest absolute values of R/U are the cause for the high  $\chi^2$  values and the N-C10 R/U value is negative, it is suspected that there may be a source of n-decane at the house not accounted for in the model.

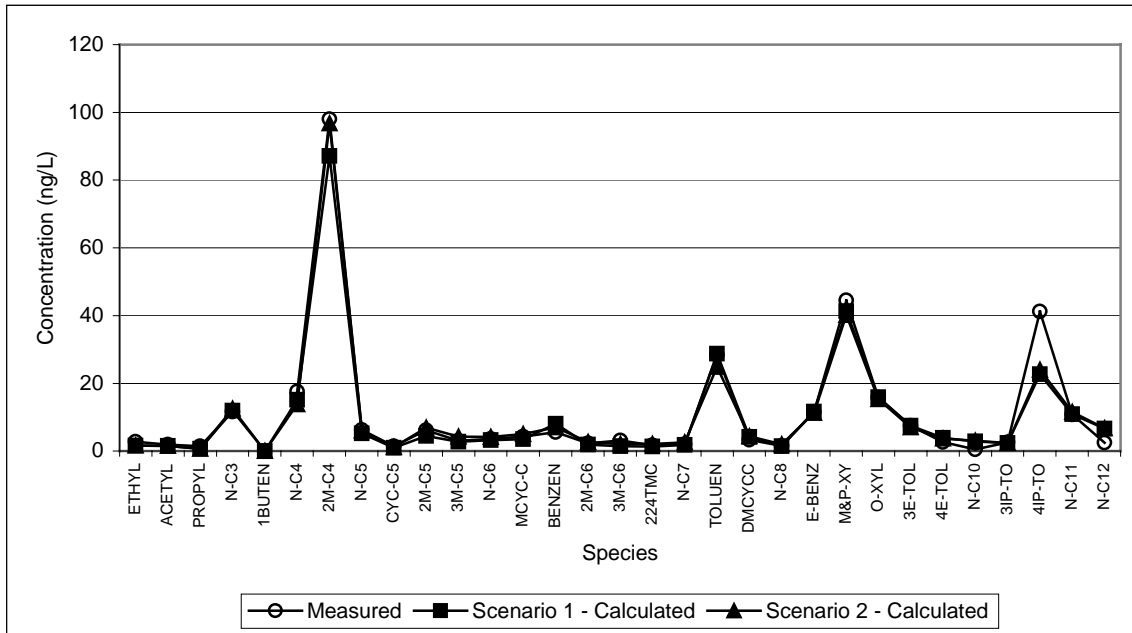
In Figure 26 (HD-CSH), the measured concentration of N-C3 (propane) is considerably higher than both calculated concentrations indicating there may be an additional source of propane at the house that has not been accounted for in the model.



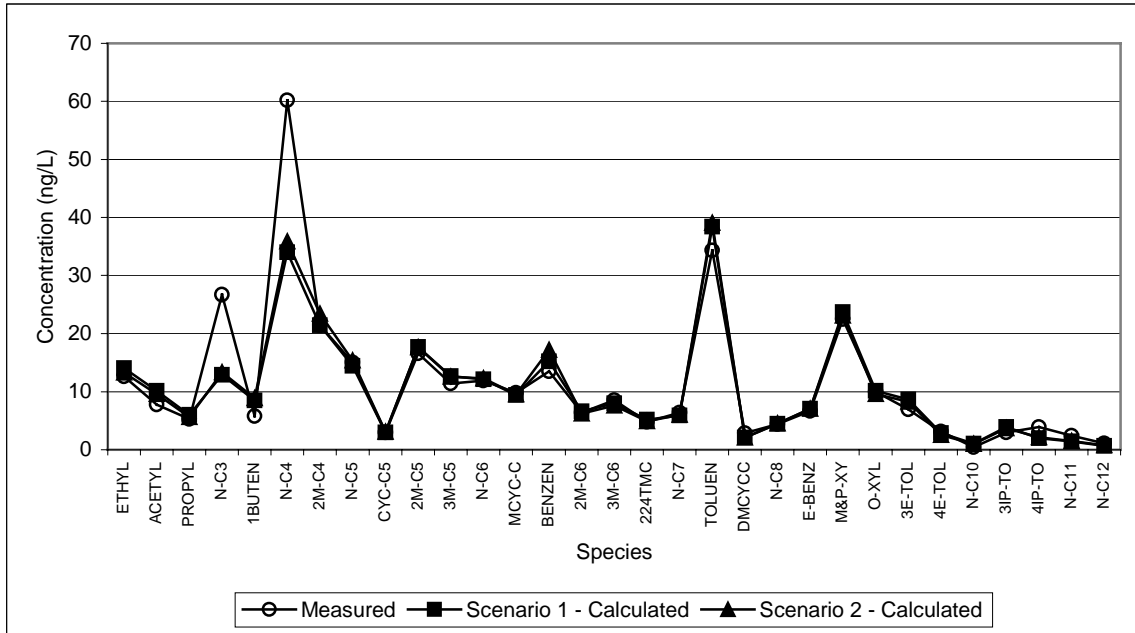
**Figure 5: Measured and Calculated Species Concentrations during the Hot Soak Test at JE House.**



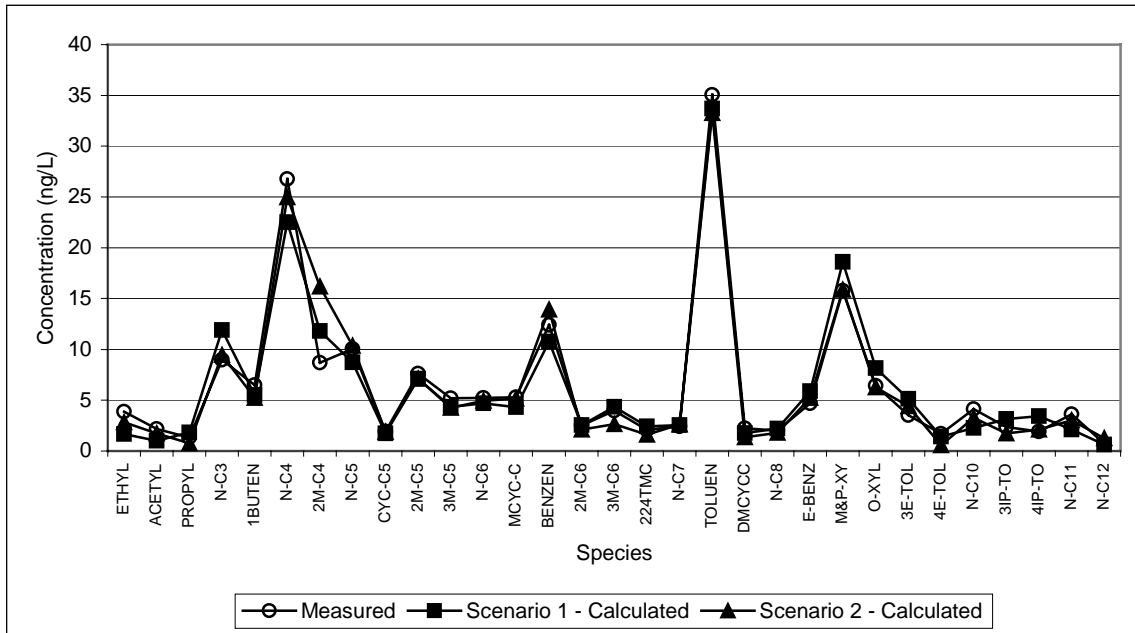
**Figure 6: Measured and Calculated Species Concentrations during the Hot Soak Test at SV House.**



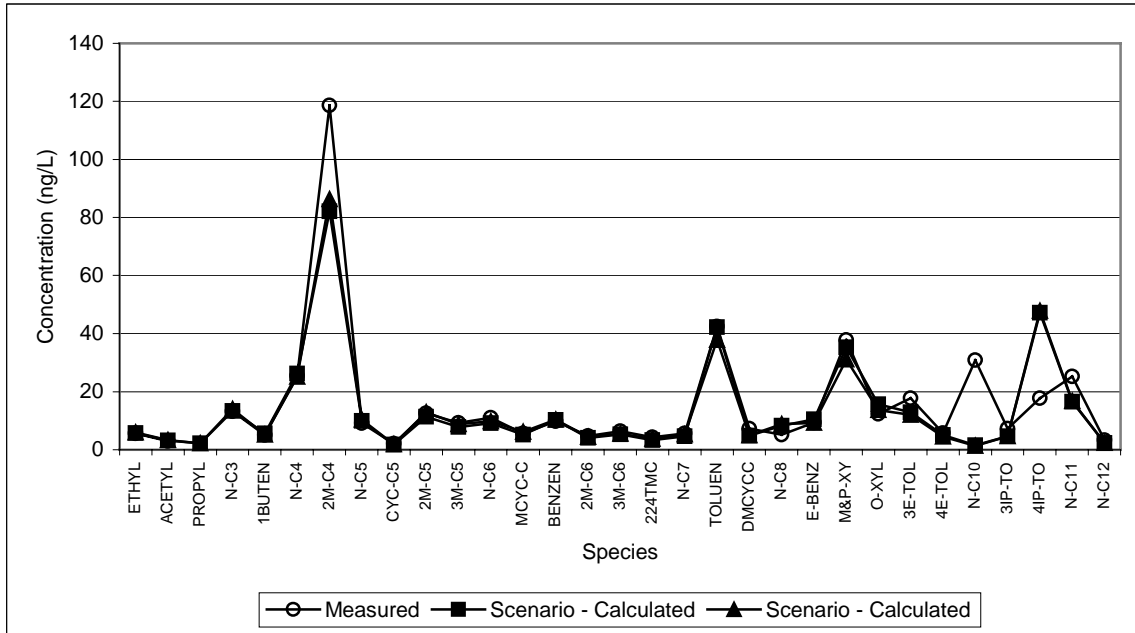
**Figure 7: Measured and Calculated Species Concentrations during the Hot Soak Test at MH House.**



**Figure 8: Measured and Calculated Species Concentrations during the Hot Soak Test at SR House.**



**Figure 9: Measured and Calculated Species Concentrations during the Hot Soak Test at JS House.**



**Figure 10: Measured and Calculated Species Concentrations during the Hot Soak Test at PB House.**

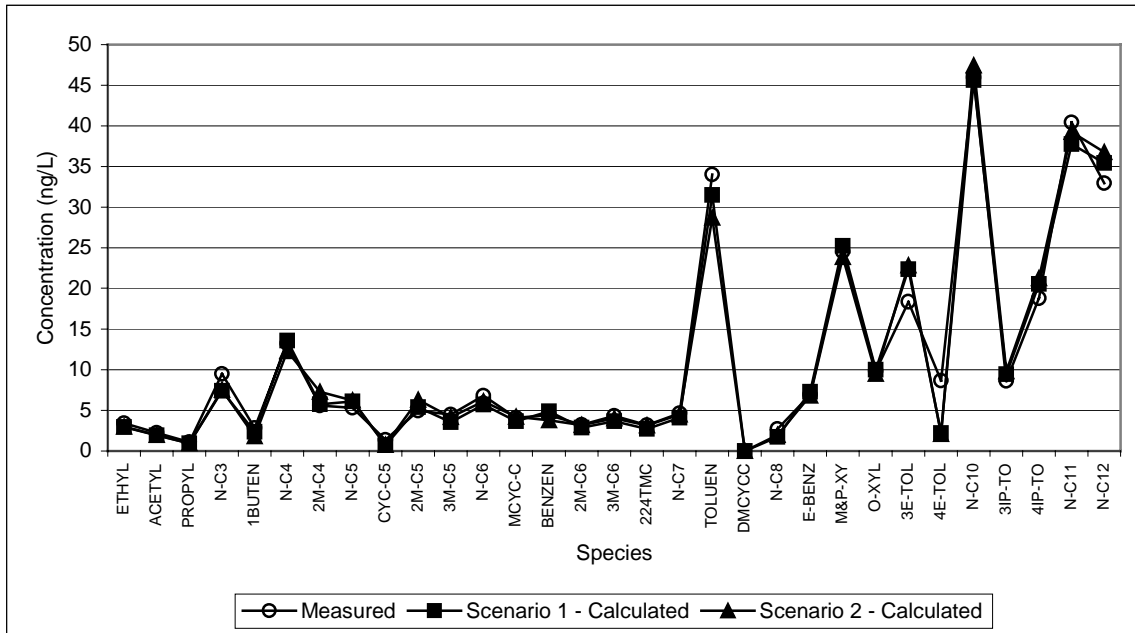


Figure 11: Measured and Calculated Species Concentrations during the Hot Soak Test at GS House.

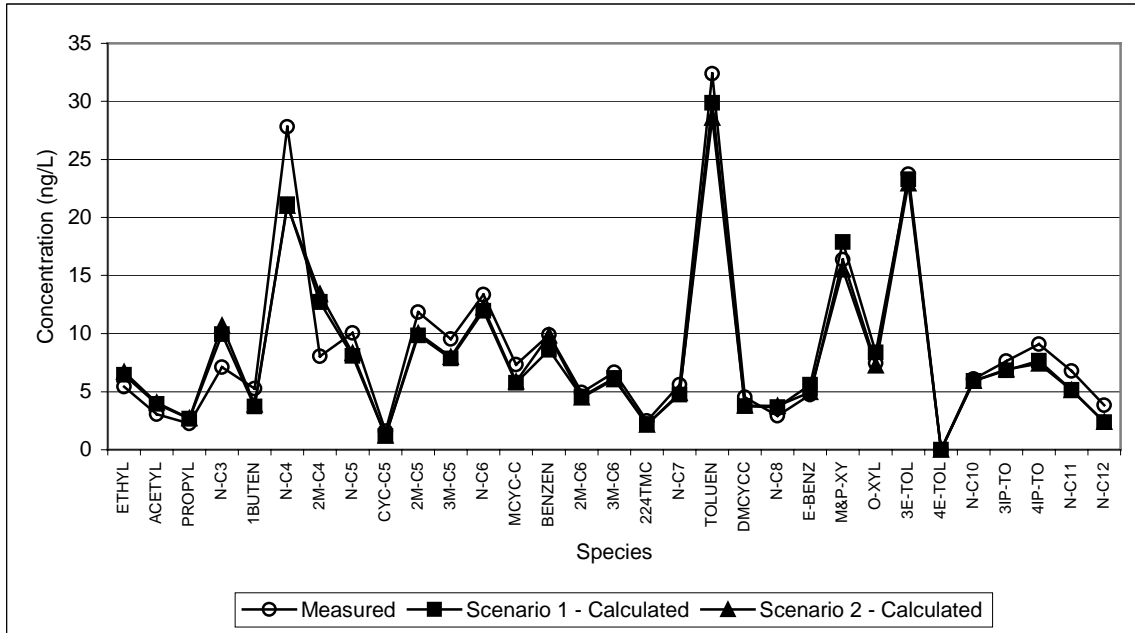


Figure 12: Measured and Calculated Species Concentrations during the Hot Soak Test at RW House.

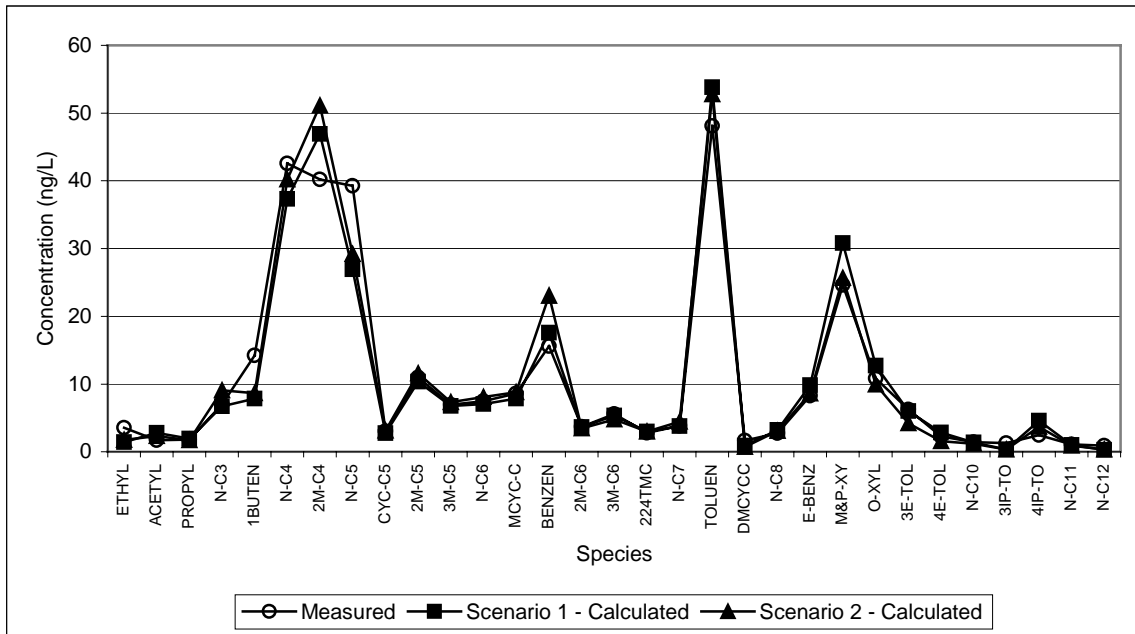


Figure 13: Measured and Calculated Species Concentrations during the Hot Soak Test at KR House.

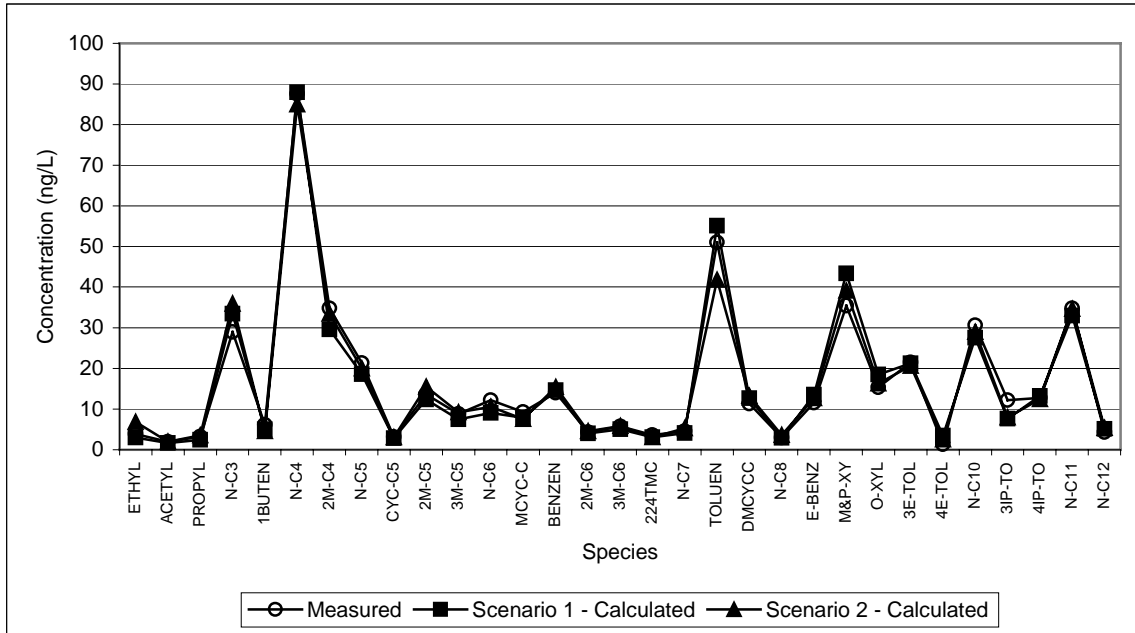


Figure 14: Measured and Calculated Species Concentrations during the Hot Soak Test at FA House.

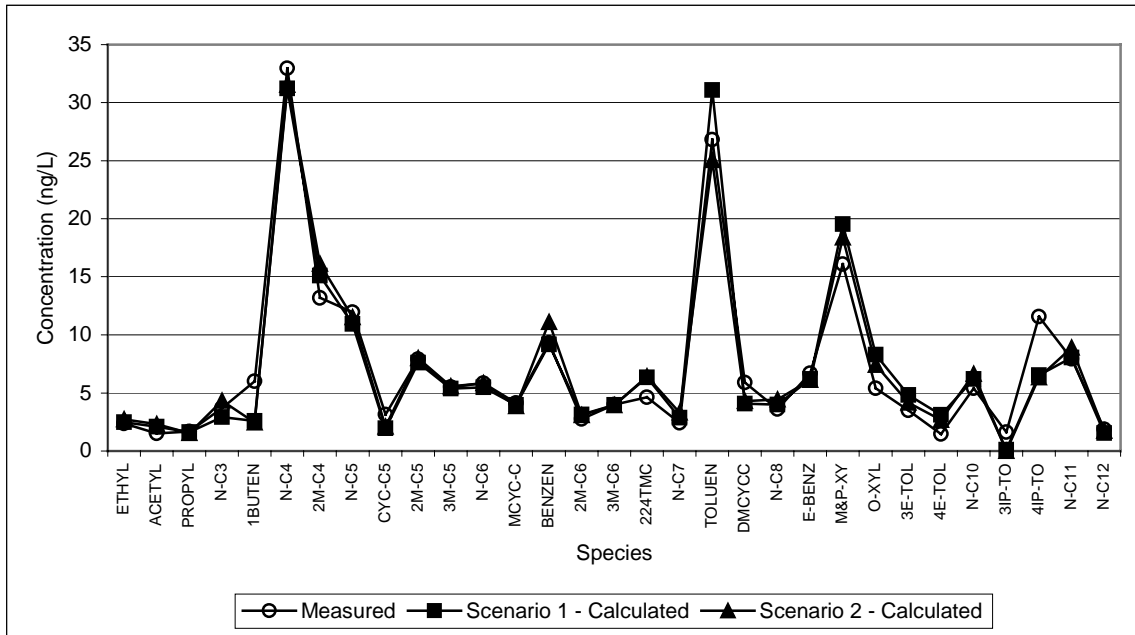


Figure 15: Measured and Calculated Species Concentrations during the Hot Soak Test at HD House.

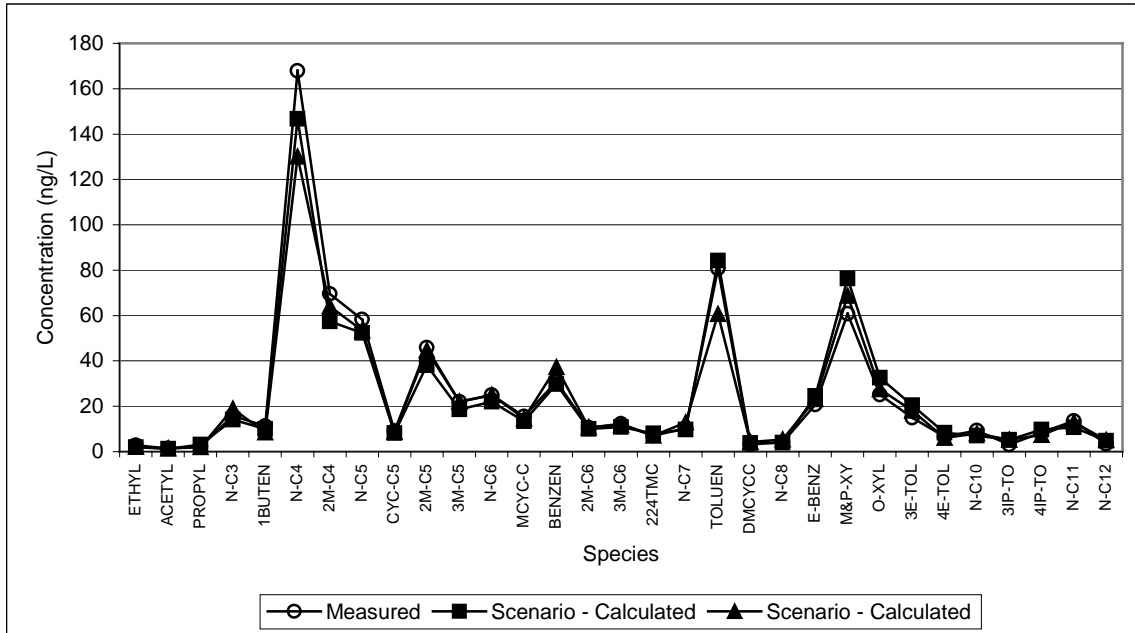
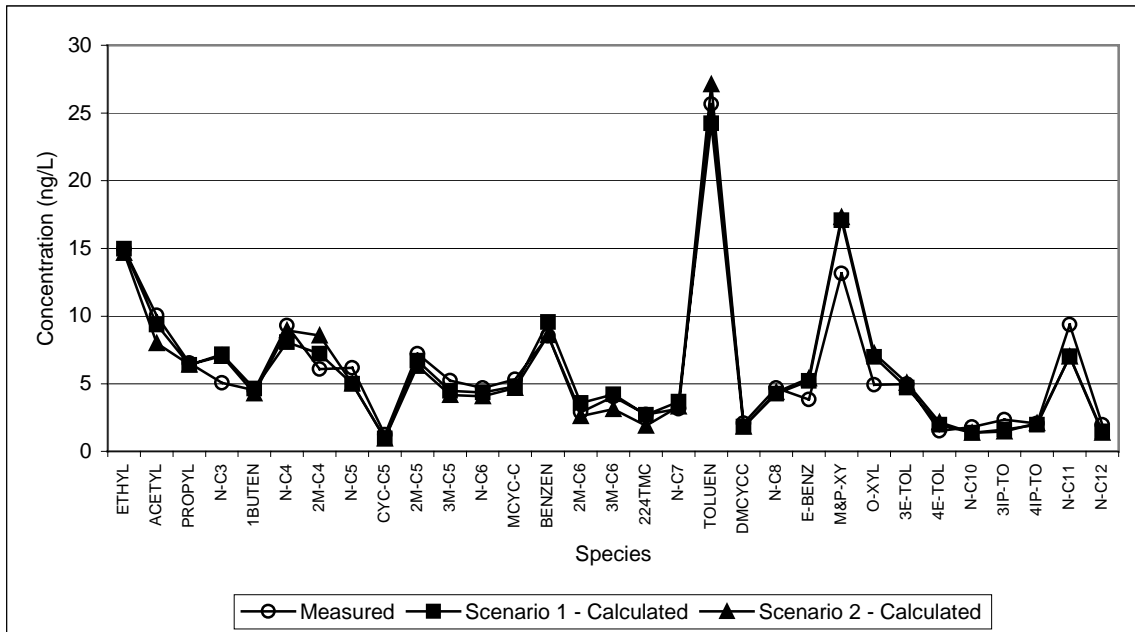
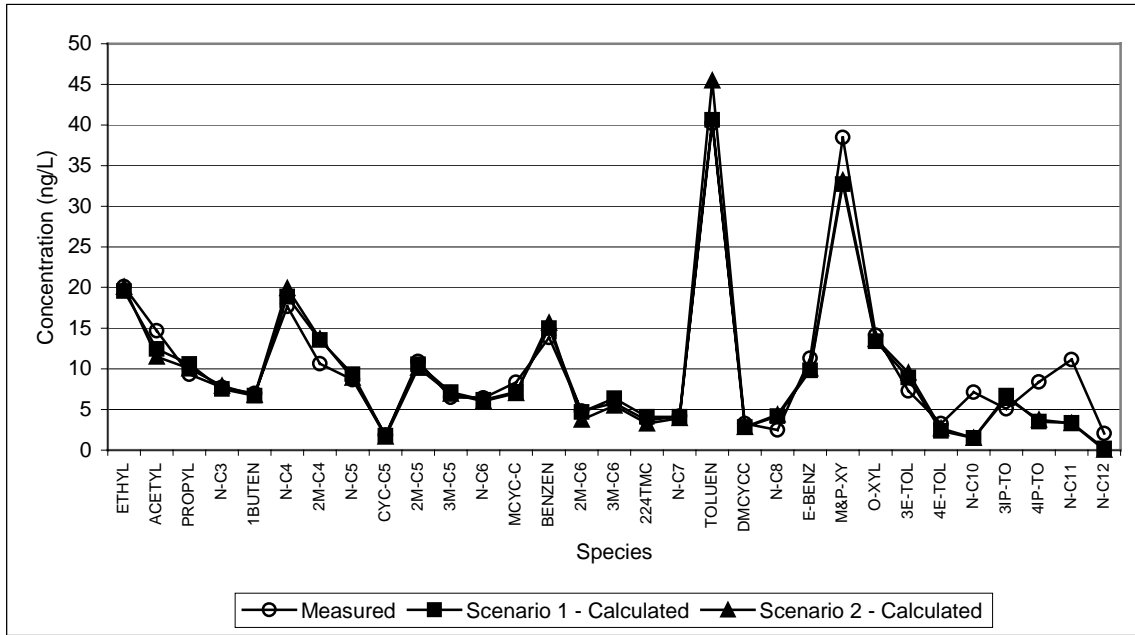


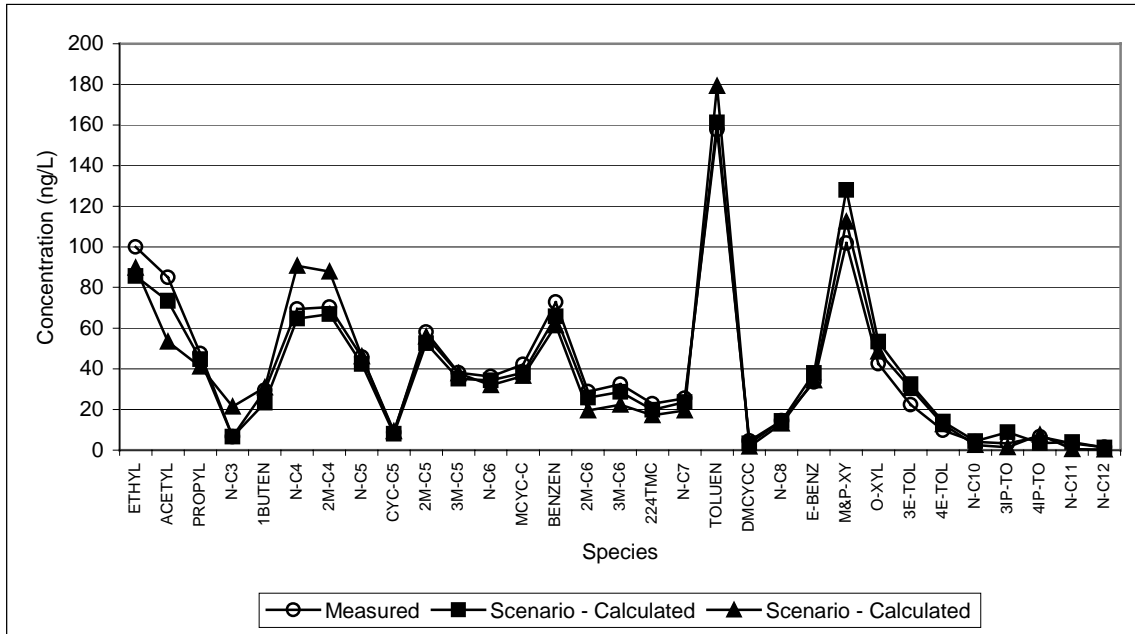
Figure 16: Measured and Calculated Species Concentrations during the Cold Start Test at JE House.



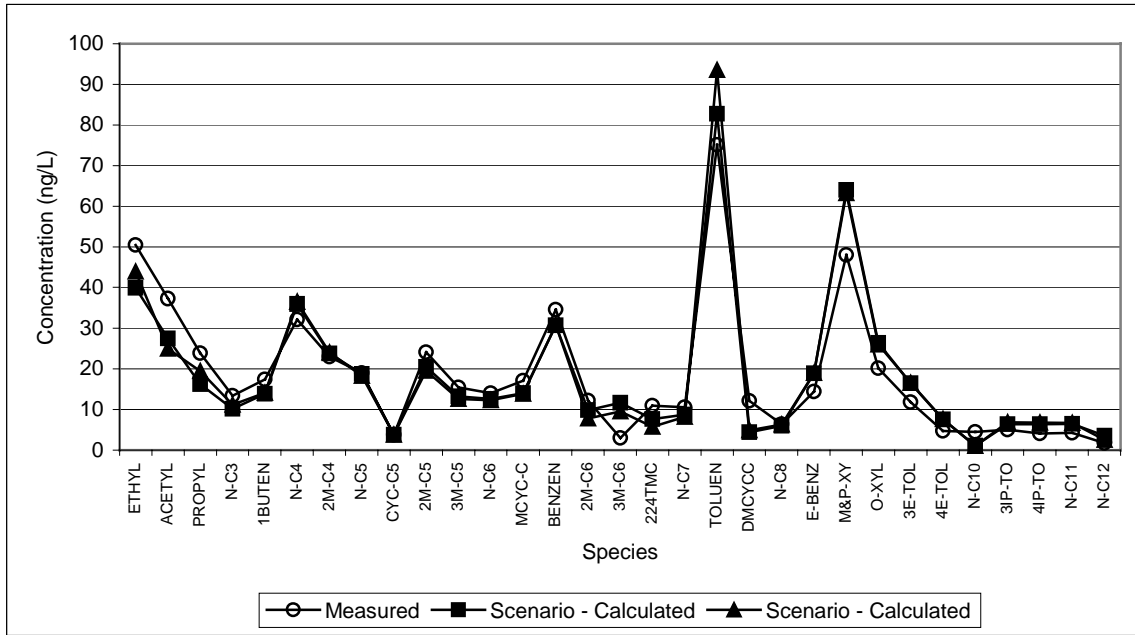
**Figure 17: Measured and Calculated Species Concentrations during the Cold Start Test at SV House.**



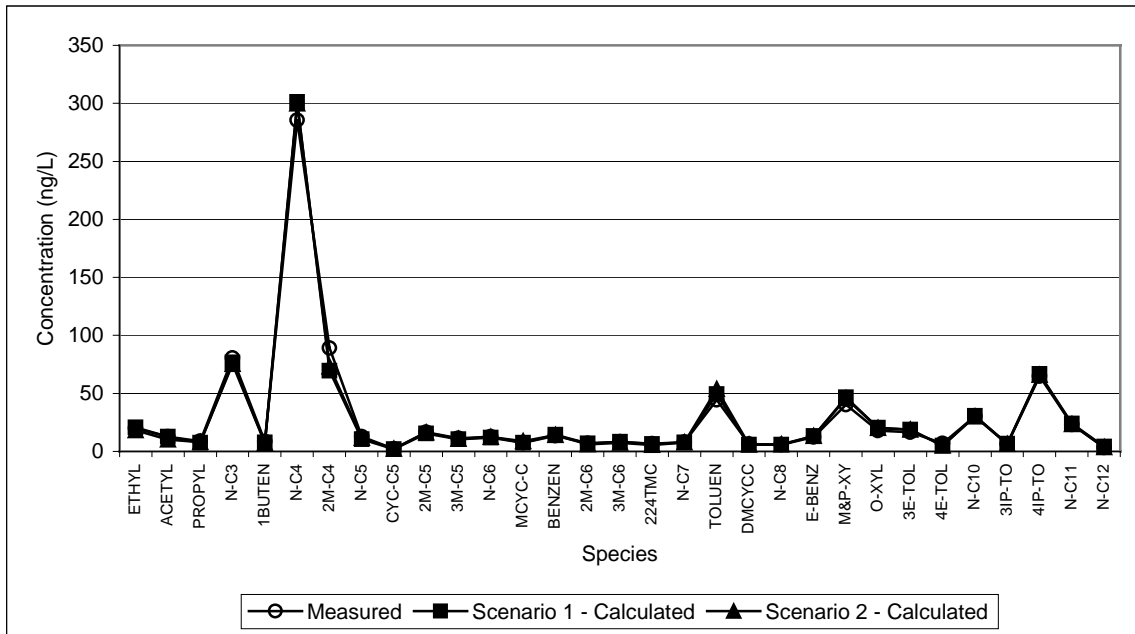
**Figure 18: Measured and Calculated Species Concentrations during the Cold Start Test at MH House.**



**Figure 19: Measured and Calculated Species Concentrations during the Cold Start Test at SR House.**

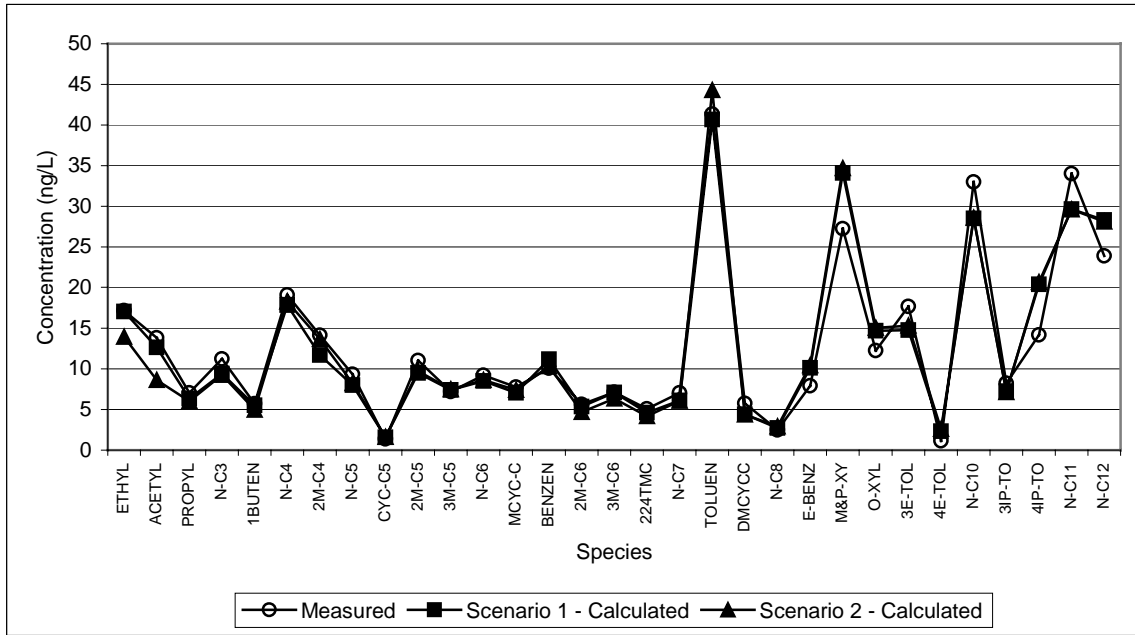


**Figure 20: Measured and Calculated Species Concentrations during the Cold Start Test at JS House.**

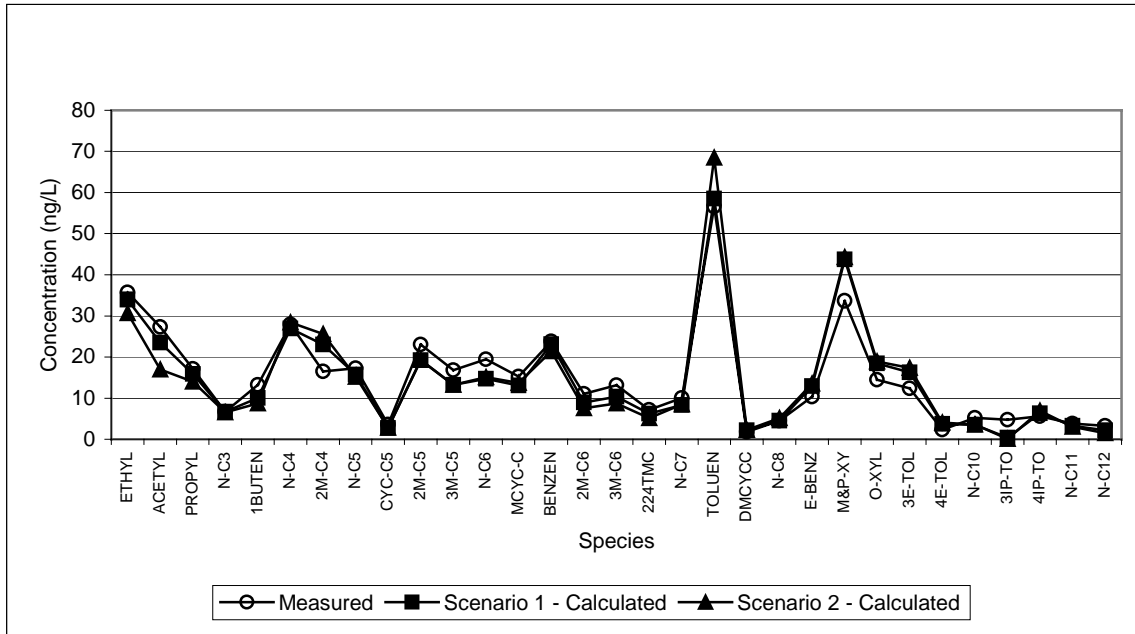




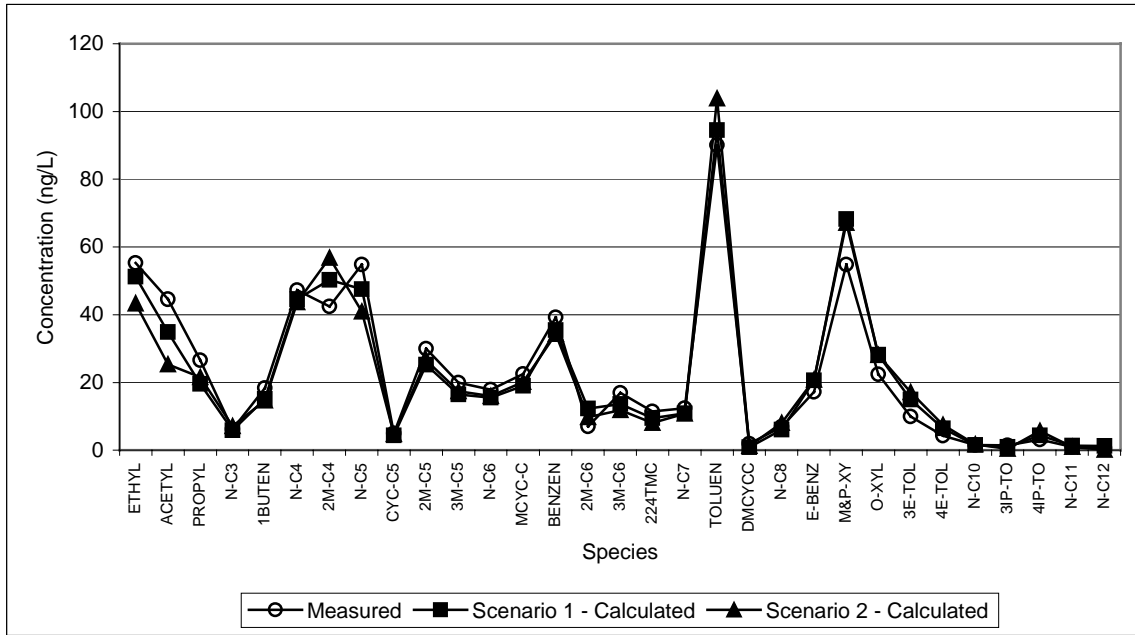
**Figure 21: Measured and Calculated Species Concentrations during the Cold Start Test at PB House.**



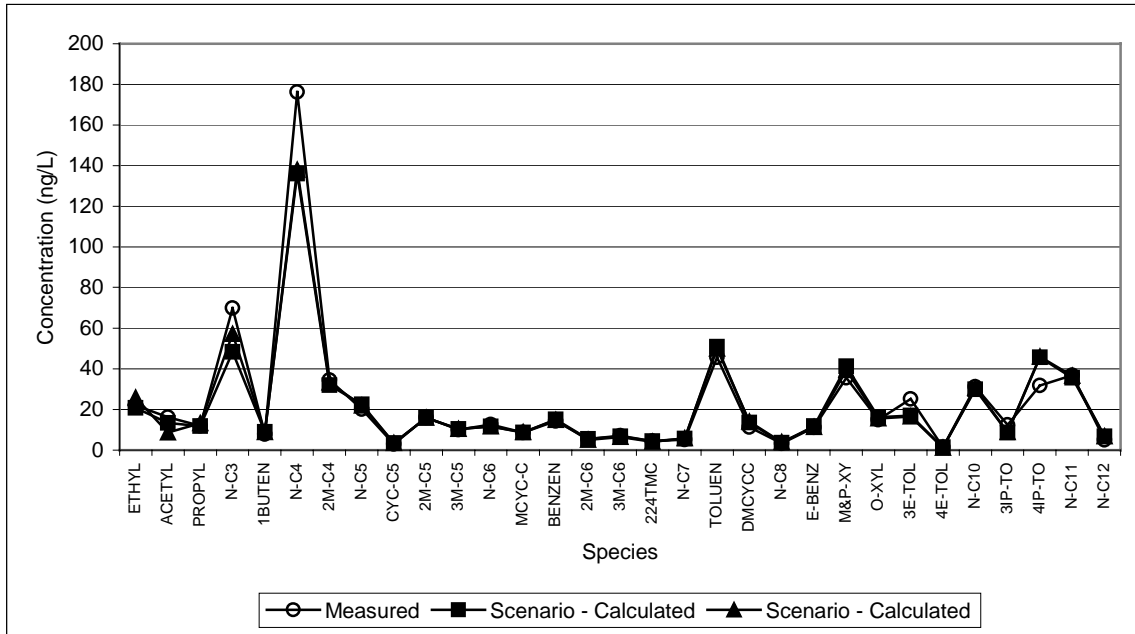
**Figure 22: Measured and Calculated Species Concentrations during the Cold Start Test at GS House.**



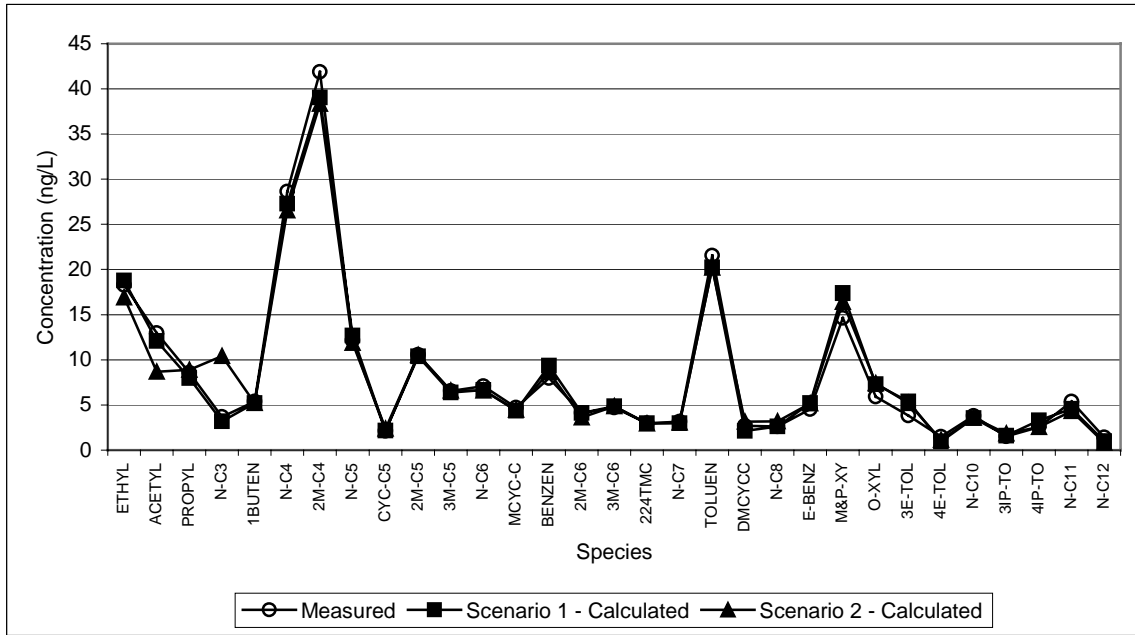
**Figure 23: Measured and Calculated Species Concentrations during the Cold Start Test at RW House.**



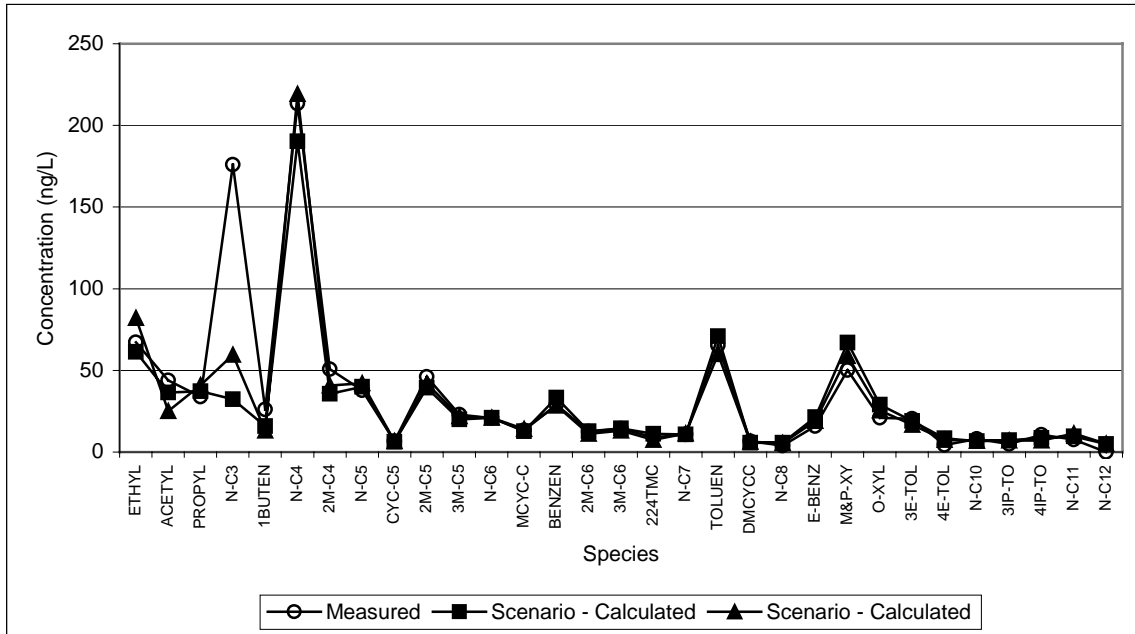
**Figure 24: Measured and Calculated Species Concentrations during the Cold Start Test at KR House.**



**Figure 25: Measured and Calculated Species Concentrations during the Cold Start Test at FA House.**



**Figure 26: Measured and Calculated Species Concentrations during the Cold Start Test at HD House.**



In addition to the differences between the measured and calculated species concentrations shown in Figure 9 and Figure 26 discussed previously; Figure 7, Figure 19, and Figure 24 also show differences in measured and calculated species concentrations. Figure 7 (MH-HSH) shows an approximately 25 ng/L concentration difference for N-C4 (n-butane). Figure 19 (SR-CSH) shows an approximately 10 ng/L concentration difference for some of the lighter species and for M&P-XY (m&p xylenes). Figure 24 (KR-CSH) shows an approximately 40 ng/L concentration difference for N-C4 (n-butane). All other figures show measured and calculated concentration profiles that closely follow one another.

Table 8 presents the R/U values for the previously mentioned species showing differences between measured and calculated concentration. Absolute values of R/U below 2 are not shown since they are considered to be within an acceptable range.

**Table 8: R/U Values for Selected Species**

Test	Scenario	Species	R/U
MH-HSH	1	N-C4	-4.0
MH-HSH	2	N-C4	-3.6
SR-CSH	1	PROPYL	-2.5
SR-CSH	1	ACETYL	-2.2
SR-CSH	1	M&P-XY	2.3

While these R/U values are considered to be outside the range of acceptable values, they do not appear to increase the  $\chi^2$  value (refer to Table 6 and Table 7) to beyond the acceptable value of 4.0, therefore, these discrepancies are not considered to have such a negative influence on the model output as to produce unreliable results.

### 4.3 Comparison of HD House Modelling Results

The modelling of the phase 2 data was conducted with version 8.0 of the CMB model, however, the modelling of phase 1 data was conducted with version 7.0. To test any possible discrepancies in the models, the phase 1 HD house data was re-modelled using CMB8.0, O'Leary's input file data for HD-HSH and HD-CSH, and his selections for source contributors. Photocopies of the phase 1 model output are located in Appendix D along with the model output using CMB8 and the phase 1 data. The SCEs and performance measures are identical.

Two differences between phase 1 and phase 2 modelling were noticed during the course of phase 2 modelling, namely:

1. The uncertainties calculated for phase 2 data are based upon different criteria than those used during phase 1, and
2. CMB8 contains some automated features, that CMB7 did not have, which enables the model to automatically find the best possible selection of source contributors.

Table 9 presents the SCEs from the phase 1 model output using CMB7 (HD-HSH), phase 2 model output using CMB8 (HD2-HSH), phase 1 data modelled using CMB8 and the author's calculated uncertainties (HDA-HSH), and phase 1 data modelled using CMB8 and the phase 1 calculated uncertainties (HDB-HSH).

**Table 9: Source Contribution Estimates and Performance Measures for Various HD House Model Output.**

Model Version	Receptor Sample	HD_HSPT	HD-AMB (HD-HSB)	EVAP97 (HOTSOAK)	COLDST97	WHLGAS	R <sup>2</sup>	$\chi^2$	% mass
CMB7	HD-HSH	10.8	18.7	69.4			0.93	2.22	98.8
CMB8	HDB-HSH	0.0	39.3	36.4		21.9	0.94	2.05	97.6
CMB8	HDA-HSH	0.0	35.3	41.1		20.8	0.95	1.35	97.2
CMB8	HD2-HSH	18.6	5.8	55.2		14.8	0.98	0.94	94.3
CMB7	HD-CSH	5.6	3.4	21.5	63.8		0.90	3.52	94.4
CMB8	HDB-CSH	8.2	0.0		49.1	30.5	0.91	3.01	87.8
CMB8	HDA-CSH	8.0	0.0		49.0	31.1	0.91	2.82	88.1
CMB8	HD2-CSH	40.2	0.0		38.0	10.7	0.93	<b>4.15</b>	88.9

The performance measures for all output are within the range of acceptable values, with the exception of the  $\chi^2$  for HD2-CSH which has been attributed to an unknown source of n-decane as previously discussed. An interesting point is that for HD-HSH and HDB-HSH, which have the same input data, but are run with different versions of the model, the source contributors selected automatically by CMB8 and those selected during phase 1 are different. HD-CSH and HDB-CSH have different contributing source profiles also.

Using different criteria for calculating the uncertainties does not appear to have too large of an effect on the SCEs, as seen by comparing HDA and HDB output.

A comparison of HD-HSH and HD2-HSH suggests that the vehicle contribution to the in-house receptor sample has not changed substantially between the two phases of hot soak testing, at 69.4% and 70% (55.2%+14.8%), respectively. The same is not true in the comparison of HD-CSH and HD2-CSH, at 85.3% (21.5%+63.8%) and 48.7% (38.0%+10.7%), respectively. The lack of similarity between the two cold start tests may be attributed to the fact that the first two hours of the in-house air sample during the phase 2 cold start test was not collected due to a faulty particle filter connected to canister. Since the peak of vehicle emissions likely infiltrate into the house early during the test, the canister sample missed the largest part of the vehicle emissions contribution, and rather collected air that more closely resembled the pre-test air with the tail end of the vehicle emission contribution.

## 5 Conclusion

The scenario 1 garage SCEs for the hot soak test range from 11.1% at PB house to 74.8% at HD house. The scenario 2 vehicle emissions SCEs for the hot soak test range from 8.8% at PB house to 71.4% at RW and SR houses. The scenario 1 garage SCEs for the cold start test range from 18.2% at JS house to 82.2% at MH house. The scenario 2 vehicle emissions SCEs for the cold start test range from 18.7% at JS house to 74.3% at MH house. The SCE from the garage source in scenario 1 are typically within 5% of the SCE from the sum of the vehicle emission sources in scenario 2 for the hot soak tests. The SCE from the garage source in scenario 1 are also typically within 4% of the SCE from the sum of the vehicle emission source profiles in scenario 2 for the cold start tests. This shows that the resulting source contribution estimates, using either scenario as the source of vehicle emissions, are very similar. If future source apportionment modelling of infiltrating garage air is to be conducted, it is suggested that obtaining a garage canister sample to develop a source profile would be sufficient.

Source contribution estimates calculated using versions CMB7 and CMB8, may be different even though the same input data is used. This was demonstrated when the phase 1 HD house profiles were modelled with the different versions of the model.

## 6 References

Graham, L., K. O'Leary, L. Noseworthy, "Indoor Air Sampling for Infiltration of Vehicle Emissions to the House from the Attached Garage," ERMD Report 99-26768-2 (Revised December 1999), 1999.

Graham, L., K. O'Leary, L. Noseworthy, "Characterisation of the Tailpipe and Evaporative Emissions of the Test Vehicle for the Residential Garage Study", ERMD Report 99-26768-1, 1999.

O'Leary, K., "Infiltration of Vehicle Exhaust into Homes with Attached Garages: Field Study Results and Chemical Mass Balance Analysis," Dept. Civil and Environmental Engineering, Carleton University, 1998.

## Appendix A: CMB8 Input Files

### Input Filename File (IN\_AGS99)

```
1      2
01234567890
SO-AGS99.SEL
PO-AGS99.SEL
DS-AGS99.SEL
AD-AGS99.TXT
PR-AGS99.TXT
```

### Species Selection Input File (PO-AGS99.SEL)

```
0      1      2      3      4
1234567890123456789012345678901234567890
C1      TOT      *      Total Mass By Gravimetry (not used)
C2      ETHYL      *      ethylene
C3      ACETYL      *      acetylene
C4      PROPYL      *      propylene
C5      N-C3      *      propane
C6      1BUTENE      *      isobutene/1-butene
C7      N-C4      *      n-butane
C8      2M-C4      *      2m-butane
C9      N-C5      *      n-pentane
C10     CYC-C5      *      cyclopentane
C11     2M-C5      *      2m-pentane & t-4m2-pentene
C12     3M-C5      *      3m-pentane
C13     N-C6      *      n-hexane
C14     MCYC-C5      *      m-cyclopentane
C15     BENZENE      *      benzene
C16     2M-C6      *      2m-hexane
C17     3M-C6      *      3m-hexane & cyclohexene
C18     224TMC5      *      224-tm-pentane/1-heptene
C19     N-C7      *      n-heptane
C20     TOLUENE      *      toluene/233-tm-pentane
C21     DMCYCC6      *      t-14-dm-cyH
C22     N-C8      *      n-octane/t-12-dm-cyH
C23     E-BENZ      *      e-benzene
C24     M&P-XYL      *      m&p-xylene/23-dm-heptane
C25     O-XYL      *      o-xylene
C26     3E-TOLU      *      3e-toluene & 23-dm-octane
C27     4E-TOLU      *      4e-toluene
C28     N-C10      *      n-decane
C29     3IP-TOL      *      3-ip-toluene
C30     4IP-TOL      *      4-ip-toluene
C31     N-C11      *      n-undecane/12-dm-3e-benzene
C32     N-C12      *      n-dodecane
```

### Source Selection Input File (SO-AGS99.SEL)

```
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1234567890123456789012345678901234567890
1      COLDST97      Cold Start Profile from ERMD Vehicle
Characterization Study Dec. 1997 (fuel 1)
2      HOTST97      Hot Start Profile from ERMD Vehicle
Characterization Study Dec. 1997 (fuel 1)
3      EVAP97      Hot Soak Evaporative Profile from ERMD Vehicle
Characterization Study Dec. 1997 (fuel 1)
4      WHLGAS97      Whole Gasoline Profile from ERMD Vehicle
Characterization Study Dec. 1997 (fuel 1)
5      COLDST99      Cold Start Profile from ERMD Vehicle
Characterization Study May 1999 (fuel 2)
6      EVAP99      Hot Soak Evaporative Profile from ERMD Vehicle
Characterization Study May 1999 (fuel 2)
7      WHLGAS99      Whole Gasoline Profile from ERMD Vehicle
Characterization Study May 1999 (fuel 2)
8      JE-AMB      JE residence, ambient sample
9      JE-HSPT      JE residence, hot soak pre-test in-house
10     JE-HSG      JE residence, hot soak garage
11     JE-CSPT      JE residence, cold start pre-test in-house
12     JE-CSG      JE residence, cold start garage
13     SV-HSAMB      SV residence, hot soak ambient sample
14     SV-HSPT      SV residence, hot soak pre-test in-house
15     SV-HSG      SV residence, hot soak garage
16     SV-CSAMB      SV residence, cold start ambient sample
17     SV-CSPT      SV residence, cold start pre-test in-house
18     SV-CSG      SV residence, cold start garage
19     MH-AMB      MH residence, ambient sample
```

20	MH-HSPT	MH residence, hot soak pre-test in-house
21	MH-HSG	MH residence, hot soak garage
22	MH-CSPT	MH residence, cold start pre-test in-house
23	MH-CSG	MH residence, cold start garage
24	SR-AMB	SR residence, ambient sample
25	SR-HSPT	SR residence, hot soak pre-test in-house
26	SR-HSG	SR residence, hot soak garage
27	SR-CSPT	SR residence, cold start pre-test in-house
28	SR-CSG	SR residence, cold start garage
29	JS-AMB	JS residence, ambient sample
30	JS-HSPT	JS residence, hot soak pre-test in-house
31	JS-HSG	JS residence, hot soak garage
32	JS-CSPT	JS residence, cold start pre-test in-house
33	JS-CSG	JS residence, cold start garage
34	PB-AMB	PB residence, ambient sample
35	PB-HSPT	PB residence, hot soak pre-test in-house
36	PB-HSG	PB residence, hot soak garage
37	PB-CSPT	PB residence, cold start pre-test in-house
38	PB-CSG	PB residence, cold start garage
39	GS-AMB	GS residence, ambient sample
40	GS-HSPT	GS residence, hot soak pre-test in-house
41	GS-HSG	GS residence, hot soak garage
42	GS-CSPT	GS residence, cold start pre-test in-house
43	GS-CSG	GS residence, cold start garage
44	RW-AMB	RW residence, ambient sample
45	RW-HSPT	RW residence, hot soak pre-test in-house
46	RW-HSG	RW residence, hot soak garage
47	RW-CSPT	RW residence, cold start pre-test in-house
48	RW-CSG	RW residence, cold start garage
49	KR-AMB	KR residence, ambient sample
50	KR-HSPT	KR residence, hot soak pre-test in-house
51	KR-HSG	KR residence, hot soak garage
52	KR-CSPT	KR residence, cold start pre-test in-house
53	KR-CSG	KR residence, cold start garage
54	FA-AMB	FA residence, ambient sample
55	FA-HSPT	FA residence, hot soak pre-test in-house
56	FA-HSG	FA residence, hot soak garage
57	FA-CSPT	FA residence, cold start pre-test in-house
58	FA-CSG	FA residence, cold start garage
59	HD2-AMB	HD residence, phase 2, ambient sample
60	HD2-HSPT	HD residence, phase 2, hot soak pre-test in-house
61	HD2-HSG	HD residence, phase 2, hot soak garage
62	HD2-CSPT	HD residence, phase 2, cold start pre-test in-house
63	HD2-CSG	HD residence, phase 2, cold start garage
64	HD1AHSB	HD residence, phase 1, hot soak ambient sample,
1999 calculations		
65	HD1AHSPT	HD residence, phase 1, hot soak pre-test in-house,
1999 calculations		
66	HD1AHSG	HD residence, phase 1, hot soak garage, 1999
calculations		
67	HD1ACSB	HD residence, phase 1, cold start ambient sample,
1999 calculations		
68	HD1ACSPT	HD residence, phase 1, cold start pre-test in-
house, 1999 calculations		
69	HD1ACSG	HD residence, phase 1, cold start garage, 1999
calculations		
70	HD1BHSB	HD residence, phase 1, hot soak ambient sample,
1998 calculations		
71	HD1BHSPT	HD residence, phase 1, hot soak pre-test in-house,
1998 calculations		
72	HD1BHSG	HD residence, phase 1, hot soak garage, 1998
calculations		
73	HD1BCSB	HD residence, phase 1, cold start ambient sample,
1998 calculations		
74	HD1BCSPT	HD residence, phase 1, cold start pre-test in-
house, 1998 calculations		
75	HD1BCSG	HD residence, phase 1, cold start garage, 1998
calculations		

**Sample Selection Input File (DS-AGS99.SEL)**

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1234567890	1234567890	1234567890	1234567890	1234567890
JE-HSH	WINT99	1	1	VOC
JE-CSH	WINT99	1	1	VOC
SV-HSH	WINT99	1	1	VOC
SV-CSH	WINT99	1	1	VOC
MH-HSH	WINT99	1	1	VOC
MH-CSH	WINT99	1	1	VOC
SR-HSH	WINT99	1	1	VOC
SR-CSH	WINT99	1	1	VOC

JS-HSH	WINT99	1	1	VOC
JS-CSH	WINT99	1	1	VOC
PB-HSH	WINT99	1	1	VOC
PB-CSH	WINT99	1	1	VOC
GS-HSH	WINT99	1	1	VOC
GS-CSH	WINT99	1	1	VOC
RW-HSH	WINT99	1	1	VOC
RW-CSH	WINT99	1	1	VOC
KR-HSH	WINT99	1	1	VOC
KR-CSH	WINT99	1	1	VOC
FA-HSH	WINT99	1	1	VOC
FA-CSH	WINT99	1	1	VOC
HD2-HSH	WINT99	1	1	VOC
HD2-CSH	WINT99	1	1	VOC
HD1-HSH	WINT98	1	1	VOC
HD1-CSH	WINT98	1	1	VOC

**Segment of Source Profile Input File (PR-AGS99.TXT)**

CODE	NAME	SIZE	C2	ETHYL	C3	ACETYL	C4	PROPYL	C5	N-C3	C6	1BUTENE	C7	N-C4	C8	2M-C4	C9	N-C5																																														
C10	CYC-C5	C11	2M-C5	C12	3M-C5	C13	N-C6	C14	MCYC-C5	C15	BENZENE	C16	2M-C6	C17	3M-C6	C18	224TMC5	C19	N-C7	C20	TOLUENE	C21	DMCYCC6	C22	N-C8	C23	E-BENZ	C24	M&P-XYL	C25	O-XYL	C26	3E-TOLU	C27	4E-TOLU	C28	N-C10	C29	3IP-TOL	C30	4IP-TOL	C31	N-C11	C32	N-C12																			
1	COLDST97	VOC	0.108220	0.016233	0.058476	0.008771	0.050789	0.007618	0.000000	0.000000	0.000000	0.000100	0.022504	0.003376	0.033827	0.005074	0.045966	0.006895	0.024456	0.003668	0.005061	0.000759	0.033340	0.005001	0.021768	0.003265	0.020642	0.003096	0.027697	0.004155	0.057610	0.008642	0.013332	0.002000	0.014360	0.002154	0.009477	0.001422	0.015155	0.002273	0.169484	0.025423	0.000602	0.000090	0.010334	0.001550	0.035827	0.005374	0.115569	0.017335	0.048521	0.007278	0.031879	0.004782	0.013648	0.002047	0.001307	0.000196	0.000158	0.000024	0.000377	0.000056	0.000158	0.000024
2	HOTST97	VOC	0.124756	0.018713	0.013784	0.002068	0.040219	0.006033	0.003319	0.000498	0.030184	0.004528	0.047130	0.007070	0.045998	0.006900	0.023467	0.003520	0.004295	0.000644	0.028700	0.004305	0.018626	0.002794	0.016634	0.002495	0.021007	0.003151	0.067552	0.010133	0.011870	0.001781	0.013627	0.002044	0.009098	0.001365	0.012534	0.001880	0.250059	0.037509	0.001367	0.000205	0.008551	0.001283	0.031589	0.004738	0.083834	0.012575	0.036743	0.005512	0.020695	0.003104	0.007146	0.001072	0.001484	0.000223	0.002030	0.000305	0.007692	0.001154	0.004334	0.000650	0.011675	0.001751

**Segment of Receptor Data Input File (AD-AGS99.TXT)**

NAME	DATE	DUR	STHR	SIZE	C1	TOT	C2	ETHYL	C3	ACETYL	C4	PROPYL	C5	N-C3	C6	1BUTENE	C7	N-C4	C8																																																																																																																						
2M-C4	C9	N-C5	C10	CYC-C5	C11	2M-C5	C12	3M-C5	C13	N-C6	C14	MCYC-C5	C15	BENZENE	C16	2M-C6	C17	3M-C6	C18	224TMC5	C19	N-C7	C20	TOLUENE	C21	DMCYCC6	C22	N-C8	C23	E-BENZ	C24	M&P-XYL	C25	O-XYL	C26	3E-TOLU	C27	4E-TOLU	C28	N-C10	C29	3IP-TOL	C30	4IP-TOL	C31	N-C11	C32	N-C12																																																																																									
JE-HSH	WINT99	1	1	VOC	137.626417	7.500537	3.90878	1.95439	1.518976	0.759488	0.689902	0.344951	5.397933	0.539793	4.2925	2.14625	7.38811	0.738811	3.705984	1.852992	3.224843	1.612421	1.059705	0.529852	3.028012	1.514006	2.509094	1.254547	2.660197	1.330098	1.831122	0.915561	3.077717	1.538858	1.560728	0.780364	2.521024	1.260512	1.477224	0.738612	2.493189	1.246594	21.031063	2.103106	4.791535	2.395768	11.567283	1.156728	2.511083	1.255541	7.87124	0.787124	2.968366	1.484183	2.548858	1.274429	1.149173	0.574587	2.648268	1.324134	5.608681	0.560868	2.715866	1.357933	16.883701	1.68837	2.98626	1.49313	JE-HSH	WINT99	1	1	VOC	186.149368	8.082172	14.936992	1.493699	10.043227	1.004323	6.544777	0.654478	5.07834	0.507834	4.517843	2.258922	9.306622	0.930662	6.077414	0.607741	6.187481	0.618748	1.236142	0.618071	7.222115	0.722211	5.239208	0.523921	4.687178	2.343589	5.327262	0.532726	8.54123	0.854123	2.880379	1.44019	4.047094	2.023547	2.727978	1.363989	3.151314	1.575657	25.676184	2.567618	2.087894	1.043947	4.682098	2.341049	3.845586	1.922793	13.152207	1.315221	4.925939	2.46297	4.96658	2.48329	1.517237	0.758618	1.788172	0.894086	2.336816	1.168408	2.06588	1.03294	9.384516	0.938452	1.967666	0.983833



## Appendix B: CMB8 Output Files

### Scenario 1 Hot Soak Model Output

SOURCE CONTRIBUTION ESTIMATES - SITE: JE-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .94 PERCENT MASS 105.4  
 CHI SQUARE .44 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 9	JE-HSPT	118.7260	12.0760	9.8316
YES 10	JE-HSG	26.3281	10.1733	2.5880

MEASURED CONCENTRATION FOR SIZE: VOC  
 137.6+- 7.5

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 27.5253 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

6.9099 14.1979

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

1.0000 9 1.0000 10

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: JE-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .94 PERCENT MASS 105.4  
 CHI SQUARE .44 DF 29

SPECIES	I	MEAS	MEAS	CALC	RATIO C/M	RATIO R/U
C1	TOT	137.6264+-	7.5005	145.0541+-	10.0713	1.05+- .09 .6
C2	ETHYL *	3.9088+-	1.9544	5.4803+-	2.7478	1.40+- .99 .5
C3	ACETYL *	1.5190+-	.7595	2.4829+-	1.2382	1.63+- 1.15 .7
C4	PROPYL *	.6899+-	.3450	1.4754+-	.7368	2.14+- 1.51 1.0
C5	N-C3 *	5.3979+-	.5398	7.3158+-	3.6370	1.36+- .69 .5
C6	1BUTEN *	4.2925+-	2.1463	2.4951+-	.9881	.58+- .37 -.8
C7	N-C4 *	7.3881+-	.7388	8.8518+-	3.0263	1.20+- .43 .5
C8	2M-C4 *	3.7060+-	1.8530	5.2975+-	1.5931	1.43+- .83 .7
C9	N-C5 *	3.2248+-	1.6124	3.6784+-	1.1697	1.14+- .68 .2
C10	CYC-C5 *	1.0597+-	.5299	.5868+-	.0284	.55+- .28 -.9
C11	2M-C5 *	3.0280+-	1.5140	2.6519+-	.7766	.88+- .51 -.2
C12	3M-C5 *	2.5091+-	1.2545	2.4832+-	.9032	.99+- .61 .0
C13	N-C6 *	2.6602+-	1.3301	2.2477+-	.7757	.84+- .51 -.3
C14	MCYC-C *	1.8311+-	.9156	1.8465+-	.5144	1.01+- .58 .0
C15	BENZEN *	3.0777+-	1.5389	4.5697+-	1.7569	1.48+- .94 .6
C16	2M-C6 *	1.5607+-	.7804	1.3937+-	.5049	.89+- .55 -.2
C17	3M-C6 *	2.5210+-	1.2605	2.5172+-	1.0591	1.00+- .65 .0
C18	224TMC *	1.4772+-	.7386	1.5319+-	.5249	1.04+- .63 .1
C19	N-C7 *	2.4932+-	1.2466	2.3146+-	.9791	.93+- .61 -.1
C20	TOLUEN *	21.0311+-	2.1031	18.1922+-	1.7144	.87+- .12 -1.0
C21	DMCYCC *	4.7915+-	2.3958	4.2021+-	2.1100	.88+- .62 -.2
C22	N-C8 *	11.5673+-	1.1567	8.9491+-	1.1014	.77+- .12 -1.6
C23	E-BENZ *	2.5111+-	1.2555	2.9793+-	1.0224	1.19+- .72 .3
C24	M&P-XY *	7.8712+-	.7871	9.9935+-	3.4922	1.27+- .46 .6
C25	O-XYL *	2.9684+-	1.4842	4.1027+-	1.3934	1.38+- .84 .6
C26	3E-TOL *	2.5489+-	1.2744	3.2386+-	1.1890	1.27+- .79 .4
C27	4E-TOL *	1.1492+-	.5746	2.6226+-	1.1262	2.28+- 1.50 1.2
C28	N-C10 *	2.6483+-	1.3241	3.1637+-	1.5869	1.19+- .85 .2
C29	3IP-TO *	5.6087+-	.5609	3.5918+-	1.7736	.64+- .32 -1.1
C30	4IP-TO *	2.7159+-	1.3579	2.5588+-	1.1467	.94+- .63 -.1
C31	N-C11 *	16.8837+-	1.6884	19.4398+-	2.4343	1.15+- .18 .9
C32	N-C12 *	2.9863+-	1.4931	2.7992+-	1.4007	.94+- .66 -.1

SOURCE CONTRIBUTION ESTIMATES - SITE: SV-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .94 PERCENT MASS 91.0  
 CHI SQUARE 1.65 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 14 SV-HSPT 242.9413 15.8095 15.3667  
 YES 15 SV-HSG 71.2571 9.2982 7.6636  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 345.1+- 13.4

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 69.0215 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 6.8302 17.0219  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 14 1.0000 15  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: SV-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .94 PERCENT MASS 91.0  
 CHI SQUARE 1.65 DF 28

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U
C1	TOT		345.1075+-	13.3917	314.1984+-	12.5096	.91+-	.05 -1.7
C2	ETHYL *		2.7320+-	1.3660	1.6404+-	.7542	.60+-	.41 -.7
C3	ACETYL *		1.8894+-	.9447	1.4684+-	.6931	.78+-	.53 -.4
C4	PROPYL *		1.4233+-	.7117	.6579+-	.2968	.46+-	.31 -1.0
C5	N-C3 *		11.6383+-	1.1638	11.9207+-	1.2491	1.02+-	.15 .2
C6	1BUTEN		.0000<	.0001	1.8830<	.1983	.00<	.00 9.5
C7	N-C4 *		17.6232+-	1.7623	15.1217+-	1.1578	.86+-	.11 -1.2
C8	2M-C4 *		97.9544+-	9.7954	87.0561+-	8.8647	.89+-	.13 -.8
C9	N-C5 *		6.1943+-	.6194	5.1761+-	.8495	.84+-	.16 -1.0
C10	CYC-C5 *		1.4158+-	.7079	.9354+-	.0713	.66+-	.33 -.7
C11	2M-C5 *		6.1295+-	.6129	4.4906+-	.9881	.73+-	.18 -1.4
C12	3M-C5 *		3.0635+-	1.5317	2.7031+-	.5614	.88+-	.48 -.2
C13	N-C6 *		3.5919+-	1.7960	3.1787+-	.7343	.88+-	.49 -.2
C14	MCYC-C *		4.2799+-	2.1400	3.4739+-	.7689	.81+-	.44 -.4
C15	BENZEN *		5.5362+-	.5536	8.0690+-	.6081	1.46+-	.18 3.1
C16	2M-C6 *		2.2683+-	1.1342	1.9299+-	.5021	.85+-	.48 -.3
C17	3M-C6 *		3.1059+-	1.5529	1.4017+-	.1085	.45+-	.23 -1.1
C18	224TMC *		1.6776+-	.8388	1.3407+-	.3148	.80+-	.44 -.4
C19	N-C7 *		1.9966+-	.9983	1.7864+-	.4415	.89+-	.50 -.2
C20	TOLUEN *		28.3790+-	2.8379	28.7098+-	2.1634	1.01+-	.13 .1
C21	DMCYCC *		3.3202+-	1.6601	4.1364+-	.4399	1.25+-	.64 .5
C22	N-C8 *		1.4732+-	.7366	1.4336+-	.5080	.97+-	.60 .0
C23	E-BENZ *		11.5585+-	1.1559	11.6688+-	1.0052	1.01+-	.13 .1
C24	M&P-XY *		44.4493+-	4.4449	41.3498+-	3.6318	.93+-	.12 -.5
C25	O-XYL *		15.7587+-	1.5759	15.8612+-	1.3665	1.01+-	.13 .0
C26	3E-TOL *		7.4905+-	.7490	7.4457+-	.6232	.99+-	.13 .0
C27	4E-TOL *		2.6073+-	1.3037	3.9172+-	1.4932	1.50+-	.94 .7
C28	N-C10 *		.5135+-	.2567	2.8029+-	1.3596	5.46+-	3.80 1.7
C29	3IP-TO *		2.5500+-	1.2750	2.3445+-	1.1095	.92+-	.63 -.1
C30	4IP-TO *		41.2337+-	4.1234	22.7247+-	2.3853	.55+-	.08 -3.9
C31	N-C11 *		10.8082+-	1.0808	10.9133+-	1.1646	1.01+-	.15 .1
C32	N-C12 *		2.4453+-	1.2227	6.6560+-	.6779	2.72+-	1.39 3.0

SOURCE CONTRIBUTION ESTIMATES - SITE: MH-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .94 PERCENT MASS 92.8  
 CHI SQUARE 1.10 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L)  
 -----  
 YES 19 MH-AMB 141.2269 28.6512 4.9292  
 YES 20 MH-HSPT 112.8670 23.4880 4.8053  
 YES 21 MH-HSG 69.7612 28.2134 2.4726  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 348.9+- 10.3

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 69.7752 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 8.2931 28.8872 35.5714  
 -----

NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE  
 -----  
 1.0000 19 1.0000 20 1.0000 21  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR  
 -----

SPECIES CONCENTRATIONS - SITE: MH-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .94 PERCENT MASS 92.8  
 CHI SQUARE 1.10 DF 28

SPECIES	I	MEAS	-----	-----	-----	-----	RATIO C/M	-----	RATIO R/U
C1	TOT	348.8761+-	10.3394	323.8550+-	14.9206	.93+-	.05	-1.4	
C2	ETHYL *	12.6485+-	1.2648	14.0820+-	2.0541	1.11+-	.20	.6	
C3	ACETYL *	7.7589+-	.7759	10.1606+-	4.0370	1.31+-	.54	.6	
C4	PROPYL *	5.2767+-	.5277	5.9851+-	2.2812	1.13+-	.45	.3	
C5	N-C3 *	26.7114+-	2.6711	12.9220+-	5.0139	.48+-	.19	-2.4	
C6	1BUTEN *	5.7919+-	.5792	8.4763+-	2.8637	1.46+-	.52	.9	
C7	N-C4 *	60.2044+-	6.0204	33.9983+-	2.6309	.56+-	.07	-4.0	
C8	2M-C4 *	21.4534+-	2.1453	21.4650+-	4.9332	1.00+-	.25	.0	
C9	N-C5 *	15.0589+-	1.5059	14.4592+-	2.9148	.96+-	.22	-.2	
C10	CYC-C5 *	2.9740+-	1.4870	2.9708+-	.8191	1.00+-	.57	.0	
C11	2M-C5 *	16.5888+-	1.6589	17.7233+-	3.4710	1.07+-	.23	.3	
C12	3M-C5 *	11.4042+-	1.1404	12.6889+-	2.6538	1.11+-	.26	.4	
C13	N-C6 *	11.9069+-	1.1907	12.1492+-	1.9940	1.02+-	.20	.1	
C14	MCYC-C *	9.8275+-	.9827	9.4056+-	1.2894	.96+-	.16	-.3	
C15	BENZEN *	13.5102+-	1.3510	15.2393+-	3.5535	1.13+-	.29	.5	
C16	2M-C6 *	6.3961+-	.6396	6.6133+-	1.9401	1.03+-	.32	.1	
C17	3M-C6 *	8.5473+-	.8547	8.0178+-	1.5450	.94+-	.20	-.3	
C18	224TMC *	4.7881+-	2.3940	5.1911+-	1.5485	1.08+-	.63	.1	
C19	N-C7 *	6.3758+-	.6376	5.9235+-	.8246	.93+-	.16	-.4	
C20	TOLUEN *	34.3048+-	3.4305	38.4188+-	2.7580	1.12+-	.14	.9	
C21	DMCYCC *	2.8600+-	1.4300	2.0704+-	.7500	.72+-	.45	-.5	
C22	N-C8 *	4.3915+-	2.1958	4.4549+-	1.5156	1.01+-	.61	.0	
C23	E-BENZ *	6.6693+-	.6669	7.0636+-	1.7477	1.06+-	.28	.2	
C24	M&P-XY *	22.4791+-	2.2479	23.7377+-	4.2839	1.06+-	.22	.3	
C25	O-XYL *	9.9758+-	.9976	10.1343+-	2.0205	1.02+-	.23	.1	
C26	3E-TOL *	6.9721+-	.6972	8.6368+-	1.3941	1.24+-	.24	1.1	
C27	4E-TOL *	3.1598+-	1.5799	2.8636+-	.6717	.91+-	.50	-.2	
C28	N-C10 *	.4324+-	.4324	1.0597+-	.0536	2.45+-	2.45	1.4	
C29	3IP-TO *	2.9631+-	1.4815	3.8900+-	1.4963	1.31+-	.83	.4	
C30	4IP-TO *	3.9091+-	1.9546	1.9691+-	.9697	.50+-	.35	-.9	
C31	N-C11 *	2.4198+-	1.2099	1.4288+-	.7013	.59+-	.41	-.7	
C32	N-C12 *	1.1162+-	.5581	.6561+-	.3296	.59+-	.42	-.7	

SOURCE CONTRIBUTION ESTIMATES - SITE: SR-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .96 PERCENT MASS 98.5  
 CHI SQUARE .63 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 24	SR-AMB	55.7763	18.5111	3.0131
YES 25	SR-HSPT	27.6251	12.7970	2.1587
YES 26	SR-HSG	114.9972	16.7587	6.8619

MEASURED CONCENTRATION FOR SIZE: VOC  
 201.3+- 8.0

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 40.2651 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

5.9383 14.5987 23.2141

NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

1.0000 24 1.0000 25 1.0000 26

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: SR-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .96 PERCENT MASS 98.5  
 CHI SQUARE .63 DF 28

SPECIES	I	MEAS	MEAS	MEAS	MEAS	RATIO C/M	RATIO R/U
C1	TOT	201.3253+-	8.0244	198.3986+-	10.3844	.99+- .06	-.2
C2	ETHYL *	3.8806+-	1.9403	1.6840+-	.6535	.43+- .27	-1.1
C3	ACETYL *	2.1784+-	1.0892	.9975+-	.4301	.46+- .30	-1.0
C4	PROPYL *	1.3179+-	.6589	1.8439+-	.7348	1.40+- .89	.5
C5	N-C3 *	8.9952+-	.8995	11.9282+-	4.0507	1.33+- .47	.7
C6	1BUTEN *	6.4839+-	.6484	5.5301+-	.9321	.85+- .17	-.8
C7	N-C4 *	26.7718+-	2.6772	22.5137+-	4.0133	.84+- .17	-.9
C8	2M-C4 *	8.7029+-	.8703	11.8231+-	2.0139	1.36+- .27	1.4
C9	N-C5 *	10.0533+-	1.0053	8.7255+-	1.4978	.87+- .17	-.7
C10	CYC-C5 *	1.9268+-	.9634	1.7212+-	.1067	.89+- .45	-.2
C11	2M-C5 *	7.6178+-	.7618	7.1299+-	1.4439	.94+- .21	-.3
C12	3M-C5 *	5.2012+-	.5201	4.3382+-	.8617	.83+- .19	-.9
C13	N-C6 *	5.2364+-	.5236	4.6904+-	.8713	.90+- .19	-.5
C14	MCYC-C *	5.2851+-	.5285	4.3176+-	.5882	.82+- .14	-1.2
C15	BENZEN *	12.4293+-	1.2429	10.7958+-	1.8094	.87+- .17	-.7
C16	2M-C6 *	2.5221+-	1.2611	2.5610+-	.5016	1.02+- .55	.0
C17	3M-C6 *	3.9753+-	1.9877	4.3441+-	1.1570	1.09+- .62	.2
C18	224TMC *	2.0729+-	1.0364	2.4367+-	.5465	1.18+- .64	.3
C19	N-C7 *	2.4355+-	1.2178	2.5572+-	.5109	1.05+- .57	.1
C20	TOLUEN *	35.0417+-	3.5042	33.6936+-	4.5191	.96+- .16	-.2
C21	DMCYCC *	2.2353+-	1.1176	1.7709+-	.3334	.79+- .42	-.4
C22	N-C8 *	2.0296+-	1.0148	2.2025+-	.5431	1.09+- .60	.2
C23	E-BENZ *	4.7087+-	2.3543	5.9079+-	.6953	1.25+- .64	.5
C24	M&P-XY *	15.7740+-	1.5774	18.5938+-	2.1421	1.18+- .18	1.1
C25	O-XYL *	6.4244+-	.6424	8.1583+-	1.1245	1.27+- .22	1.3
C26	3E-TOL *	3.5450+-	1.7725	5.1476+-	.7595	1.45+- .76	.8
C27	4E-TOL *	1.6967+-	.8484	1.4086+-	.1472	.83+- .42	-.3
C28	N-C10 *	4.1160+-	2.0580	2.2545+-	.8387	.55+- .34	-.8
C29	3IP-TO *	2.3706+-	1.1853	3.1401+-	.4831	1.32+- .69	.6
C30	4IP-TO *	1.9268+-	.9634	3.4306+-	.7843	1.78+- .98	1.2
C31	N-C11 *	3.6316+-	1.8158	2.1081+-	.7620	.58+- .36	-.8
C32	N-C12 *	.7388+-	.3694	.6444+-	.2806	.87+- .58	-.2

SOURCE CONTRIBUTION ESTIMATES - SITE: JS-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .86 PERCENT MASS 88.2  
 CHI SQUARE 6.32 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L)  
 -----  
 YES 30 JS-HSPT 312.0978 16.3248 19.1180  
 YES 31 JS-HSG 106.1622 11.4556 9.2673  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 474.1+- 15.2

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 94.8227 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 7.9758 18.2789  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 30 1.0000 31  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: JS-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .86 PERCENT MASS 88.2  
 CHI SQUARE 6.32 DF 28

SPECIES	I	MEAS	MEAS	CALC	CALC	RATIO C/M	RATIO R/U
C1	TOT	474.1134+-	15.1953	418.2601+-	12.7859	.88+-	.04 -2.8
C2	ETHYL *	5.6745+-	.5674	5.7126+-	.6043	1.01+-	.15 .0
C3	ACETYL *	2.9669+-	1.4834	3.1678+-	1.5877	1.07+-	.76 .1
C4	PROPYL	.0000<	.0001	2.1994<	1.0336	.00<	.00 2.1
C5	N-C3 *	13.2381+-	1.3238	13.3002+-	1.3364	1.00+-	.14 .0
C6	1BUTEN *	5.0936+-	.5094	5.6025+-	1.4413	1.10+-	.30 .3
C7	N-C4 *	25.5376+-	2.5538	26.2237+-	1.9518	1.03+-	.13 .2
C8	2M-C4 *	118.5811+-	11.8581	82.0535+-	7.8284	.69+-	.10 -2.6
C9	N-C5 *	9.1166+-	.9117	9.8907+-	.7454	1.08+-	.14 .7
C10	CYC-C5 *	2.0475+-	1.0238	1.7852+-	.3947	.87+-	.48 -.2
C11	2M-C5 *	12.5516+-	1.2552	11.3632+-	.8788	.91+-	.11 -.8
C12	3M-C5 *	9.2751+-	.9275	7.8682+-	.6193	.85+-	.11 -1.3
C13	N-C6 *	11.0441+-	1.1044	9.1759+-	.7371	.83+-	.11 -1.4
C14	MCYC-C *	5.5857+-	.5586	5.2303+-	1.1130	.94+-	.22 -.3
C15	BENZEN *	9.8440+-	.9844	10.2831+-	.7732	1.04+-	.13 .4
C16	2M-C6 *	4.7936+-	2.3968	4.1040+-	1.3469	.86+-	.51 -.3
C17	3M-C6 *	6.3754+-	.6375	5.2474+-	1.8585	.82+-	.30 -.6
C18	224TMC *	4.2607+-	2.1303	3.3447+-	1.1380	.79+-	.47 -.4
C19	N-C7 *	5.6481+-	.5648	4.6505+-	1.6324	.82+-	.30 -.6
C20	TOLUEN *	42.5251+-	4.2525	42.2382+-	3.1421	.99+-	.12 -.1
C21	DMCYCC *	7.2948+-	.7295	4.8541+-	.5040	.67+-	.10 -2.8
C22	N-C8 *	5.2256+-	.5226	8.3219+-	.8169	1.59+-	.22 3.2
C23	E-BENZ *	9.3303+-	.9330	10.4559+-	.7999	1.12+-	.14 .9
C24	M&P-XY *	37.7892+-	3.7789	35.3352+-	2.7355	.94+-	.12 -.5
C25	O-XYL *	12.3091+-	1.2309	15.6540+-	1.2220	1.27+-	.16 1.9
C26	3E-TOL *	17.7532+-	1.7753	12.9289+-	1.1237	.73+-	.10 -2.3
C27	4E-TOL *	5.7105+-	.5710	5.0754+-	1.9321	.89+-	.35 -.3
C28	N-C10 *	30.8905+-	3.0890	1.5323+-	.6320	.05+-	.02 -9.3
C29	3IP-TO *	7.2972+-	.7297	4.6347+-	.4807	.64+-	.09 -3.0
C30	4IP-TO *	17.7964+-	1.7796	47.1841+-	4.9011	2.65+-	.38 5.6
C31	N-C11 *	25.2352+-	2.5235	16.5068+-	1.7238	.65+-	.09 -2.9
C32	N-C12 *	3.3221+-	1.6611	2.3356+-	1.0949	.70+-	.48 -.5

SOURCE CONTRIBUTION ESTIMATES - SITE: PB-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 98.7  
 CHI SQUARE 1.37 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 35	PB-HSPT	294.7437	15.5370	18.9704
YES 36	PB-HSG	37.3718	8.5034	4.3949

MEASURED CONCENTRATION FOR SIZE: VOC  
 336.6+- 11.1

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 67.3120 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

6.2016 16.5906

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

1.0000 35 1.0000 36

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: PB-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 98.7  
 CHI SQUARE 1.37 DF 28

SPECIES	I	MEAS	CALC	RATIO C/M	RATIO R/U		
C1	TOT	336.5599+-	11.1252	332.1155+-	12.1633	.99+- .05	-.3
C2	ETHYL *	3.4131+-	1.7066	2.9445+-	1.4408	.86+- .60	-.2
C3	ACETYL *	2.2275+-	1.1137	1.9289+-	.9432	.87+- .61	-.2
C4	PROPYL *	1.1088+-	.5544	.9505+-	.4601	.86+- .60	-.2
C5	N-C3 *	9.4853+-	.9485	7.4138+-	.7558	.78+- .11	-1.7
C6	1BUTEN *	2.8253+-	1.4126	2.3703+-	.6467	.84+- .48	-.3
C7	N-C4 *	13.2283+-	1.3228	13.6126+-	1.0473	1.03+- .13	.2
C8	2M-C4 *	5.5811+-	.5581	5.7645+-	1.6109	1.03+- .31	.1
C9	N-C5 *	5.3082+-	.5308	6.1147+-	.4817	1.15+- .15	1.1
C10	CYC-C5 *	1.3940+-	.6970	.7275+-	.0470	.52+- .26	-1.0
C11	2M-C5 *	4.9833+-	2.4916	5.4024+-	2.0091	1.08+- .68	.1
C12	3M-C5 *	4.5045+-	2.2523	3.5475+-	1.3549	.79+- .50	-.4
C13	N-C6 *	6.8312+-	.6831	5.7152+-	.5112	.84+- .11	-1.3
C14	MCYC-C *	4.0928+-	2.0464	3.6799+-	1.3180	.90+- .55	-.2
C15	BENZEN *	4.3954+-	2.1977	4.8679+-	1.3198	1.11+- .63	.2
C16	2M-C6 *	3.2395+-	1.6197	2.8715+-	1.1992	.89+- .58	-.2
C17	3M-C6 *	4.3359+-	2.1679	3.6836+-	1.5869	.85+- .56	-.2
C18	224TMC *	3.2072+-	1.6036	2.7129+-	1.2036	.85+- .57	-.2
C19	N-C7 *	4.6385+-	2.3192	4.0921+-	1.8087	.88+- .59	-.2
C20	TOLUEN *	34.0072+-	3.4007	31.4746+-	2.6322	.93+- .12	-9.6
C21	DMCYCC	.0000<	.0001	4.6153<	.4813	.00< .00	9.6
C22	N-C8 *	2.7186+-	1.3593	1.7367+-	.7655	.64+- .43	-.6
C23	E-BENZ *	6.9304+-	.6930	7.2985+-	.6343	1.05+- .14	.4
C24	M&P-XY *	24.4971+-	2.4497	25.2086+-	2.2280	1.03+- .14	.2
C25	O-XYL *	9.8375+-	.9838	10.0141+-	.8804	1.02+- .14	.1
C26	3E-TOL *	18.3778+-	1.8378	22.3306+-	2.2571	1.22+- .17	1.4
C27	4E-TOL *	8.6866+-	.8687	2.2156+-	.8963	.26+- .11	-5.2
C28	N-C10 *	45.9358+-	4.5936	45.6371+-	4.7976	.99+- .14	.0
C29	3IP-TO *	8.6395+-	.8639	9.4754+-	.9937	1.10+- .16	.6
C30	4IP-TO *	18.7846+-	1.8785	20.5263+-	2.1312	1.09+- .16	.6
C31	N-C11 *	40.4143+-	4.0414	37.7658+-	3.9694	.93+- .14	-.5
C32	N-C12 *	32.9307+-	3.2931	35.4173+-	3.7185	1.08+- .16	.5

SOURCE CONTRIBUTION ESTIMATES - SITE: GS-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 94.3  
 CHI SQUARE 1.27 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 40 GS-HSPT 190.6506 11.9893 15.9017  
 YES 41 GS-HSG 62.0202 11.0669 5.6041  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 267.9+- 8.2

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 53.5815 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 6.6525 14.8984  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 40 1.0000 41  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: GS-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 94.3  
 CHI SQUARE 1.27 DF 28

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U	
C1	TOT		267.9076+-	8.1783	252.6708+-	9.4757	.94+-	.05	-1.2
C2	ETHYL *		5.4261+-	.5426	6.4437+-	.7157	1.19+-	.18	1.1
C3	ACETYL *		3.0557+-	1.5278	3.9537+-	1.9862	1.29+-	.92	.4
C4	PROPYL *		2.2714+-	1.1357	2.6858+-	1.2949	1.18+-	.82	.2
C5	N-C3 *		7.1214+-	.7121	9.9446+-	1.0547	1.40+-	.20	2.2
C6	1BUTEN *		5.2560+-	.5256	3.7225+-	1.0953	.71+-	.22	-1.3
C7	N-C4 *		27.8029+-	2.7803	21.1216+-	1.6595	.76+-	.10	-2.1
C8	2M-C4 *		8.0655+-	.8066	12.7223+-	1.0138	1.58+-	.20	3.6
C9	N-C5 *		10.0781+-	1.0078	8.0897+-	2.3870	.80+-	.25	-.8
C10	CYC-C5 *		1.6040+-	.8020	1.1735+-	.0660	.73+-	.37	-.5
C11	2M-C5 *		11.8597+-	1.1860	9.8541+-	.8712	.83+-	.11	-1.4
C12	3M-C5 *		9.5451+-	.9545	7.8576+-	.7314	.82+-	.11	-1.4
C13	N-C6 *		13.3621+-	1.3362	11.9576+-	1.1654	.89+-	.12	-.8
C14	MCYC-C *		7.3498+-	.7350	5.7572+-	1.9924	.78+-	.28	-.7
C15	BENZEN *		9.8953+-	.9895	8.6114+-	2.5177	.87+-	.27	-.5
C16	2M-C6 *		4.9312+-	2.4656	4.5661+-	1.8878	.93+-	.60	-.1
C17	3M-C6 *		6.6620+-	.6662	6.1645+-	2.6570	.93+-	.41	-.2
C18	224TMC *		2.4922+-	1.2461	2.2088+-	.8289	.89+-	.55	-.2
C19	N-C7 *		5.5860+-	.5586	4.7417+-	1.9745	.85+-	.36	-.4
C20	TOLUEN *		32.3813+-	3.2381	29.8830+-	2.3348	.92+-	.12	-.6
C21	DMCYCC *		4.5200+-	2.2600	3.7489+-	1.8611	.83+-	.58	-.3
C22	N-C8 *		2.9211+-	1.4606	3.6803+-	1.6866	1.26+-	.85	.3
C23	E-BENZ *		4.7459+-	2.3730	5.6024+-	1.6412	1.18+-	.68	.3
C24	M&P-XY *		16.3594+-	1.6359	17.8660+-	1.3977	1.09+-	.14	.7
C25	O-XYL *		7.4589+-	.7459	8.3868+-	2.7169	1.12+-	.38	.3
C26	3E-TOL *		23.7295+-	2.3730	23.2755+-	2.4327	.98+-	.14	-.1
C27	4E-TOL *		.0000<	.0001	.6550<	.0712	.00<	.00	9.2
C28	N-C10 *		6.0859+-	.6086	5.9424+-	2.9207	.98+-	.49	.0
C29	3IP-TO *		7.6366+-	.7637	6.8508+-	.7524	.90+-	.13	-.7
C30	4IP-TO *		9.0959+-	.9096	7.6594+-	.7998	.84+-	.12	-1.2
C31	N-C11 *		6.7762+-	.6776	5.1652+-	2.5209	.76+-	.38	-.6
C32	N-C12 *		3.8323+-	1.9161	2.3790+-	1.1478	.62+-	.43	-.7

SOURCE CONTRIBUTION ESTIMATES - SITE: RW-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 99.1  
 CHI SQUARE 1.38 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 44	RW-AMB	40.4289	14.9786	2.6991
YES 45	RW-HSPT	66.6529	13.7952	4.8316
YES 46	RW-HSG	220.4987	15.9095	13.8595

MEASURED CONCENTRATION FOR SIZE: VOC  
 330.6+- 10.6

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 66.1191 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

6.9533	15.6429	19.3579
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NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95

PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE
1.0000 44	1.0000 45	1.0000 46		

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES

COEFF. SOURCE	COEFF. SOURCE	COEFF. SOURCE	COEFF. SOURCE	SCE	STD ERR
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SPECIES CONCENTRATIONS - SITE: RW-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 99.1  
 CHI SQUARE 1.38 DF 28

SPECIES	I	MEAS	----	----	----	----	----	RATIO C/M	----	RATIO R/U
C1	TOT	330.5954+-	10.5854	327.5805+-	12.4006	.99+-	.05			-.2
C2	ETHYL *	3.5304+-	1.7652	1.4159+-	.5680	.40+-	.26			-1.1
C3	ACETYL *	1.7165+-	.8583	2.7778+-	.9838	1.62+-	.99			.8
C4	PROPYL *	1.7876+-	.8938	1.9574+-	.7243	1.09+-	.68			.1
C5	N-C3 *	7.0108+-	.7011	6.7038+-	1.9879	.96+-	.30			-1.1
C6	1BUTEN *	14.2349+-	1.4235	7.8508+-	.9857	.55+-	.09			-3.7
C7	N-C4 *	42.5519+-	4.2552	37.3065+-	4.0181	.88+-	.13			-.9
C8	2M-C4 *	40.1904+-	4.0190	46.9083+-	3.4878	1.17+-	.15			1.3
C9	N-C5 *	39.2532+-	3.9253	26.9201+-	2.1475	.69+-	.09			-2.8
C10	CYC-C5 *	3.0144+-	1.5072	2.7593+-	.2286	.92+-	.46			-.2
C11	2M-C5 *	10.9861+-	1.0986	10.3635+-	1.1607	.94+-	.14			-.4
C12	3M-C5 *	6.9476+-	.6948	6.7674+-	.8142	.97+-	.15			-.2
C13	N-C6 *	7.4478+-	.7448	7.0327+-	.7569	.94+-	.14			-.4
C14	MCYC-C *	8.6009+-	.8601	7.8519+-	.8143	.91+-	.13			-.6
C15	BENZEN *	15.6144+-	1.5614	17.5939+-	1.9925	1.13+-	.17			.8
C16	2M-C6 *	3.6963+-	1.8481	3.6352+-	.3818	.98+-	.50			.0
C17	3M-C6 *	5.5628+-	.5563	5.3595+-	.9261	.96+-	.19			-.2
C18	224TMC *	2.7669+-	1.3835	2.9632+-	.4720	1.07+-	.56			.1
C19	N-C7 *	3.8332+-	1.9166	3.7655+-	.4319	.98+-	.50			.0
C20	TOLUEN *	48.0884+-	4.8088	53.8150+-	5.2042	1.12+-	.16			.8
C21	DMCYCC *	1.6402+-	.8201	.8758+-	.3258	.53+-	.33			-.9
C22	N-C8 *	2.7617+-	1.3808	3.2149+-	.8601	1.16+-	.66			.3
C23	E-BENZ *	8.2929+-	.8293	9.8294+-	1.0574	1.19+-	.17			1.1
C24	M&P-XY *	24.5944+-	2.4594	30.7970+-	3.3650	1.25+-	.19			1.5
C25	O-XYL *	10.8229+-	1.0823	12.6980+-	1.4400	1.17+-	.18			1.0
C26	3E-TOL *	6.2473+-	.6247	6.0117+-	.7223	.96+-	.15			-.2
C27	4E-TOL *	2.2509+-	1.1255	2.8252+-	.3007	1.26+-	.64			.5
C28	N-C10 *	1.4085+-	.7042	1.3855+-	.4189	.98+-	.57			.0
C29	3IP-TO *	1.2953+-	.6476	.3311+-	.0824	.26+-	.14			-1.5
C30	4IP-TO *	2.4773+-	1.2387	4.5762+-	1.3880	1.85+-	1.08			1.1
C31	N-C11 *	1.0820+-	.5410	1.0083+-	.2979	.93+-	.54			-.1
C32	N-C12 *	.8872+-	.4436	.2796+-	.1402	.32+-	.22			-1.3



SOURCE CONTRIBUTION ESTIMATES - SITE: KR-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .97 PERCENT MASS 99.4  
 CHI SQUARE 1.18 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 50 KR-HSPT 287.1430 16.6964 17.1978  
 YES 51 KR-HSG 222.4308 15.4043 14.4395  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 512.8+- 14.6

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 102.5588 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 11.1847 19.7729  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE  
 -----

1.0000 50 1.0000 51  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR  
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SPECIES CONCENTRATIONS - SITE: KR-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .97 PERCENT MASS 99.4  
 CHI SQUARE 1.18 DF 29

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U	
C1	TOT		512.7941+-	14.5783	509.5737+-	15.9201	.99+-	.04	-.1
C2	ETHYL *		3.8305+-	1.9152	3.0201+-	1.3771	.79+-	.53	-.3
C3	ACETYL *		1.9830+-	.9915	1.6209+-	.7340	.82+-	.55	-.3
C4	PROPYL *		3.2442+-	1.6221	2.4807+-	1.0583	.76+-	.50	-.4
C5	N-C3 *		29.0157+-	2.9016	33.4569+-	3.4149	1.15+-	.16	1.0
C6	1BUTEN *		6.1608+-	.6161	5.0251+-	.8104	.82+-	.15	-1.1
C7	N-C4 *		87.5152+-	8.7515	87.9678+-	6.5203	1.01+-	.13	.0
C8	2M-C4 *		34.8662+-	3.4866	29.6163+-	2.2716	.85+-	.11	-1.3
C9	N-C5 *		21.3326+-	2.1333	18.6354+-	2.2362	.87+-	.14	-.9
C10	CYC-C5 *		3.1211+-	1.5605	2.8002+-	.2523	.90+-	.46	-.2
C11	2M-C5 *		13.6642+-	1.3664	12.3418+-	1.7003	.90+-	.15	-.6
C12	3M-C5 *		8.8533+-	.8853	7.4927+-	1.0677	.85+-	.15	-1.0
C13	N-C6 *		12.2379+-	1.2238	9.0306+-	1.4562	.74+-	.14	-1.7
C14	MCYC-C *		9.2720+-	.9272	7.9191+-	1.2244	.85+-	.16	-.9
C15	BENZEN *		14.0115+-	1.4011	14.6289+-	2.1411	1.04+-	.19	.2
C16	2M-C6 *		4.3158+-	2.1579	3.9845+-	.5877	.92+-	.48	-.1
C17	3M-C6 *		5.7199+-	.5720	5.0636+-	1.0056	.89+-	.20	-.6
C18	224TMC *		3.6236+-	1.8118	3.0375+-	.5432	.84+-	.45	-.3
C19	N-C7 *		4.5596+-	2.2798	4.0608+-	.7106	.89+-	.47	-.2
C20	TOLUEN *		50.9838+-	5.0984	55.0565+-	4.1520	1.08+-	.14	.6
C21	DMCYCC *		11.3338+-	1.1334	12.6717+-	1.3059	1.12+-	.16	.8
C22	N-C8 *		2.9733+-	1.4866	2.8815+-	.9198	.97+-	.57	-.1
C23	E-BENZ *		11.5482+-	1.1548	13.5785+-	1.0167	1.18+-	.15	1.3
C24	M&P-XY *		35.4820+-	3.5482	43.3642+-	3.2483	1.22+-	.15	1.6
C25	O-XYL *		15.3787+-	1.5379	18.5334+-	1.3841	1.21+-	.15	1.5
C26	3E-TOL *		21.5395+-	2.1539	21.2532+-	1.7860	.99+-	.13	-.1
C27	4E-TOL *		1.3524+-	.6762	3.4416+-	.6347	2.54+-	1.36	2.3
C28	N-C10 *		30.6760+-	3.0676	27.6077+-	2.8785	.90+-	.13	-.7
C29	3IP-TO *		12.2428+-	1.2243	7.6406+-	.7883	.62+-	.09	-3.2
C30	4IP-TO *		12.7577+-	1.2758	13.2039+-	1.2314	1.03+-	.14	.3
C31	N-C11 *		34.8538+-	3.4854	33.0163+-	3.4227	.95+-	.14	-.4
C32	N-C12 *		4.3453+-	2.1727	5.1421+-	.4906	1.18+-	.60	.4

SOURCE CONTRIBUTION ESTIMATES - SITE: FA-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .92 PERCENT MASS 100.6  
 CHI SQUARE 1.80 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 55 FA-HSPT 102.8016 8.8198 11.6558  
 YES 56 FA-HSG 119.6887 9.6567 12.3943  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 221.1+- 8.0

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 44.2182 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 6.4144 11.3972  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 55 1.0000 56  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: FA-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .92 PERCENT MASS 100.6  
 CHI SQUARE 1.80 DF 29

SPECIES	I	MEAS	MEAS	CALC	CALC	RATIO C/M	RATIO R/U
C1	TOT	221.0911+-	7.9847	222.4903+-	9.1459	1.01+-	.06
C2	ETHYL *	2.3780+-	1.1890	2.4718+-	1.2445	1.04+-	.74
C3	ACETYL *	1.5132+-	.7566	2.1048+-	1.0596	1.39+-	.99
C4	PROPYL *	1.6890+-	.8445	1.6173+-	.7158	.96+-	.64
C5	N-C3 *	3.6988+-	1.8494	2.9319+-	1.2410	.79+-	.52
C6	1BUTEN *	6.0245+-	.6024	2.6047+-	.4336	.43+-	.08
C7	N-C4 *	32.9589+-	3.2959	31.2157+-	2.7578	.95+-	.13
C8	2M-C4 *	13.1916+-	1.3192	15.0866+-	2.4908	1.14+-	.22
C9	N-C5 *	11.9730+-	1.1973	10.9364+-	1.2318	.91+-	.14
C10	CYC-C5 *	3.1548+-	1.5774	1.9614+-	.1551	.62+-	.31
C11	2M-C5 *	7.9131+-	.7913	7.6108+-	1.1599	.96+-	.18
C12	3M-C5 *	5.5161+-	.5516	5.3718+-	1.1077	.97+-	.22
C13	N-C6 *	5.8558+-	.5856	5.4761+-	.8923	.94+-	.18
C14	MCYC-C *	4.1478+-	2.0739	3.9733+-	.7014	.96+-	.51
C15	BENZEN *	9.3289+-	.9329	9.1822+-	1.7064	.98+-	.21
C16	2M-C6 *	2.7462+-	1.3731	3.1433+-	.7576	1.14+-	.64
C17	3M-C6 *	4.0029+-	2.0014	3.9850+-	1.0988	1.00+-	.57
C18	224TMC *	4.6443+-	2.3221	6.3397+-	.6155	1.37+-	.70
C19	N-C7 *	2.4326+-	1.2163	2.8583+-	.6889	1.18+-	.65
C20	TOLUEN *	26.8156+-	2.6816	31.0881+-	2.4564	1.16+-	.15
C21	DMCYCC *	5.9128+-	.5913	4.0839+-	1.9314	.69+-	.33
C22	N-C8 *	3.6180+-	1.8090	4.0120+-	1.7432	1.11+-	.73
C23	E-BENZ *	6.7158+-	.6716	6.2042+-	1.1592	.92+-	.20
C24	M&P-XY *	16.0756+-	1.6076	19.5306+-	1.5551	1.21+-	.16
C25	O-XYL *	5.4068+-	.5407	8.2924+-	1.6183	1.53+-	.34
C26	3E-TOL *	3.5087+-	1.7544	4.8363+-	1.2285	1.38+-	.77
C27	4E-TOL *	1.4539+-	.7269	3.1262+-	1.0088	2.15+-	1.28
C28	N-C10 *	5.3973+-	.5397	6.1924+-	.7025	1.15+-	.17
C29	3IP-TO *	1.6201+-	.8101	.1144+-	.0582	.07+-	.05
C30	4IP-TO *	11.5762+-	1.1576	6.5336+-	.6735	.56+-	.08
C31	N-C11 *	7.9511+-	.7951	8.0497+-	.9214	1.01+-	.15
C32	N-C12 *	1.8696+-	.9348	1.5564+-	.7425	.83+-	.58

SOURCE CONTRIBUTION ESTIMATES - SITE: HD2-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .97 PERCENT MASS 96.9  
 CHI SQUARE 1.38 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 59	HD2-AMB	59.0357	24.7925	2.3812
YES 60	HD2-HSPT	112.1017	11.2850	9.9337
YES 61	HD2-HSG	577.0745	34.0737	16.9361

MEASURED CONCENTRATION FOR SIZE: VOC  
 771.8+- 23.5

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 154.3696 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

9.3254	17.5974	38.8124
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NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95

PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE
1.0000 59	1.0000 60	1.0000 61		

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES

COEFF. SOURCE	COEFF. SOURCE	COEFF. SOURCE	COEFF. SOURCE	SCE	STD ERR
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SPECIES CONCENTRATIONS - SITE: HD2-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .97 PERCENT MASS 96.9  
 CHI SQUARE 1.38 DF 28

SPECIES	I	MEAS	CALC			RATIO C/M		R/U
C1	TOT	771.8482+-	23.4807	748.2119+-	23.0580	.97+-	.04	-.7
C2	ETHYL *	2.7603+-	1.3802	1.9625+-	.7491	.71+-	.45	-.5
C3	ACETYL *	1.3840+-	.6920	1.2997+-	.5541	.94+-	.62	-.1
C4	PROPYL *	2.2956+-	1.1478	3.1226+-	.9153	1.36+-	.79	.6
C5	N-C3 *	15.8346+-	1.5835	14.1759+-	2.7032	.90+-	.19	-.5
C6	1BUTEN *	11.3368+-	1.1337	9.9950+-	1.2043	.88+-	.14	-.8
C7	N-C4 *	167.8243+-	16.7824	146.7710+-	14.7602	.87+-	.12	-.9
C8	2M-C4 *	69.4930+-	6.9493	57.4356+-	5.9795	.83+-	.12	-1.3
C9	N-C5 *	58.2017+-	5.8202	52.3069+-	5.3041	.90+-	.13	-.7
C10	CYC-C5 *	9.0361+-	.9036	8.1513+-	.7711	.90+-	.12	-.7
C11	2M-C5 *	45.8042+-	4.5804	38.1359+-	3.3264	.83+-	.11	-1.4
C12	3M-C5 *	21.9462+-	2.1946	18.6735+-	1.9808	.85+-	.12	-1.1
C13	N-C6 *	25.0374+-	2.5037	22.0543+-	2.3216	.88+-	.13	-.9
C14	MCYC-C *	15.5063+-	1.5506	13.4691+-	1.3058	.87+-	.12	-1.0
C15	BENZEN *	30.8232+-	3.0823	29.8032+-	3.1658	.97+-	.14	-.2
C16	2M-C6 *	10.5261+-	1.0526	10.0353+-	1.0266	.95+-	.14	-.3
C17	3M-C6 *	12.3293+-	1.2329	10.9300+-	1.2027	.89+-	.13	-.8
C18	224TMC *	7.0385+-	.7038	7.9776+-	1.3480	1.13+-	.22	.6
C19	N-C7 *	10.3493+-	1.0349	9.7248+-	1.1921	.94+-	.15	-.4
C20	TOLUEN *	80.6278+-	8.0628	84.2861+-	7.7750	1.05+-	.14	.3
C21	DMCYCC *	3.2174+-	1.6087	3.8603+-	1.4288	1.20+-	.75	.3
C22	N-C8 *	4.1392+-	2.0696	3.9983+-	.4467	.97+-	.49	-.1
C23	E-BENZ *	20.7668+-	2.0767	24.5438+-	2.2421	1.18+-	.16	1.2
C24	M&P-XY *	60.8509+-	6.0851	76.3309+-	6.9742	1.25+-	.17	1.7
C25	O-XYL *	25.1409+-	2.5141	32.6304+-	3.0240	1.30+-	.18	1.9
C26	3E-TOL *	14.9659+-	1.4966	20.5177+-	1.5062	1.37+-	.17	2.6
C27	4E-TOL *	6.5788+-	.6579	8.3579+-	1.2159	1.27+-	.22	1.3
C28	N-C10 *	9.3442+-	.9344	7.0715+-	.6146	.76+-	.10	-2.0
C29	3IP-TO *	3.1467+-	1.5734	5.2622+-	.3931	1.67+-	.85	1.3
C30	4IP-TO *	8.5259+-	.8526	9.7885+-	.7468	1.15+-	.14	1.1
C31	N-C11 *	13.6046+-	1.3605	10.7679+-	1.0227	.79+-	.11	-1.7
C32	N-C12 *	3.4119+-	1.7059	4.7717+-	.4022	1.40+-	.71	.8

SOURCE CONTRIBUTION ESTIMATES - SITE: HD1-HSH DATE: WINT98 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .93 PERCENT MASS 100.9  
 CHI SQUARE 1.88 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 64	HD1AHSB	32.2675	3.9104	8.2518
YES 66	HD1AHSB	68.6728	4.9716	13.8130

MEASURED CONCENTRATION FOR SIZE: VOC  
 100.0+- 4.5

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 20.0000 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

2.4588 5.8277

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

1.0000 64 1.0000 66

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: HD1-HSH DATE: WINT98 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .93 PERCENT MASS 100.9  
 CHI SQUARE 1.88 DF 29

SPECIES	I	MEAS	CALC	RATIO C/M	RATIO R/U
C1	TOT	100.0000+-	4.5284 100.9403+-	3.7055 1.01+-	.06 .2
C2	ETHYL *	.8014+-	.1202 .8249+-	.0710 1.03+-	.18 .2
C3	ACETYL *	.4303+-	.0645 .4667+-	.1869 1.08+-	.46 .2
C4	PROPYL *	.5839+-	.0876 .4962+-	.2021 .85+-	.37 -.4
C5	N-C3 *	1.4678+-	.2202 1.3084+-	.1128 .89+-	.15 -.6
C6	1BUTEN *	2.4147+-	.3622 .7544+-	.0823 .31+-	.06 -4.5
C7	N-C4 *	13.9697+-	2.0955 12.2177+-	1.0249 .87+-	.15 -.8
C8	2M-C4 *	7.3074+-	1.0961 6.6535+-	.5752 .91+-	.16 -.5
C9	N-C5 *	5.1974+-	.7796 4.6666+-	.4078 .90+-	.16 -.6
C10	CYC-C5 *	.8839+-	.1326 .8188+-	.1059 .93+-	.18 -.4
C11	2M-C5 *	4.0240+-	.6036 3.5411+-	.3060 .88+-	.15 -.7
C12	3M-C5 *	2.3891+-	.3584 2.2640+-	.1936 .95+-	.16 -.3
C13	N-C6 *	2.7685+-	.4153 2.4330+-	.2947 .88+-	.17 -.7
C14	MCYC-C *	2.6417+-	.3963 2.4920+-	.2173 .94+-	.16 -.3
C15	BENZEN *	5.3211+-	.7982 5.0350+-	.4421 .95+-	.16 -.3
C16	2M-C6 *	1.4408+-	.2161 1.2787+-	.1704 .89+-	.18 -.6
C17	3M-C6 *	1.6176+-	.2426 1.4094+-	.2017 .87+-	.18 -.7
C18	224TMC *	1.0002+-	.1500 .8615+-	.1459 .86+-	.19 -.7
C19	N-C7 *	1.4019+-	.2103 1.2349+-	.1637 .88+-	.18 -.6
C20	TOLUEN *	20.8116+-	3.1217 26.3895+-	1.9995 1.27+-	.21 1.5
C21	DMCYCC *	.3111+-	.0467 .3482+-	.1447 1.12+-	.49 .2
C22	N-C8 *	.4939+-	.0741 .6039+-	.0835 1.22+-	.25 1.0
C23	E-BENZ *	3.2712+-	.4907 3.5524+-	.2950 1.09+-	.19 .5
C24	M&P-XY *	9.2503+-	1.3875 10.9902+-	.9082 1.19+-	.20 1.0
C25	O-XYL *	3.9073+-	.5861 4.5854+-	.3746 1.17+-	.20 1.0
C26	3E-TOL *	1.8729+-	.2809 2.1885+-	.1756 1.17+-	.20 1.0
C27	4E-TOL *	1.7782+-	.2667 1.1038+-	.2000 .62+-	.15 -2.0
C28	N-C10 *	.7775+-	.1166 .2667+-	.1091 .34+-	.15 -3.2
C29	3IP-TO *	.4717+-	.0707 .3852+-	.1018 .82+-	.25 -.7
C30	4IP-TO *	.8273+-	.1241 1.2699+-	.1005 1.54+-	.26 2.8
C31	N-C11 *	.4255+-	.0638 .3205+-	.1380 .75+-	.34 -.7
C32	N-C12 *	.1399+-	.0210 .1792+-	.0644 1.28+-	.50 .6

SOURCE CONTRIBUTION ESTIMATES - SITE: HD1-HSH DATE: WINT98 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .93 PERCENT MASS 103.2  
 CHI SQUARE 2.19 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 70 HD1BHSB 34.2242 3.1436 10.8869  
 YES 72 HD1BHSG 68.9884 4.7548 14.5093  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 100.0+- 4.5

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 20.0000 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 2.2457 5.2390  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 70 1.0000 72  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: HD1-HSH DATE: WINT98 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .93 PERCENT MASS 103.2  
 CHI SQUARE 2.19 DF 29

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U
C1	TOT	100.0000+-	4.5284	103.2127+-	3.7485	1.03+-	.06	.5
C2	ETHYL *	.8014+-	.1202	.8636+-	.0996	1.08+-	.20	.4
C3	ACETYL *	.4303+-	.0645	.4888+-	.0568	1.14+-	.22	.7
C4	PROPYL *	.5839+-	.0876	.5202+-	.0620	.89+-	.17	-.6
C5	N-C3 *	1.4678+-	.2202	1.3699+-	.1585	.93+-	.18	-.4
C6	1BUTEN *	2.4147+-	.3622	.8002+-	.1202	.33+-	.07	-4.2
C7	N-C4 *	13.9697+-	2.0955	12.4384+-	4.0242	.89+-	.32	-.3
C8	2M-C4 *	7.3074+-	1.0961	6.7600+-	1.3369	.93+-	.23	-.3
C9	N-C5 *	5.1974+-	.7796	4.7380+-	.6963	.91+-	.19	-.4
C10	CYC-C5 *	.8839+-	.1326	.8315+-	.0452	.94+-	.15	-.4
C11	2M-C5 *	4.0240+-	.6036	3.5979+-	.4069	.89+-	.17	-.6
C12	3M-C5 *	2.3891+-	.3584	2.3019+-	.1852	.96+-	.16	-.2
C13	N-C6 *	2.7685+-	.4153	2.4670+-	.2223	.89+-	.16	-.6
C14	MCYC-C *	2.6417+-	.3963	2.5305+-	.2232	.96+-	.17	-.2
C15	BENZEN *	5.3211+-	.7982	5.1104+-	.8135	.96+-	.21	-.2
C16	2M-C6 *	1.4408+-	.2161	1.2994+-	.0798	.90+-	.15	-.6
C17	3M-C6 *	1.6176+-	.2426	1.4345+-	.0912	.89+-	.14	-.7
C18	224TMC *	1.0002+-	.1500	.8802+-	.0533	.88+-	.14	-.8
C19	N-C7 *	1.4019+-	.2103	1.2548+-	.0761	.90+-	.14	-.7
C20	TOLUEN *	20.8116+-	3.1217	27.1612+-	10.2676	1.31+-	.53	.6
C21	DMCYCC *	.3111+-	.0467	.3655+-	.0447	1.17+-	.23	.8
C22	N-C8 *	.4939+-	.0741	.6142+-	.0326	1.24+-	.20	1.5
C23	E-BENZ *	3.2712+-	.4907	3.6192+-	.3765	1.11+-	.20	.6
C24	M&P-XY *	9.2503+-	1.3875	11.2008+-	3.1087	1.21+-	.38	.6
C25	O-XYL *	3.9073+-	.5861	4.6773+-	.5694	1.20+-	.23	.9
C26	3E-TOL *	1.8729+-	.2809	2.2356+-	.1672	1.19+-	.20	1.1
C27	4E-TOL *	1.7782+-	.2667	1.1294+-	.0727	.64+-	.10	-2.3
C28	N-C10 *	.7775+-	.1166	.2797+-	.0335	.36+-	.07	-4.1
C29	3IP-TO *	.4717+-	.0707	.3982+-	.0330	.84+-	.14	-.9
C30	4IP-TO *	.8273+-	.1241	1.3213+-	.1313	1.60+-	.29	2.7
C31	N-C11 *	.4255+-	.0638	.3372+-	.0431	.79+-	.16	-1.1
C32	N-C12 *	.1399+-	.0210	.1859+-	.0170	1.33+-	.23	1.7

Scenario 2 Hot Soak Model Output

SOURCE CONTRIBUTION ESTIMATES - SITE: JE-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .94 PERCENT MASS 105.5  
 CHI SQUARE .44 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 3	EVAP97	24.3318	9.8997	2.4578
YES 9	JE-HSPT	120.9100	11.9056	10.1557

MEASURED CONCENTRATION FOR SIZE: VOC  
 137.6+- 7.5

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 27.5253 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

7.0242	13.7988
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NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE  
 1.0000 3 1.0000 9

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: JE-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .94 PERCENT MASS 105.5  
 CHI SQUARE .44 DF 29

SPECIES	I	MEAS	----	----	----	----	----	----	----	----	----	R/U
			----	----	----	----	----	----	----	----	----	
C1	TOT	137.6264+-	7.5005	145.2418+-	10.2777	1.06+-	.09					.6
C2	ETHYL *	3.9088+-	1.9544	5.5962+-	2.7982	1.43+-	1.01					.5
C3	ACETYL *	1.5190+-	.7595	2.5109+-	1.2609	1.65+-	1.17					.7
C4	PROPYL *	.6899+-	.3450	1.5129+-	.7503	2.19+-	1.54					1.0
C5	N-C3 *	5.3979+-	.5398	7.7798+-	3.7045	1.44+-	.70					.6
C6	1BUTEN *	4.2925+-	2.1463	2.7192+-	1.0106	.63+-	.39					-.7
C7	N-C4 *	7.3881+-	.7388	9.5972+-	3.1120	1.30+-	.44					.7
C8	2M-C4 *	3.7060+-	1.8530	5.4774+-	1.6425	1.48+-	.86					.7
C9	N-C5 *	3.2248+-	1.6124	3.8717+-	1.2043	1.20+-	.71					.3
C10	CYC-C5 *	1.0597+-	.5299	.6148+-	.0421	.58+-	.29					-.8
C11	2M-C5 *	3.0280+-	1.5140	2.5749+-	.7968	.85+-	.50					-.3
C12	3M-C5 *	2.5091+-	1.2545	2.4373+-	.9215	.97+-	.61					.0
C13	N-C6 *	2.6602+-	1.3301	2.2835+-	.7938	.86+-	.52					-.2
C14	MCYC-C *	1.8311+-	.9156	1.8241+-	.5300	1.00+-	.58					.0
C15	BENZEN *	3.0777+-	1.5389	5.5986+-	1.8121	1.82+-	1.08					1.1
C16	2M-C6 *	1.5607+-	.7804	1.3060+-	.5143	.84+-	.53					-.3
C17	3M-C6 *	2.5210+-	1.2605	2.4335+-	1.0786	.97+-	.64					-.1
C18	224TMC *	1.4772+-	.7386	1.2561+-	.5328	.85+-	.56					-.2
C19	N-C7 *	2.4932+-	1.2466	2.3569+-	.9980	.95+-	.62					-.1
C20	TOLUEN *	21.0311+-	2.1031	17.8746+-	1.7977	.85+-	.12					-1.1
C21	DMCYCC *	4.7915+-	2.3958	4.2650+-	2.1488	.89+-	.63					-.2
C22	N-C8 *	11.5673+-	1.1567	9.0924+-	1.1218	.79+-	.12					-1.5
C23	E-BENZ *	2.5111+-	1.2555	2.7735+-	1.0418	1.10+-	.69					.2
C24	M&P-XY *	7.8712+-	.7871	9.0979+-	3.5549	1.16+-	.47					.3
C25	O-XYL *	2.9684+-	1.4842	3.5652+-	1.4164	1.20+-	.77					.3
C26	3E-TOL *	2.5489+-	1.2744	2.6817+-	1.2080	1.05+-	.71					.1
C27	4E-TOL *	1.1492+-	.5746	2.3606+-	1.1462	2.05+-	1.43					.9
C28	N-C10 *	2.6483+-	1.3241	3.2015+-	1.6161	1.21+-	.86					.3
C29	3IP-TO *	5.6087+-	.5609	3.5883+-	1.8057	.64+-	.33					-1.1
C30	4IP-TO *	2.7159+-	1.3579	2.3595+-	1.1674	.87+-	.61					-.2
C31	N-C11 *	16.8837+-	1.6884	19.7764+-	2.4790	1.17+-	.19					1.0
C32	N-C12 *	2.9863+-	1.4931	2.8540+-	1.4264	.96+-	.68					-.1

SOURCE CONTRIBUTION ESTIMATES - SITE: SV-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 95.1  
 CHI SQUARE 1.34 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 4 WHLGAS97 67.5185 9.0294 7.4776  
 YES 14 SV-HSPT 260.5986 14.8217 17.5823  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 345.1+- 13.4

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 69.0215 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 7.3800 15.7082  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 4 1.0000 14  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: SV-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 95.1  
 CHI SQUARE 1.34 DF 28

SPECIES	I	MEAS	CALC	RATIO C/M	RATIO R/U
C1	TOT	345.1075+-	13.3917 328.1172+-	12.9409 .95+-	.05 -.9
C2	ETHYL *	2.7320+-	1.3660 1.6050+-	.8053 .59+-	.42 -.7
C3	ACETYL *	1.8894+-	.9447 1.4789+-	.7420 .78+-	.55 -.3
C4	PROPYL *	1.4233+-	.7117 .6299+-	.3162 .44+-	.31 -1.0
C5	N-C3 *	11.6383+-	1.1638 12.5186+-	1.3394 1.08+-	.16 .5
C6	1BUTEN	.0000<	.0001 1.1613<	.1761 .00<	.00 6.6
C7	N-C4 *	17.6232+-	1.7623 13.8148+-	1.3204 .78+-	.11 -1.7
C8	2M-C4 *	97.9544+-	9.7954 96.7679+-	9.5872 .99+-	.14 -.1
C9	N-C5 *	6.1943+-	.6194 6.0517+-	1.0503 .98+-	.20 -.1
C10	CYC-C5 *	1.4158+-	.7079 1.1226+-	.1238 .79+-	.41 -.4
C11	2M-C5 *	6.1295+-	.6129 6.9335+-	1.2567 1.13+-	.23 .6
C12	3M-C5 *	3.0635+-	1.5317 4.2524+-	.7392 1.39+-	.73 .7
C13	N-C6 *	3.5919+-	1.7960 4.1580+-	.8591 1.16+-	.63 .3
C14	MCYC-C *	4.2799+-	2.1400 4.9691+-	.9425 1.16+-	.62 .3
C15	BENZEN *	5.5362+-	.5536 6.9628+-	.6113 1.26+-	.17 1.7
C16	2M-C6 *	2.2683+-	1.1342 2.6133+-	.5776 1.15+-	.63 .3
C17	3M-C6 *	3.1059+-	1.5529 2.0835+-	.2511 .67+-	.35 -.6
C18	224TMC *	1.6776+-	.8388 2.1011+-	.3931 1.25+-	.67 .5
C19	N-C7 *	1.9966+-	.9983 2.5691+-	.5240 1.29+-	.69 .5
C20	TOLUEN *	28.3790+-	2.8379 24.8614+-	2.1830 .88+-	.12 -1.0
C21	DMCYCC *	3.3202+-	1.6601 4.3921+-	.4692 1.32+-	.68 .6
C22	N-C8 *	1.4732+-	.7366 1.9641+-	.5587 1.33+-	.77 .5
C23	E-BENZ *	11.5585+-	1.1559 11.2371+-	1.0633 .97+-	.13 -.2
C24	M&P-XY *	44.4493+-	4.4449 40.1435+-	3.8499 .90+-	.13 -.7
C25	O-XYL *	15.7587+-	1.5759 15.2756+-	1.4455 .97+-	.13 -.2
C26	3E-TOL *	7.4905+-	.7490 7.0443+-	.6552 .94+-	.13 -.4
C27	4E-TOL *	2.6073+-	1.3037 3.7266+-	1.6003 1.43+-	.94 .5
C28	N-C10 *	.5135+-	.2567 2.9855+-	1.4576 5.81+-	4.06 1.7
C29	3IP-TO *	2.5500+-	1.2750 2.3675+-	1.1878 .93+-	.66 -.1
C30	4IP-TO *	41.2337+-	4.1234 24.0259+-	2.5582 .58+-	.09 -3.5
C31	N-C11 *	10.8082+-	1.0808 11.5581+-	1.2454 1.07+-	.16 .5
C32	N-C12 *	2.4453+-	1.2227 6.7418+-	.7258 2.76+-	1.41 3.0

SOURCE CONTRIBUTION ESTIMATES - SITE: MH-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 94.0  
 CHI SQUARE .98 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 3	EVAP97	72.7793	24.2830	2.9971
YES 19	MH-AMB	139.5426	27.4870	5.0767
YES 20	MH-HSPT	115.5429	22.2907	5.1835

MEASURED CONCENTRATION FOR SIZE: VOC  
 348.9+- 10.3

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 69.7752 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

8.5117	27.3606	31.9535
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NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95

PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE
1.0000 3	1.0000 19	1.0000 20		

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES

COEFF. SOURCE	COEFF. SOURCE	COEFF. SOURCE	COEFF. SOURCE	SCE	STD ERR
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SPECIES CONCENTRATIONS - SITE: MH-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 94.0  
 CHI SQUARE .98 DF 28

SPECIES	I	MEAS	CALC	RATIO C/M	RATIO R/U
C1	TOT	348.8761+-	10.3394 327.8647+-	15.2328 .94+-	.05 -1.1
C2	ETHYL *	12.6485+-	1.2648 13.3166+-	2.0694 1.05+-	.19 .3
C3	ACETYL *	7.7589+-	.7759 9.5943+-	3.9962 1.24+-	.53 .5
C4	PROPYL *	5.2767+-	.5277 5.6507+-	2.2601 1.07+-	.44 .2
C5	N-C3 *	26.7114+-	2.6711 13.3303+-	4.9684 .50+-	.19 -2.4
C6	1BUTEN *	5.7919+-	.5792 8.9049+-	2.8480 1.54+-	.52 1.1
C7	N-C4 *	60.2044+-	6.0204 35.8400+-	2.9190 .60+-	.08 -3.6
C8	2M-C4 *	21.4534+-	2.1453 23.4343+-	4.9604 1.09+-	.26 .4
C9	N-C5 *	15.0589+-	1.5059 15.3707+-	2.9399 1.02+-	.22 .1
C10	CYC-C5 *	2.9740+-	1.4870 3.0891+-	.8270 1.04+-	.59 .1
C11	2M-C5 *	16.5888+-	1.6589 17.6437+-	3.4518 1.06+-	.23 .3
C12	3M-C5 *	11.4042+-	1.1404 12.5638+-	2.6335 1.10+-	.26 .4
C13	N-C6 *	11.9069+-	1.1907 12.2743+-	1.9932 1.03+-	.20 .2
C14	MCYC-C *	9.8275+-	.9827 9.5331+-	1.3089 .97+-	.16 -.2
C15	BENZEN *	13.5102+-	1.3510 17.1916+-	3.6072 1.27+-	.30 1.0
C16	2M-C6 *	6.3961+-	.6396 6.2491+-	1.9648 .98+-	.32 -.1
C17	3M-C6 *	8.5473+-	.8547 7.6101+-	1.5300 .89+-	.20 -.5
C18	224TMC *	4.7881+-	2.3940 4.9324+-	1.5520 1.03+-	.61 .1
C19	N-C7 *	6.3758+-	.6376 6.0381+-	.8310 .95+-	.16 -.3
C20	TOLUEN *	34.3048+-	3.4305 39.0617+-	3.1636 1.14+-	.15 1.0
C21	DMCYCC *	2.8600+-	1.4300 2.0930+-	.7674 .73+-	.45 -.5
C22	N-C8 *	4.3915+-	2.1958 4.5285+-	1.5419 1.03+-	.62 .1
C23	E-BENZ *	6.6693+-	.6669 7.0450+-	1.7774 1.06+-	.29 .2
C24	M&P-XY *	22.4791+-	2.2479 23.0858+-	4.2825 1.03+-	.22 .1
C25	O-XYL *	9.9758+-	.9976 9.6219+-	2.0073 .96+-	.22 -.2
C26	3E-TOL *	6.9721+-	.6972 8.2729+-	1.3840 1.19+-	.23 .8
C27	4E-TOL *	3.1598+-	1.5799 2.5614+-	.6859 .81+-	.46 -.3
C28	N-C10 *	.4324+-	.4324 .9769+-	.0183 2.26+-	2.26 1.3
C29	3IP-TO *	2.9631+-	1.4815 3.6772+-	1.5225 1.24+-	.81 .3
C30	4IP-TO *	3.9091+-	1.9546 2.1305+-	.9928 .55+-	.37 -.8
C31	N-C11 *	2.4198+-	1.2099 1.4715+-	.7179 .61+-	.42 -.7
C32	N-C12 *	1.1162+-	.5581 .7715+-	.3377 .69+-	.46 -.5



SOURCE CONTRIBUTION ESTIMATES - SITE: SR-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .97 PERCENT MASS 98.3  
 CHI SQUARE .61 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 3	EVAP97	143.7698	9.8655	14.5731
YES 25	SR-HSPT	54.1989	8.8018	6.1577

MEASURED CONCENTRATION FOR SIZE: VOC  
 201.3+- 8.0

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 40.2651 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

6.3036 11.6217

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

1.0000 3 1.0000 25

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: SR-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .97 PERCENT MASS 98.3  
 CHI SQUARE .61 DF 29

SPECIES	I	MEAS	CALC	RATIO C/M	RATIO R/U
C1	TOT	201.3253+-	8.0244 197.9687+-	9.0311 .98+-	.06 -.3
C2	ETHYL *	3.8806+-	1.9403 2.8219+-	1.2408 .73+-	.48 -.5
C3	ACETYL *	2.1784+-	1.0892 1.7421+-	.8285 .80+-	.55 -.3
C4	PROPYL *	1.3179+-	.6589 .7543+-	.2947 .57+-	.36 -.8
C5	N-C3 *	8.9952+-	.8995 9.4648+-	.9446 1.05+-	.15 .4
C6	1BUTEN *	6.4839+-	.6484 5.2372+-	.7954 .81+-	.15 -1.2
C7	N-C4 *	26.7718+-	2.6772 24.9729+-	3.1740 .93+-	.15 -.4
C8	2M-C4 *	8.7029+-	.8703 16.1574+-	2.4153 1.86+-	.33 2.9
C9	N-C5 *	10.0533+-	1.0053 10.3637+-	1.5103 1.03+-	.18 .2
C10	CYC-C5 *	1.9268+-	.9634 1.9020+-	.2386 .99+-	.51 .0
C11	2M-C5 *	7.6178+-	.7618 7.1184+-	1.0523 .93+-	.17 -.4
C12	3M-C5 *	5.2012+-	.5201 4.2664+-	.6256 .82+-	.15 -1.1
C13	N-C6 *	5.2364+-	.5236 4.9405+-	.7213 .94+-	.17 -.3
C14	MCYC-C *	5.2851+-	.5285 5.1650+-	.7427 .98+-	.17 -.1
C15	BENZEN *	12.4293+-	1.2429 13.9366+-	2.0282 1.12+-	.20 .6
C16	2M-C6 *	2.5221+-	1.2611 2.0992+-	.3198 .83+-	.44 -.3
C17	3M-C6 *	3.9753+-	1.9877 2.6334+-	.5051 .66+-	.35 -.7
C18	224TMC *	2.0729+-	1.0364 1.5963+-	.2675 .77+-	.41 -.4
C19	N-C7 *	2.4355+-	1.2178 2.6176+-	.3429 1.07+-	.56 .1
C20	TOLUEN *	35.0417+-	3.5042 33.2496+-	4.2095 .95+-	.15 -.3
C21	DMCYCC *	2.2353+-	1.1176 1.3616+-	.6419 .61+-	.42 -.7
C22	N-C8 *	2.0296+-	1.0148 1.7945+-	.4750 .88+-	.50 -.2
C23	E-BENZ *	4.7087+-	2.3543 5.2423+-	.8052 1.11+-	.58 .2
C24	M&P-XY *	15.7740+-	1.5774 15.8653+-	1.9087 1.01+-	.16 .0
C25	O-XYL *	6.4244+-	.6424 6.2735+-	1.1004 .98+-	.20 -.1
C26	3E-TOL *	3.5450+-	1.7725 4.4282+-	1.3844 1.25+-	.74 .4
C27	4E-TOL *	1.6967+-	.8484 .5571+-	.0837 .33+-	.17 -1.3
C28	N-C10 *	4.1160+-	2.0580 3.2649+-	1.6340 .79+-	.56 -.3
C29	3IP-TO *	2.3706+-	1.1853 1.7271+-	.8209 .73+-	.50 -.4
C30	4IP-TO *	1.9268+-	.9634 2.1206+-	.9212 1.10+-	.73 .1
C31	N-C11 *	3.6316+-	1.8158 3.0261+-	1.4898 .83+-	.58 -.3
C32	N-C12 *	.7388+-	.3694 1.2686+-	.5427 1.72+-	1.13 .8

SOURCE CONTRIBUTION ESTIMATES - SITE: JS-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .86 PERCENT MASS 87.8  
 CHI SQUARE 6.55 DF 27  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 3 EVAP97 50.6407 18.8460 2.6871  
 YES 4 WHLGAS97 45.4981 20.1592 2.2569  
 YES 30 JS-HSPT 319.9579 16.2775 19.6564  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 474.1+- 15.2

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 94.8227 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 5.7624 16.9023 26.6013  
 -----

NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 3 1.0000 4 1.0000 30  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: JS-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .86 PERCENT MASS 87.8  
 CHI SQUARE 6.55 DF 27

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U
C1	TOT	474.1134+-	15.1953	416.0967+-	12.8715	.88+-	.04	-2.9
C2	ETHYL *	5.6745+-	.5674	5.9873+-	.6198	1.06+-	.15	.4
C3	ACETYL *	2.9669+-	1.4834	3.2844+-	1.6276	1.11+-	.78	.1
C4	PROPYL	.0000<	.0001	2.1705<	1.0572	.00<	.00	2.1
C5	N-C3 *	13.2381+-	1.3238	13.9790+-	1.3756	1.06+-	.15	.4
C6	1BUTEN *	5.0936+-	.5094	5.1949+-	1.4698	1.02+-	.31	.1
C7	N-C4 *	25.5376+-	2.5538	25.1378+-	1.8981	.98+-	.12	-.1
C8	2M-C4 *	118.5811+-	11.8581	86.2673+-	8.0578	.73+-	.10	-2.3
C9	N-C5 *	9.1166+-	.9117	10.3511+-	.7905	1.14+-	.14	1.0
C10	CYC-C5 *	2.0475+-	1.0238	1.8810+-	.4066	.92+-	.50	-.2
C11	2M-C5 *	12.5516+-	1.2552	12.8679+-	.9825	1.03+-	.13	.2
C12	3M-C5 *	9.2751+-	.9275	8.7829+-	.6793	.95+-	.12	-.4
C13	N-C6 *	11.0441+-	1.1044	9.8684+-	.7786	.89+-	.11	-.9
C14	MCYC-C *	5.5857+-	.5586	6.1318+-	1.1710	1.10+-	.24	.4
C15	BENZEN *	9.8440+-	.9844	10.3922+-	.8355	1.06+-	.14	.4
C16	2M-C6 *	4.7936+-	2.3968	4.3992+-	1.3844	.92+-	.54	-.1
C17	3M-C6 *	6.3754+-	.6375	5.5382+-	1.9078	.87+-	.31	-.4
C18	224TMC *	4.2607+-	2.1303	3.7173+-	1.1717	.87+-	.52	-.2
C19	N-C7 *	5.6481+-	.5648	5.2412+-	1.6793	.93+-	.31	-.2
C20	TOLUEN *	42.5251+-	4.2525	37.8000+-	2.8961	.89+-	.11	-.9
C21	DMCYCC *	7.2948+-	.7295	4.9169+-	.5126	.67+-	.10	-2.7
C22	N-C8 *	5.2256+-	.5226	8.7995+-	.8408	1.68+-	.23	3.6
C23	E-BENZ *	9.3303+-	.9330	9.2430+-	.7530	.99+-	.13	-.1
C24	M&P-XY *	37.7892+-	3.7789	31.1051+-	2.5911	.82+-	.11	-1.5
C25	O-XYL *	12.3091+-	1.2309	13.6593+-	1.1599	1.11+-	.15	.8
C26	3E-TOL *	17.7532+-	1.7753	12.0037+-	1.1277	.68+-	.09	-2.7
C27	4E-TOL *	5.7105+-	.5710	4.5043+-	1.9774	.79+-	.36	-.6
C28	N-C10 *	30.8905+-	3.0890	1.3194+-	.6281	.04+-	.02	-9.4
C29	3IP-TO *	7.2972+-	.7297	4.6461+-	.4877	.64+-	.09	-3.0
C30	4IP-TO *	17.7964+-	1.7796	47.8594+-	5.0238	2.69+-	.39	5.6
C31	N-C11 *	25.2352+-	2.5235	16.7220+-	1.7623	.66+-	.10	-2.8
C32	N-C12 *	3.3221+-	1.6611	2.3256+-	1.1196	.70+-	.49	-.5

SOURCE CONTRIBUTION ESTIMATES - SITE: PB-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 99.9  
 CHI SQUARE 1.45 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 4 WHLGAS97 29.6446 7.6554 3.8724  
 YES 35 PB-HSPT 306.4890 14.7557 20.7708  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 336.6+- 11.1

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 67.3120 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 6.1153 15.4577  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 4 1.0000 35  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: PB-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 99.9  
 CHI SQUARE 1.45 DF 28

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U
C1	TOT		336.5599+-	11.1252	336.1336+-	12.3551	1.00+-	.05
C2	ETHYL *		3.4131+-	1.7066	2.9892+-	1.4978	.88+-	.62
C3	ACETYL *		2.2275+-	1.1137	1.9569+-	.9805	.88+-	.62
C4	PROPYL *		1.1088+-	.5544	.9541+-	.4781	.86+-	.61
C5	N-C3 *		9.4853+-	.9485	7.5244+-	.7856	.79+-	.11
C6	1BUTEN *		2.8253+-	1.4126	1.8302+-	.6661	.65+-	.40
C7	N-C4 *		13.2283+-	1.3228	12.2860+-	1.0672	.93+-	.12
C8	2M-C4 *		5.5811+-	.5581	7.2713+-	1.7555	1.30+-	.34
C9	N-C5 *		5.3082+-	.5308	6.2370+-	.5378	1.17+-	.16
C10	CYC-C5 *		1.3940+-	.6970	.7478+-	.0614	.54+-	.27
C11	2M-C5 *		4.9833+-	2.4916	6.3100+-	2.1084	1.27+-	.76
C12	3M-C5 *		4.5045+-	2.2523	4.1704+-	1.4207	.93+-	.56
C13	N-C6 *		6.8312+-	.6831	6.1098+-	.5495	.89+-	.12
C14	MCYC-C *		4.0928+-	2.0464	4.2128+-	1.3838	1.03+-	.62
C15	BENZEN *		4.3954+-	2.1977	3.7827+-	1.3596	.86+-	.53
C16	2M-C6 *		3.2395+-	1.6197	3.1719+-	1.2501	.98+-	.62
C17	3M-C6 *		4.3359+-	2.1679	4.0224+-	1.6529	.93+-	.60
C18	224TMC *		3.2072+-	1.6036	3.1329+-	1.2547	.98+-	.63
C19	N-C7 *		4.6385+-	2.3192	4.4754+-	1.8831	.96+-	.63
C20	TOLUEN *		34.0072+-	3.4007	28.6828+-	2.6724	.84+-	.12
C21	DMCYCC		.0000<	.0001	4.7742<	.4999	.00<	.00
C22	N-C8 *		2.7186+-	1.3593	1.9751+-	.7978	.73+-	.47
C23	E-BENZ *		6.9304+-	.6930	6.8303+-	.6502	.99+-	.14
C24	M&P-XY *		24.4971+-	2.4497	23.8485+-	2.2909	.97+-	.13
C25	O-XYL *		9.8375+-	.9838	9.4923+-	.9056	.96+-	.13
C26	3E-TOL *		18.3778+-	1.8378	22.8176+-	2.3464	1.24+-	.18
C27	4E-TOL *		8.6866+-	.8687	2.0955+-	.9315	.24+-	.11
C28	N-C10 *		45.9358+-	4.5936	47.4246+-	4.9887	1.03+-	.15
C29	3IP-TO *		8.6395+-	.8639	9.8150+-	1.0332	1.14+-	.16
C30	4IP-TO *		18.7846+-	1.8785	21.2205+-	2.2161	1.13+-	.16
C31	N-C11 *		40.4143+-	4.0414	39.2297+-	4.1275	.97+-	.14
C32	N-C12 *		32.9307+-	3.2931	36.7431+-	3.8664	1.12+-	.16

SOURCE CONTRIBUTION ESTIMATES - SITE: GS-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 93.5  
 CHI SQUARE 1.35 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 3 EVAP97 56.4331 11.1113 5.0789  
 YES 40 GS-HSPT 194.0163 12.2581 15.8275  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 267.9+- 8.2

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 53.5815 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 6.7254 15.1159  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 3 1.0000 40  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: GS-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 93.5  
 CHI SQUARE 1.35 DF 28

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U	
C1	TOT		267.9076+-	8.1783	250.4494+-	9.6142	.93+-	.05	-1.4
C2	ETHYL *		5.4261+-	.5426	6.6973+-	.7287	1.23+-	.18	1.4
C3	ACETYL *		3.0557+-	1.5278	4.0645+-	2.0213	1.33+-	.94	.4
C4	PROPYL *		2.2714+-	1.1357	2.6893+-	1.3166	1.18+-	.83	.2
C5	N-C3 *		7.1214+-	.7121	10.7014+-	1.0838	1.50+-	.21	2.8
C6	1BUTEN *		5.2560+-	.5256	3.8928+-	1.1311	.74+-	.23	-1.1
C7	N-C4 *		27.8029+-	2.7803	20.9891+-	1.8798	.75+-	.10	-2.0
C8	2M-C4 *		8.0655+-	.8066	13.3975+-	1.2016	1.66+-	.22	3.7
C9	N-C5 *		10.0781+-	1.0078	8.3396+-	2.4607	.83+-	.26	-.7
C10	CYC-C5 *		1.6040+-	.8020	1.2044+-	.0956	.75+-	.38	-.5
C11	2M-C5 *		11.8597+-	1.1860	10.0431+-	.9234	.85+-	.12	-1.2
C12	3M-C5 *		9.5451+-	.9545	8.0060+-	.7606	.84+-	.12	-1.3
C13	N-C6 *		13.3621+-	1.3362	12.2515+-	1.2010	.92+-	.13	-.6
C14	MCYC-C *		7.3498+-	.7350	5.8809+-	2.0376	.80+-	.29	-.7
C15	BENZEN *		9.8953+-	.9895	9.8379+-	2.6325	.99+-	.28	.0
C16	2M-C6 *		4.9312+-	2.4656	4.4992+-	1.9219	.91+-	.60	-.1
C17	3M-C6 *		6.6620+-	.6662	6.0810+-	2.7043	.91+-	.42	-.2
C18	224TMC *		2.4922+-	1.2461	2.1489+-	.8444	.86+-	.55	-.2
C19	N-C7 *		5.5860+-	.5586	4.8937+-	2.0120	.88+-	.37	-.3
C20	TOLUEN *		32.3813+-	3.2381	28.5826+-	2.5563	.88+-	.12	-.9
C21	DMCYCC *		4.5200+-	2.2600	3.8066+-	1.8938	.84+-	.59	-.2
C22	N-C8 *		2.9211+-	1.4606	3.7668+-	1.7169	1.29+-	.87	.4
C23	E-BENZ *		4.7459+-	2.3730	4.9674+-	1.6700	1.05+-	.63	.1
C24	M&P-XY *		16.3594+-	1.6359	15.5093+-	1.3902	.95+-	.13	-.4
C25	O-XYL *		7.4589+-	.7459	7.2613+-	2.7593	.97+-	.38	-.1
C26	3E-TOL *		23.7295+-	2.3730	22.9127+-	2.4731	.97+-	.14	-.2
C27	4E-TOL *		.0000<	.0001	.2187<	.0381	.00<	.00	5.7
C28	N-C10 *		6.0859+-	.6086	5.9288+-	2.9716	.97+-	.50	-.1
C29	3IP-TO *		7.6366+-	.7637	6.9137+-	.7641	.91+-	.13	-.7
C30	4IP-TO *		9.0959+-	.9096	7.4265+-	.8125	.82+-	.12	-1.4
C31	N-C11 *		6.7762+-	.6776	5.1366+-	2.5643	.76+-	.39	-.6
C32	N-C12 *		3.8323+-	1.9161	2.4006+-	1.1671	.63+-	.44	-.6

SOURCE CONTRIBUTION ESTIMATES - SITE: RW-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .94 PERCENT MASS 101.1  
 CHI SQUARE 1.29 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 3	EVAP97	236.1550	18.4347	12.8104
YES 44	RW-AMB	28.6818	14.5410	1.9725
YES 45	RW-HSPT	69.4912	15.1505	4.5867

MEASURED CONCENTRATION FOR SIZE: VOC  
 330.6+- 10.6

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 66.1191 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

7.4128	17.2761	20.6737
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NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95

PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE
1.0000 3	1.0000 44	1.0000 45		

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES

COEFF. SOURCE	COEFF. SOURCE	COEFF. SOURCE	COEFF. SOURCE	SCE	STD ERR
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SPECIES CONCENTRATIONS - SITE: RW-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .94 PERCENT MASS 101.1  
 CHI SQUARE 1.29 DF 28

SPECIES	I	MEAS	CALC	RATIO C/M	RATIO R/U
C1	TOT	330.5954+-	10.5854 334.3279+-	14.0173 1.01+-	.05 .2
C2	ETHYL *	3.5304+-	1.7652 1.7291+-	.5718 .49+-	.29 -1.0
C3	ACETYL *	1.7165+-	.8583 2.3070+-	.7754 1.34+-	.81 .5
C4	PROPYL *	1.7876+-	.8938 1.7187+-	.5436 .96+-	.57 -.1
C5	N-C3 *	7.0108+-	.7011 9.0553+-	1.7917 1.29+-	.29 1.1
C6	1BUTEN *	14.2349+-	1.4235 8.6449+-	1.2130 .61+-	.10 -3.0
C7	N-C4 *	42.5519+-	4.2552 40.1808+-	5.5704 .94+-	.16 -.3
C8	2M-C4 *	40.1904+-	4.0190 51.1061+-	4.5154 1.27+-	.17 1.8
C9	N-C5 *	39.2532+-	3.9253 29.1525+-	2.7882 .74+-	.10 -2.1
C10	CYC-C5 *	3.0144+-	1.5072 3.1126+-	.3919 1.03+-	.53 .1
C11	2M-C5 *	10.9861+-	1.0986 11.5849+-	1.6090 1.05+-	.18 .3
C12	3M-C5 *	6.9476+-	.6948 7.3267+-	1.0219 1.05+-	.18 .3
C13	N-C6 *	7.4478+-	.7448 8.0624+-	1.1194 1.08+-	.19 .5
C14	MCYC-C *	8.6009+-	.8601 8.8104+-	1.2280 1.02+-	.18 .1
C15	BENZEN *	15.6144+-	1.5614 23.0486+-	3.1975 1.48+-	.25 2.1
C16	2M-C6 *	3.6963+-	1.8481 3.4600+-	.4567 .94+-	.48 -.1
C17	3M-C6 *	5.5628+-	.5563 4.7748+-	.8052 .86+-	.17 -.8
C18	224TMC *	2.7669+-	1.3835 2.9707+-	.4632 1.07+-	.56 .1
C19	N-C7 *	3.8332+-	1.9166 4.4265+-	.6030 1.15+-	.60 .3
C20	TOLUEN *	48.0884+-	4.8088 52.7558+-	6.9858 1.10+-	.18 .6
C21	DMCYCC *	1.6402+-	.8201 .6913+-	.2251 .42+-	.25 -1.1
C22	N-C8 *	2.7617+-	1.3808 3.0550+-	.6634 1.11+-	.60 .2
C23	E-BENZ *	8.2929+-	.8293 8.5974+-	1.2009 1.04+-	.18 .2
C24	M&P-XY *	24.5944+-	2.4594 25.6078+-	3.6312 1.04+-	.18 .2
C25	O-XYL *	10.8229+-	1.0823 9.9484+-	1.4757 .92+-	.16 -.5
C26	3E-TOL *	6.2473+-	.6247 4.2190+-	.6680 .68+-	.13 -2.2
C27	4E-TOL *	2.2509+-	1.1255 1.5519+-	.2522 .69+-	.36 -.6
C28	N-C10 *	1.4085+-	.7042 1.1750+-	.4255 .83+-	.52 -.3
C29	3IP-TO *	1.2953+-	.6476 .3463+-	.0268 .27+-	.14 -1.5
C30	4IP-TO *	2.4773+-	1.2387 3.6934+-	1.4240 1.49+-	.94 .6
C31	N-C11 *	1.0820+-	.5410 .8907+-	.2929 .82+-	.49 -.3
C32	N-C12 *	.8872+-	.4436 .3240+-	.0492 .37+-	.19 -1.3

SOURCE CONTRIBUTION ESTIMATES - SITE: KR-HSH DATE: WINT99 CMB8 (97350)  
SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
R SQUARE .98 PERCENT MASS 99.6  
CHI SQUARE .95 DF 27  
B and L: No SRC ELIM: Yes  
WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 2	HOTST97	30.9403	14.1091	2.1929
YES 6	EVAP99	107.9964	37.2597	2.8985
YES 7	WHLGAS99	70.3903	30.8583	2.2811
YES 50	KR-HSPT	301.4570	16.7429	18.0051

MEASURED CONCENTRATION FOR SIZE: VOC  
512.8+- 14.6

ELIGIBLE SPACE DIM. = 4 FOR MAX. UNC. = 102.5588 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

7.0432 15.1013 17.4817 47.2932

NUMBER ESTIMABLE SOURCES = 4 FOR MIN. PROJ. = .95  
PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE  
1.0000 2 1.0000 6 1.0000 7 1.0000 50

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: KR-HSH DATE: WINT99 CMB 8.0  
SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
R SQUARE .98 PERCENT MASS 99.6  
CHI SQUARE .95 DF 27

SPECIES	I	MEAS	---	---	---	---	---	---	---	RATIO C/M	---	R/U
C1	TOT	*	512.7941+-	14.5783	510.7840+-	15.8413	1.00+-	.04				-.1
C2	ETHYL	*	3.8305+-	1.9152	6.8310+-	1.5572	1.78+-	.98				1.2
C3	ACETYL	*	1.9830+-	.9915	1.9626+-	.7685	.99+-	.63				.0
C4	PROPYL	*	3.2442+-	1.6221	3.5325+-	1.1259	1.09+-	.65				.1
C5	N-C3	*	29.0157+-	2.9016	35.9581+-	3.5911	1.24+-	.18				1.5
C6	1BUTEN	*	6.1608+-	.6161	4.5959+-	.8025	.75+-	.15				-1.5
C7	N-C4	*	87.5152+-	8.7515	84.9474+-	6.2069	.97+-	.12				-.2
C8	2M-C4	*	34.8662+-	3.4866	33.4838+-	2.2398	.96+-	.12				-.3
C9	N-C5	*	21.3326+-	2.1333	19.9858+-	2.2382	.94+-	.14				-.4
C10	CYC-C5	*	3.1211+-	1.5605	3.1059+-	.2473	1.00+-	.50				.0
C11	2M-C5	*	13.6642+-	1.3664	15.4852+-	1.8873	1.13+-	.18				.8
C12	3M-C5	*	8.8533+-	.8853	9.1835+-	1.1035	1.04+-	.16				.2
C13	N-C6	*	12.2379+-	1.2238	10.5203+-	1.5152	.86+-	.15				-.9
C14	MCYC-C	*	9.2720+-	.9272	7.5520+-	1.1968	.81+-	.15				-1.1
C15	BENZEN	*	14.0115+-	1.4011	15.4295+-	2.2155	1.10+-	.19				.5
C16	2M-C6	*	4.3158+-	2.1579	4.5865+-	.5931	1.06+-	.55				.1
C17	3M-C6	*	5.7199+-	.5720	5.8573+-	1.0424	1.02+-	.21				.1
C18	224TMC	*	3.6236+-	1.8118	3.0960+-	.5468	.85+-	.45				-.3
C19	N-C7	*	4.5596+-	2.2798	5.2659+-	.7531	1.15+-	.60				.3
C20	TOLUEN	*	50.9838+-	5.0984	41.7900+-	2.9068	.82+-	.10				-1.6
C21	DMCYCC	*	11.3338+-	1.1334	13.2417+-	1.3708	1.17+-	.17				1.1
C22	N-C8	*	2.9733+-	1.4866	3.5912+-	.9671	1.21+-	.69				.3
C23	E-BENZ	*	11.5482+-	1.1548	12.7227+-	.8710	1.10+-	.13				.8
C24	M&P-XY	*	35.4820+-	3.5482	39.0633+-	2.6794	1.10+-	.13				.8
C25	O-XYL	*	15.3787+-	1.5379	16.3173+-	1.1127	1.06+-	.13				.5
C26	3E-TOL	*	21.5395+-	2.1539	20.6540+-	1.8200	.96+-	.13				-.3
C27	4E-TOL	*	1.3524+-	.6762	2.5337+-	.6258	1.87+-	1.04				1.3
C28	N-C10	*	30.6760+-	3.0676	29.0160+-	3.0203	.95+-	.14				-.4
C29	3IP-TO	*	12.2428+-	1.2243	7.9700+-	.8225	.65+-	.09				-2.9
C30	4IP-TO	*	12.7577+-	1.2758	12.4470+-	1.2818	.98+-	.14				-.2
C31	N-C11	*	34.8538+-	3.4854	34.6772+-	3.5932	.99+-	.14				.0
C32	N-C12	*	4.3453+-	2.1727	5.3815+-	.5153	1.24+-	.63				.5

SOURCE CONTRIBUTION ESTIMATES - SITE: FA-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .91 PERCENT MASS 100.4  
 CHI SQUARE 1.71 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 6 EVAP99 108.7035 9.9069 10.9724  
 YES 55 FA-HSPT 113.2421 8.8558 12.7873  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 221.1+- 8.0

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 44.2182 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 6.9573 11.3212  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 6 1.0000 55  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: FA-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .91 PERCENT MASS 100.4  
 CHI SQUARE 1.71 DF 29

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U
C1	TOT	221.0911+-	7.9847	221.9455+-	9.9641	1.00+-	.06	.1
C2	ETHYL *	2.3780+-	1.1890	2.7228+-	1.3708	1.15+-	.81	.2
C3	ACETYL *	1.5132+-	.7566	2.3185+-	1.1672	1.53+-	1.09	.6
C4	PROPYL *	1.6890+-	.8445	1.5489+-	.7799	.92+-	.65	-.1
C5	N-C3 *	3.6988+-	1.8494	4.3188+-	1.3852	1.17+-	.69	.3
C6	1BUTEN *	6.0245+-	.6024	2.4661+-	.4870	.41+-	.09	-4.6
C7	N-C4 *	32.9589+-	3.2959	31.5189+-	3.7015	.96+-	.15	-.3
C8	2M-C4 *	13.1916+-	1.3192	16.0989+-	2.9343	1.22+-	.25	.9
C9	N-C5 *	11.9730+-	1.1973	11.5191+-	1.6345	.96+-	.17	-.2
C10	CYC-C5 *	3.1548+-	1.5774	2.0856+-	.2229	.66+-	.34	-.7
C11	2M-C5 *	7.9131+-	.7913	7.9848+-	1.5205	1.01+-	.22	.0
C12	3M-C5 *	5.5161+-	.5516	5.5693+-	1.2510	1.01+-	.25	.0
C13	N-C6 *	5.8558+-	.5856	5.8503+-	1.0546	1.00+-	.21	.0
C14	MCYC-C *	4.1478+-	2.0739	3.8588+-	.7900	.93+-	.50	-.1
C15	BENZEN *	9.3289+-	.9329	11.1021+-	2.0613	1.19+-	.25	.8
C16	2M-C6 *	2.7462+-	1.3731	3.0946+-	.8391	1.13+-	.64	.2
C17	3M-C6 *	4.0029+-	2.0014	3.9577+-	1.2135	.99+-	.58	.0
C18	224TMC *	4.6443+-	2.3221	6.4317+-	.6727	1.38+-	.71	.7
C19	N-C7 *	2.4326+-	1.2163	3.3032+-	.7838	1.36+-	.75	.6
C20	TOLUEN *	26.8156+-	2.6816	25.0555+-	2.3411	.93+-	.13	-.5
C21	DMCYCC *	5.9128+-	.5913	4.2946+-	2.1229	.73+-	.37	-.7
C22	N-C8 *	3.6180+-	1.8090	4.4399+-	1.9213	1.23+-	.81	.3
C23	E-BENZ *	6.7158+-	.6716	6.1360+-	1.3056	.91+-	.21	-.4
C24	M&P-XY *	16.0756+-	1.6076	18.3825+-	1.8013	1.14+-	.16	1.0
C25	O-XYL *	5.4068+-	.5407	7.4108+-	1.7751	1.37+-	.36	1.1
C26	3E-TOL *	3.5087+-	1.7544	4.1652+-	1.3479	1.19+-	.71	.3
C27	4E-TOL *	1.4539+-	.7269	2.6738+-	1.1056	1.84+-	1.19	.9
C28	N-C10 *	5.3973+-	.5397	6.6506+-	.7660	1.23+-	.19	1.3
C29	3IP-TO *	1.6201+-	.8101	.0000+-	.0157	.00+-	.01	-2.0
C30	4IP-TO *	11.5762+-	1.1576	6.3482+-	.7366	.55+-	.08	-3.8
C31	N-C11 *	7.9511+-	.7951	8.9027+-	1.0128	1.12+-	.17	.7
C32	N-C12 *	1.8696+-	.9348	1.7359+-	.8168	.93+-	.64	-.1

SOURCE CONTRIBUTION ESTIMATES - SITE: HD2-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .98 PERCENT MASS 94.3  
 CHI SQUARE .94 DF 27  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 6	EVAP99	425.6678	63.9517	6.6561
YES 7	WHLGAS99	114.4411	52.2754	2.1892
YES 59	HD2-AMB	44.3591	23.0013	1.9285
YES 60	HD2-HSPT	143.1556	11.6023	12.3386

MEASURED CONCENTRATION FOR SIZE: VOC  
 771.8+- 23.5

ELIGIBLE SPACE DIM. = 4 FOR MAX. UNC. = 154.3696 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

9.2946 15.0695 27.8956 79.9661

NUMBER ESTIMABLE SOURCES = 4 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE  
 1.0000 6 1.0000 7 1.0000 59 1.0000 60

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: HD2-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .98 PERCENT MASS 94.3  
 CHI SQUARE .94 DF 27

SPECIES	I	MEAS	----	----	----	----	----	----	----	----	----	R/U
			----	----	----	----	----	----	----	----	----	
C1	TOT	*	771.8482+-	23.4807	727.6235+-	24.0557	.94+-	.04	-1.3			
C2	ETHYL	*	2.7603+-	1.3802	2.0506+-	.9189	.74+-	.50	-.4			
C3	ACETYL	*	1.3840+-	.6920	1.3962+-	.6954	1.01+-	.71	.0			
C4	PROPYL	*	2.2956+-	1.1478	1.9344+-	.7198	.84+-	.53	-.3			
C5	N-C3	*	15.8346+-	1.5835	18.9546+-	2.3405	1.20+-	.19	1.1			
C6	1BUTEN	*	11.3368+-	1.1337	8.3969+-	1.0998	.74+-	.12	-1.9			
C7	N-C4	*	167.8243+-	16.7824	130.1112+-	14.7622	.78+-	.12	-1.7			
C8	2M-C4	*	69.4930+-	6.9493	63.9741+-	6.7791	.92+-	.13	-.6			
C9	N-C5	*	58.2017+-	5.8202	53.5180+-	5.9147	.92+-	.14	-.6			
C10	CYC-C5	*	9.0361+-	.9036	8.6930+-	.9215	.96+-	.14	-.3			
C11	2M-C5	*	45.8042+-	4.5804	44.7023+-	4.5022	.98+-	.14	-.2			
C12	3M-C5	*	21.9462+-	2.1946	21.9703+-	2.3963	1.00+-	.15	.0			
C13	N-C6	*	25.0374+-	2.5037	24.9286+-	2.7318	1.00+-	.15	.0			
C14	MCYC-C	*	15.5063+-	1.5506	14.7295+-	1.4987	.95+-	.14	-.4			
C15	BENZEN	*	30.8232+-	3.0823	37.2475+-	4.5601	1.21+-	.19	1.2			
C16	2M-C6	*	10.5261+-	1.0526	10.7473+-	1.1629	1.02+-	.15	.1			
C17	3M-C6	*	12.3293+-	1.2329	11.8912+-	1.3952	.96+-	.15	-.2			
C18	224TMC	*	7.0385+-	.7038	7.1071+-	1.0940	1.01+-	.19	.1			
C19	N-C7	*	10.3493+-	1.0349	12.8453+-	1.5954	1.24+-	.20	1.3			
C20	TOLUEN	*	80.6278+-	8.0628	60.7028+-	5.5213	.75+-	.10	-2.0			
C21	DMCYCC	*	3.2174+-	1.6087	4.2112+-	1.7658	1.31+-	.85	.4			
C22	N-C8	*	4.1392+-	2.0696	5.3034+-	.6014	1.28+-	.66	.5			
C23	E-BENZ	*	20.7668+-	2.0767	23.1835+-	2.2672	1.12+-	.16	.8			
C24	M&P-XY	*	60.8509+-	6.0851	68.7328+-	6.6365	1.13+-	.16	.9			
C25	O-XYL	*	25.1409+-	2.5141	27.5545+-	2.5814	1.10+-	.15	.7			
C26	3E-TOL	*	14.9659+-	1.4966	18.0018+-	1.4029	1.20+-	.15	1.5			
C27	4E-TOL	*	6.5788+-	.6579	6.0545+-	1.3898	.92+-	.23	-.3			
C28	N-C10	*	9.3442+-	.9344	7.9810+-	.7746	.85+-	.12	-1.1			
C29	3IP-TO	*	3.1467+-	1.5734	5.2229+-	.4873	1.66+-	.84	1.3			
C30	4IP-TO	*	8.5259+-	.8526	7.3791+-	.7886	.87+-	.13	-1.0			
C31	N-C11	*	13.6046+-	1.3605	13.0344+-	1.2989	.96+-	.14	-.3			
C32	N-C12	*	3.4119+-	1.7059	5.0632+-	.4925	1.48+-	.76	.9			



SOURCE CONTRIBUTION ESTIMATES - SITE: HD1-HSH DATE: WINT98 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 97.2  
 CHI SQUARE 1.35 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 3 EVAP97 41.0929 8.9206 4.6065  
 YES 4 WHLGAS97 20.8475 6.2973 3.3105  
 YES 64 HD1AHSB 35.2767 3.9405 8.9523  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 100.0+- 4.5

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 20.0000 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 2.0123 4.1795 10.6415  
 -----

NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 3 1.0000 4 1.0000 64  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: HD1-HSH DATE: WINT98 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 97.2  
 CHI SQUARE 1.35 DF 28

SPECIES	I	MEAS	-----	-----	-----	-----	-----	RATIO C/M	-----	RATIO R/U
C1	TOT	100.0000+-	4.5284	97.2171+-	3.7672	.97+-	.06			-.5
C2	ETHYL *	.8014+-	.1202	.7874+-	.0758	.98+-	.18			-.1
C3	ACETYL *	.4303+-	.0645	.4185+-	.1951	.97+-	.48			-.1
C4	PROPYL *	.5839+-	.0876	.4740+-	.2130	.81+-	.38			-.5
C5	N-C3 *	1.4678+-	.2202	1.8969+-	.1650	1.29+-	.22			1.6
C6	1BUTEN *	2.4147+-	.3622	2.4206+-	.2130	1.00+-	.17			.0
C7	N-C4 *	13.9697+-	2.0955	11.5104+-	1.0225	.82+-	.14			-1.1
C8	2M-C4 *	7.3074+-	1.0961	8.1640+-	.7361	1.12+-	.20			.6
C9	N-C5 *	5.1974+-	.7796	4.9325+-	.4520	.95+-	.17			-.3
C10	CYC-C5 *	.8839+-	.1326	.8785+-	.1173	.99+-	.20			.0
C11	2M-C5 *	4.0240+-	.6036	4.0416+-	.3562	1.00+-	.17			.0
C12	3M-C5 *	2.3891+-	.3584	2.5509+-	.2218	1.07+-	.19			.4
C13	N-C6 *	2.7685+-	.4153	2.4899+-	.3143	.90+-	.18			-.5
C14	MCYC-C *	2.6417+-	.3963	2.9295+-	.2633	1.11+-	.19			.6
C15	BENZEN *	5.3211+-	.7982	5.2800+-	.5477	.99+-	.18			.0
C16	2M-C6 *	1.4408+-	.2161	1.2664+-	.1787	.88+-	.18			-.6
C17	3M-C6 *	1.6176+-	.2426	1.3891+-	.2127	.86+-	.18			-.7
C18	224TMC *	1.0002+-	.1500	1.0789+-	.1670	1.08+-	.23			.4
C19	N-C7 *	1.4019+-	.2103	1.4397+-	.1866	1.03+-	.20			.1
C20	TOLUEN *	20.8116+-	3.1217	23.3509+-	1.8656	1.12+-	.19			.7
C21	DMCYCC *	.3111+-	.0467	.3505+-	.1539	1.13+-	.52			.2
C22	N-C8 *	.4939+-	.0741	.6746+-	.0925	1.37+-	.28			1.5
C23	E-BENZ *	3.2712+-	.4907	2.7317+-	.2265	.84+-	.14			-1.0
C24	M&P-XY *	9.2503+-	1.3875	8.3107+-	.6770	.90+-	.15			-.6
C25	O-XYL *	3.9073+-	.5861	3.4009+-	.2691	.87+-	.15			-.8
C26	3E-TOL *	1.8729+-	.2809	1.6008+-	.1225	.85+-	.14			-.9
C27	4E-TOL *	1.7782+-	.2667	.7282+-	.2047	.41+-	.13			-3.1
C28	N-C10 *	.7775+-	.1166	.2642+-	.1152	.34+-	.16			-3.1
C29	3IP-TO *	.4717+-	.0707	.2476+-	.1094	.52+-	.24			-1.7
C30	4IP-TO *	.8273+-	.1241	1.0939+-	.0990	1.32+-	.23			1.7
C31	N-C11 *	.4255+-	.0638	.3337+-	.1484	.78+-	.37			-.6
C32	N-C12 *	.1399+-	.0210	.1807+-	.0578	1.29+-	.46			.7

SOURCE CONTRIBUTION ESTIMATES - SITE: HD1-HSH DATE: WINT98 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .94 PERCENT MASS 97.6  
 CHI SQUARE 2.05 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 3	EVAP97	36.4248	8.4972	4.2867
YES 4	WHLGAS97	21.8582	5.8606	3.7297
YES 70	HD1BHSB	39.3097	3.2271	12.1810

MEASURED CONCENTRATION FOR SIZE: VOC  
 100.0+- 4.5

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 20.0000 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

1.8567 3.4682 10.0741

NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

1.0000 3 1.0000 4 1.0000 70

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: HD1-HSH DATE: WINT98 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .94 PERCENT MASS 97.6  
 CHI SQUARE 2.05 DF 28

SPECIES	I	MEAS	MEAS	CALC	CALC	RATIO C/M	RATIO R/U
C1	TOT	100.0000+-	4.5284	97.5927+-	3.6215	.98+- .06	-.4
C2	ETHYL *	.8014+-	.1202	.8533+-	.1148	1.06+- .21	.3
C3	ACETYL *	.4303+-	.0645	.4596+-	.0651	1.07+- .22	.3
C4	PROPYL *	.5839+-	.0876	.5168+-	.0713	.89+- .18	-.6
C5	N-C3 *	1.4678+-	.2202	1.9354+-	.2081	1.32+- .24	1.5
C6	1BUTEN *	2.4147+-	.3622	2.3917+-	.2219	.99+- .17	-.1
C7	N-C4 *	13.9697+-	2.0955	11.3125+-	1.0257	.81+- .14	-1.1
C8	2M-C4 *	7.3074+-	1.0961	8.0271+-	.7223	1.10+- .19	.5
C9	N-C5 *	5.1974+-	.7796	4.8159+-	.4375	.93+- .16	-.4
C10	CYC-C5 *	.8839+-	.1326	.8590+-	.0777	.97+- .17	-.2
C11	2M-C5 *	4.0240+-	.6036	4.0078+-	.3571	1.00+- .17	.0
C12	3M-C5 *	2.3891+-	.3584	2.5389+-	.2247	1.06+- .19	.4
C13	N-C6 *	2.7685+-	.4153	2.4404+-	.2207	.88+- .15	-.7
C14	MCYC-C *	2.6417+-	.3963	2.8863+-	.2595	1.09+- .19	.5
C15	BENZEN *	5.3211+-	.7982	5.0370+-	.5092	.95+- .17	-.3
C16	2M-C6 *	1.4408+-	.2161	1.2668+-	.1114	.88+- .15	-.7
C17	3M-C6 *	1.6176+-	.2426	1.3977+-	.1219	.86+- .15	-.8
C18	224TMC *	1.0002+-	.1500	1.0942+-	.0967	1.09+- .19	.5
C19	N-C7 *	1.4019+-	.2103	1.4219+-	.1269	1.01+- .18	.1
C20	TOLUEN *	20.8116+-	3.1217	24.0367+-	2.4065	1.15+- .21	.8
C21	DMCYCC *	.3111+-	.0467	.3834+-	.0514	1.23+- .25	1.0
C22	N-C8 *	.4939+-	.0741	.6756+-	.0599	1.37+- .24	1.9
C23	E-BENZ *	3.2712+-	.4907	2.7305+-	.2456	.83+- .15	-1.0
C24	M&P-XY *	9.2503+-	1.3875	8.3456+-	.7490	.90+- .16	-.6
C25	O-XYL *	3.9073+-	.5861	3.4450+-	.3100	.88+- .15	-.7
C26	3E-TOL *	1.8729+-	.2809	1.6453+-	.1501	.88+- .15	-.7
C27	4E-TOL *	1.7782+-	.2667	.7642+-	.0752	.43+- .08	-3.7
C28	N-C10 *	.7775+-	.1166	.2905+-	.0385	.37+- .07	-4.0
C29	3IP-TO *	.4717+-	.0707	.2691+-	.0367	.57+- .12	-2.5
C30	4IP-TO *	.8273+-	.1241	1.1914+-	.1500	1.44+- .28	1.9
C31	N-C11 *	.4255+-	.0638	.3655+-	.0496	.86+- .17	-.7
C32	N-C12 *	.1399+-	.0210	.1878+-	.0206	1.34+- .25	1.6

Scenario 1 Cold Start Model Output

SOURCE CONTRIBUTION ESTIMATES - SITE: JE-CSH DATE: WINT99 CMB8 (97350)
SAMPLE DURATION 1 START HOUR 1 SIZE: VOC
R SQUARE .97 PERCENT MASS 100.8
CHI SQUARE .72 DF 29
B and L: No SRC ELIM: Yes
WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

Table with 5 columns: EST CODE, NAME, SCE(ng/L), and two unlabeled columns. Rows include YES 11, YES 12, JE-CSPT, and JE-CSG.

MEASURED CONCENTRATION FOR SIZE: VOC
186.1+- 8.1

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 37.2299 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

Table with 2 columns: 4.5228, 7.5698

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95
PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

Table with 2 columns: 1.0000 11, 1.0000 12

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES
COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: JE-CSH DATE: WINT99 CMB 8.0
SAMPLE DURATION 1 START HOUR 1 SIZE: VOC
R SQUARE .97 PERCENT MASS 100.8
CHI SQUARE .72 DF 29

Large table with columns: SPECIES, I, MEAS, CALC, RATIO C/M, RATIO R/U. Rows include C1 to C32 with various chemical species like TOT, ETHYL, ACETYL, etc.

SOURCE CONTRIBUTION ESTIMATES - SITE: SV-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .91 PERCENT MASS 93.5  
 CHI SQUARE 3.50 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 16	SV-CSAMB	37.5203	11.8306	3.1715
YES 17	SV-CSPT	94.4330	11.5352	8.1865
YES 18	SV-CSG	163.9239	13.7669	11.9071

MEASURED CONCENTRATION FOR SIZE: VOC  
 316.3+- 8.8

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 63.2652 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

5.3823	13.7908	15.6011
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NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95

PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE
1.0000 16	1.0000 17	1.0000 18		

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES

COEFF. SOURCE	COEFF. SOURCE	COEFF. SOURCE	COEFF. SOURCE	SCE	STD ERR
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SPECIES CONCENTRATIONS - SITE: SV-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .91 PERCENT MASS 93.5  
 CHI SQUARE 3.50 DF 28

SPECIES	I	MEAS	CALC	RATIO C/M	RATIO R/U
C1	TOT	316.3260+-	8.8272 295.8773+-	9.7012 .94+-	.04 -1.6
C2	ETHYL *	20.0757+-	2.0076 19.5495+-	2.2096 .97+-	.15 -2
C3	ACETYL *	14.6905+-	1.4691 12.4613+-	1.5158 .85+-	.13 -1.1
C4	PROPYL *	9.3357+-	.9336 10.6016+-	1.1064 1.14+-	.16 .9
C5	N-C3 *	7.7216+-	.7722 7.5285+-	1.6455 .97+-	.23 -1
C6	1BUTEN *	6.9613+-	.6961 6.6972+-	1.1324 .96+-	.19 -2
C7	N-C4 *	17.6837+-	1.7684 18.8686+-	1.2841 1.07+-	.13 .5
C8	2M-C4 *	10.6542+-	1.0654 13.5399+-	1.3871 1.27+-	.18 1.6
C9	N-C5 *	8.6638+-	.8664 9.3544+-	1.0831 1.08+-	.17 .5
C10	CYC-C5 *	1.8464+-	.9232 1.7534+-	.2697 .95+-	.50 -1
C11	2M-C5 *	10.9244+-	1.0924 10.5402+-	1.7530 .96+-	.19 -2
C12	3M-C5 *	6.4839+-	.6484 7.1341+-	1.1933 1.10+-	.21 .5
C13	N-C6 *	6.4056+-	.6406 6.1810+-	.9955 .96+-	.18 -2
C14	MCYC-C *	8.3506+-	.8351 7.1768+-	1.0967 .86+-	.16 -9
C15	BENZEN *	13.8797+-	1.3880 15.0105+-	1.4233 1.08+-	.15 .6
C16	2M-C6 *	4.8244+-	2.4122 4.6928+-	.6444 .97+-	.50 -1
C17	3M-C6 *	5.7843+-	.5784 6.3984+-	1.0976 1.11+-	.22 .5
C18	224TMC *	3.6651+-	1.8325 4.1070+-	.6430 1.12+-	.59 .2
C19	N-C7 *	4.1728+-	2.0864 4.1162+-	.6046 .99+-	.51 .0
C20	TOLUEN *	40.1918+-	4.0192 40.6197+-	2.8611 1.01+-	.12 .1
C21	DMCYCC *	3.2761+-	1.6380 2.8341+-	1.1558 .87+-	.56 -2
C22	N-C8 *	2.4880+-	1.2440 4.1796+-	1.1383 1.68+-	.96 1.0
C23	E-BENZ *	11.3109+-	1.1311 9.8192+-	.8036 .87+-	.11 -1.1
C24	M&P-XY *	38.4439+-	3.8444 32.7123+-	2.6547 .85+-	.11 -1.2
C25	O-XYL *	14.1550+-	1.4155 13.4119+-	1.1212 .95+-	.12 -.4
C26	3E-TOL *	7.2998+-	.7300 8.9605+-	.7579 1.23+-	.16 1.6
C27	4E-TOL *	3.2685+-	1.6342 2.3731+-	.2849 .73+-	.37 -.5
C28	N-C10 *	7.1179+-	.7118 1.4915+-	.5066 .21+-	.07 -6.4
C29	3IP-TO *	5.0871+-	.5087 6.7177+-	.7139 1.32+-	.19 1.9
C30	4IP-TO *	8.3783+-	.8378 3.5099+-	.8071 .42+-	.11 -4.2
C31	N-C11 *	11.1442+-	1.1144 3.3587+-	1.4132 .30+-	.13 -4.3
C32	N-C12 *	2.0409+-	1.0205 .1780+-	.0210 .09+-	.04 -1.8

SOURCE CONTRIBUTION ESTIMATES - SITE: MH-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .97 PERCENT MASS 98.4  
 CHI SQUARE 1.44 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 22 MH-CSPT 199.3042 30.5601 6.5217  
 YES 23 MH-CSG 1007.5090 47.5447 21.1908  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 1226.0+- 29.9

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 245.1955 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 19.8265 52.9276  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

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 1.0000 22 1.0000 23  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: MH-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .97 PERCENT MASS 98.4  
 CHI SQUARE 1.44 DF 29

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U
C1	TOT	*****+-	29.8648	*****+-	34.4165	.98+-	.04	-.4
C2	ETHYL *	99.9553+-	9.9955	85.5678+-	8.2481	.86+-	.12	-1.1
C3	ACETYL *	84.9998+-	8.5000	73.4096+-	7.4329	.86+-	.12	-1.0
C4	PROPYL *	47.5694+-	4.7569	44.7920+-	4.5501	.94+-	.13	-.4
C5	N-C3 *	6.6218+-	.6622	6.5892+-	.5423	1.00+-	.13	.0
C6	1BUTEN *	29.4494+-	2.9449	23.3923+-	2.4121	.79+-	.11	-1.6
C7	N-C4 *	69.4943+-	6.9494	64.7477+-	5.1735	.93+-	.12	-.5
C8	2M-C4 *	70.4955+-	7.0496	67.0522+-	5.7591	.95+-	.13	-.4
C9	N-C5 *	45.7927+-	4.5793	42.3584+-	3.5588	.93+-	.12	-.6
C10	CYC-C5 *	8.6891+-	.8689	8.0990+-	1.0943	.93+-	.16	-.4
C11	2M-C5 *	58.1674+-	5.8167	52.6686+-	4.5395	.91+-	.12	-.7
C12	3M-C5 *	38.1333+-	3.8133	35.2158+-	2.9898	.92+-	.12	-.6
C13	N-C6 *	36.2399+-	3.6240	34.3022+-	2.7871	.95+-	.12	-.4
C14	MCYC-C *	42.3067+-	4.2307	38.0826+-	3.3520	.90+-	.12	-.8
C15	BENZEN *	72.7910+-	7.2791	65.9195+-	6.0396	.91+-	.12	-.7
C16	2M-C6 *	28.8840+-	2.8884	25.8012+-	3.0232	.89+-	.14	-.7
C17	3M-C6 *	32.4271+-	3.2427	28.7366+-	2.4967	.89+-	.12	-.9
C18	224TMC *	22.9184+-	2.2918	19.8087+-	2.3545	.86+-	.13	-.9
C19	N-C7 *	25.6055+-	2.5605	23.6388+-	1.9856	.92+-	.12	-.6
C20	TOLUEN *	157.6014+-	15.7601	161.2046+-	14.5757	1.02+-	.14	.2
C21	DMCYCC *	4.5339+-	2.2669	3.3204+-	1.2439	.73+-	.46	-.5
C22	N-C8 *	14.4264+-	1.4426	14.3013+-	2.4138	.99+-	.19	.0
C23	E-BENZ *	33.5424+-	3.3542	38.0517+-	3.3801	1.13+-	.15	.9
C24	M&P-XY *	101.8643+-	10.1864	127.9006+-	11.4090	1.26+-	.17	1.7
C25	O-XYL *	42.6153+-	4.2615	53.4650+-	4.7075	1.25+-	.17	1.7
C26	3E-TOL *	22.4463+-	2.2446	32.5288+-	2.7690	1.45+-	.19	2.8
C27	4E-TOL *	9.7343+-	.9734	14.0234+-	1.9314	1.44+-	.25	2.0
C28	N-C10 *	4.0696+-	2.0348	4.4127+-	1.5273	1.08+-	.66	.1
C29	3IP-TO *	3.2318+-	1.6159	8.7925+-	1.0578	2.72+-	1.40	2.9
C30	4IP-TO *	6.6218+-	.6622	3.3927+-	1.5319	.51+-	.24	-1.9
C31	N-C11 *	3.3304+-	1.6652	3.9751+-	1.2095	1.19+-	.70	.3
C32	N-C12 *	1.4188+-	.7094	1.2614+-	.5974	.89+-	.61	-.2

SOURCE CONTRIBUTION ESTIMATES - SITE: SR-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .93 PERCENT MASS 99.0  
 CHI SQUARE 2.35 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 27 SR-CSPT 218.4525 28.2882 7.7224  
 YES 28 SR-CSG 350.5879 30.9508 11.3273  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 574.6+- 14.6

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 114.9245 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 13.3458 39.7500  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

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 1.0000 27 1.0000 28  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: SR-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .93 PERCENT MASS 99.0  
 CHI SQUARE 2.35 DF 29

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U	
C1	TOT		574.6224+-	14.5889	569.0403+-	19.1082	.99+-	.04	-.2
C2	ETHYL	*	50.4144+-	5.0414	39.8671+-	5.0597	.79+-	.13	-1.5
C3	ACETYL	*	37.2682+-	3.7268	27.4795+-	3.4666	.74+-	.12	-1.9
C4	PROPYL	*	23.8513+-	2.3851	16.2150+-	1.9177	.68+-	.11	-2.5
C5	N-C3	*	13.4268+-	1.3427	10.1749+-	1.0996	.76+-	.11	-1.9
C6	1BUTEN	*	17.3875+-	1.7388	13.8843+-	3.0662	.80+-	.19	-1.0
C7	N-C4	*	32.1304+-	3.2130	35.9542+-	2.8921	1.12+-	.14	.9
C8	2M-C4	*	23.0443+-	2.3044	23.7613+-	1.8695	1.03+-	.13	.2
C9	N-C5	*	18.9668+-	1.8967	18.7369+-	1.4360	.99+-	.12	-.1
C10	CYC-C5	*	3.7720+-	1.8860	3.8215+-	.9626	1.01+-	.57	.0
C11	2M-C5	*	24.0922+-	2.4092	20.4509+-	4.0006	.85+-	.19	-.8
C12	3M-C5	*	15.4804+-	1.5480	13.2682+-	2.5486	.86+-	.19	-.7
C13	N-C6	*	13.9954+-	1.3995	12.6459+-	2.5571	.90+-	.20	-.5
C14	MCYC-C	*	17.0746+-	1.7075	13.9960+-	2.3415	.82+-	.16	-1.1
C15	BENZEN	*	34.5764+-	3.4576	30.7052+-	2.4063	.89+-	.11	-.9
C16	2M-C6	*	12.1951+-	1.2195	9.8172+-	1.6601	.81+-	.16	-1.2
C17	3M-C6	*	3.0072+-	1.5036	11.6921+-	2.2395	3.89+-	2.08	3.2
C18	224TMC	*	10.9883+-	1.0988	7.6406+-	1.2914	.70+-	.14	-2.0
C19	N-C7	*	10.5686+-	1.0569	8.7769+-	1.5600	.83+-	.17	-1.0
C20	TOLUEN	*	75.1100+-	7.5110	82.7261+-	6.3618	1.10+-	.14	.8
C21	DMCYCC	*	12.1678+-	1.2168	4.3960+-	2.0500	.36+-	.17	-3.3
C22	N-C8	*	6.3521+-	.6352	6.0027+-	1.3203	.95+-	.23	-.2
C23	E-BENZ	*	14.4399+-	1.4440	18.9067+-	3.4568	1.31+-	.27	1.2
C24	M&P-XY	*	48.0230+-	4.8023	63.9755+-	5.0024	1.33+-	.17	2.3
C25	O-XYL	*	20.1414+-	2.0141	26.3676+-	2.0705	1.31+-	.17	2.2
C26	3E-TOL	*	11.8549+-	1.1855	16.4564+-	2.9322	1.39+-	.28	1.5
C27	4E-TOL	*	4.7281+-	2.3640	7.5296+-	1.4906	1.59+-	.86	1.0
C28	N-C10	*	4.4797+-	2.2399	1.0680+-	.0592	.24+-	.12	-1.5
C29	3IP-TO	*	5.0484+-	.5048	6.3444+-	2.9467	1.26+-	.60	.4
C30	4IP-TO	*	4.0675+-	2.0338	6.4081+-	1.6499	1.58+-	.89	.9
C31	N-C11	*	4.2215+-	2.1107	6.4352+-	2.8675	1.52+-	1.02	.6
C32	N-C12	*	1.7482+-	.8741	3.5363+-	1.0876	2.02+-	1.19	1.3

SOURCE CONTRIBUTION ESTIMATES - SITE: JS-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .99 PERCENT MASS 100.5  
 CHI SQUARE .50 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L)  
 -----  
 YES 32 JS-CSPT 731.7156 36.0711 20.2854  
 YES 33 JS-CSG 162.2879 13.9993 11.5926  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 889.5+- 32.9

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 177.8945 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 11.0343 37.0857  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 32 1.0000 33  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: JS-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .99 PERCENT MASS 100.5  
 CHI SQUARE .50 DF 29

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U
C1	TOT		889.4724+-	32.9098	894.0035+-	30.0894	1.01+-	.05 .1
C2	ETHYL *		19.9106+-	1.9911	20.5788+-	2.7837	1.03+-	.17 .2
C3	ACETYL *		12.7376+-	1.2738	12.8041+-	1.7138	1.01+-	.17 .0
C4	PROPYL *		8.7583+-	.8758	7.5333+-	.9667	.86+-	.14 -.9
C5	N-C3 *		80.6222+-	8.0622	76.7327+-	8.3019	.95+-	.14 -.3
C6	1BUTEN *		8.6671+-	.8667	7.6777+-	1.9293	.89+-	.24 -.5
C7	N-C4 *		285.4078+-	28.5408	301.0783+-	32.1862	1.05+-	.15 .4
C8	2M-C4 *		89.0532+-	8.9053	69.6320+-	6.8672	.78+-	.11 -1.7
C9	N-C5 *		12.6604+-	1.2660	10.3705+-	.7908	.82+-	.10 -1.5
C10	CYC-C5 *		2.1931+-	1.0965	1.8480+-	.5068	.84+-	.48 -.3
C11	2M-C5 *		16.5322+-	1.6532	15.4005+-	1.1922	.93+-	.12 -.6
C12	3M-C5 *		11.1968+-	1.1197	10.3878+-	.8084	.93+-	.12 -.6
C13	N-C6 *		12.7189+-	1.2719	11.8818+-	.9755	.93+-	.12 -.5
C14	MCYC-C *		7.3391+-	.7339	7.3971+-	1.7030	1.01+-	.25 .0
C15	BENZEN *		13.5302+-	1.3530	14.3894+-	1.1058	1.06+-	.13 .5
C16	2M-C6 *		7.0164+-	.7016	6.7622+-	1.8144	.96+-	.28 -.1
C17	3M-C6 *		8.3023+-	.8302	8.1786+-	2.3589	.99+-	.30 .0
C18	224TMC *		6.6190+-	.6619	6.4098+-	1.8269	.97+-	.29 -.1
C19	N-C7 *		7.9680+-	.7968	7.7110+-	.6139	.97+-	.12 -.3
C20	TOLUEN *		44.4974+-	4.4497	49.2750+-	3.7522	1.11+-	.14 .8
C21	DMCYCC *		6.2870+-	.6287	5.8245+-	.6247	.93+-	.14 -.5
C22	N-C8 *		5.8848+-	.5885	5.9284+-	2.1996	1.01+-	.39 .0
C23	E-BENZ *		12.4453+-	1.2445	13.3504+-	1.0307	1.07+-	.14 .6
C24	M&P-XY *		40.1510+-	4.0151	46.6180+-	3.6269	1.16+-	.15 1.2
C25	O-XYL *		17.8275+-	1.7827	20.3672+-	1.5962	1.14+-	.15 1.1
C26	3E-TOL *		16.4925+-	1.6492	18.8516+-	1.6250	1.14+-	.15 1.0
C27	4E-TOL *		6.8013+-	.6801	4.8961+-	1.4706	.72+-	.23 -1.2
C28	N-C10 *		30.3266+-	3.0327	30.6109+-	3.3113	1.01+-	.15 .1
C29	3IP-TO *		6.3968+-	.6397	6.6580+-	.7127	1.04+-	.15 .3
C30	4IP-TO *		64.7517+-	6.4752	66.6224+-	7.1373	1.03+-	.15 .2
C31	N-C11 *		23.1769+-	2.3177	24.0901+-	2.5950	1.04+-	.15 .3
C32	N-C12 *		3.2008+-	1.6004	4.1375+-	1.7291	1.29+-	.84 .4

SOURCE CONTRIBUTION ESTIMATES - SITE: PB-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .97 PERCENT MASS 99.1  
 CHI SQUARE 1.18 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 37	PB-CSPT	258.4123	13.3247	19.3935
YES 38	PB-CSG	136.2814	11.0165	12.3706

MEASURED CONCENTRATION FOR SIZE: VOC  
 398.2+- 9.1

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 79.6488 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

7.8613 15.3984

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

1.0000 37 1.0000 38

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: PB-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .97 PERCENT MASS 99.1  
 CHI SQUARE 1.18 DF 29

SPECIES	I	MEAS	CALC	RATIO C/M	RATIO R/U
C1	TOT	398.2439+-	9.0829 394.6937+-	11.5259 .99+-	.04 -.2
C2	ETHYL *	17.1696+-	1.7170 17.0752+-	2.2263 .99+-	.16 .0
C3	ACETYL *	13.8358+-	1.3836 12.6361+-	1.7812 .91+-	.16 -.5
C4	PROPYL *	7.0362+-	.7036 6.3608+-	.7788 .90+-	.14 -.6
C5	N-C3 *	11.2218+-	1.1222 9.4231+-	.9620 .84+-	.12 -1.2
C6	1BUTEN *	5.7113+-	.5711 5.5249+-	1.1331 .97+-	.22 -.1
C7	N-C4 *	19.0640+-	1.9064 17.8450+-	1.3487 .94+-	.12 -.5
C8	2M-C4 *	14.1283+-	1.4128 11.6880+-	.8878 .83+-	.10 -1.5
C9	N-C5 *	9.3553+-	.9355 7.9926+-	1.7791 .85+-	.21 -.7
C10	CYC-C5 *	1.3630+-	.6815 1.5607+-	.3593 1.15+-	.63 .3
C11	2M-C5 *	11.0438+-	1.1044 9.4952+-	1.9881 .86+-	.20 -.7
C12	3M-C5 *	7.2167+-	.7217 7.4077+-	1.8779 1.03+-	.28 .1
C13	N-C6 *	9.2180+-	.9218 8.5173+-	.6433 .92+-	.12 -.6
C14	MCYC-C *	7.7558+-	.7756 7.0677+-	1.4867 .91+-	.21 -.4
C15	BENZEN *	10.0953+-	1.0095 11.2059+-	1.8725 1.11+-	.22 .5
C16	2M-C6 *	5.6452+-	.5645 5.3552+-	1.2998 .95+-	.25 -.2
C17	3M-C6 *	7.1226+-	.7123 7.0778+-	.5270 .99+-	.12 -.1
C18	224TMC *	5.0909+-	.5091 4.6129+-	1.2422 .91+-	.26 -.4
C19	N-C7 *	7.0718+-	.7072 6.1071+-	1.8676 .86+-	.28 -.5
C20	TOLUEN *	41.3346+-	4.1335 40.6689+-	3.0255 .98+-	.12 -.1
C21	DMCYCC *	5.7647+-	.5765 4.3940+-	.4508 .76+-	.11 -1.9
C22	N-C8 *	2.4819+-	1.2409 2.7138+-	.7329 1.09+-	.62 .2
C23	E-BENZ *	7.9287+-	.7929 10.1116+-	.7613 1.28+-	.16 2.0
C24	M&P-XY *	27.2318+-	2.7232 34.0952+-	2.5703 1.25+-	.16 1.8
C25	O-XYL *	12.2491+-	1.2249 14.6774+-	1.1152 1.20+-	.15 1.5
C26	3E-TOL *	17.6934+-	1.7693 14.7713+-	1.2575 .83+-	.11 -1.3
C27	4E-TOL *	1.1570+-	.5785 2.3328+-	.5099 2.02+-	1.10 1.5
C28	N-C10 *	32.9863+-	3.2986 28.4859+-	2.9775 .86+-	.12 -1.0
C29	3IP-TO *	8.2237+-	.8224 7.2376+-	.7467 .88+-	.13 -.9
C30	4IP-TO *	14.1766+-	1.4177 20.3575+-	2.0467 1.44+-	.20 2.5
C31	N-C11 *	33.9857+-	3.3986 29.6216+-	3.0956 .87+-	.13 -.9
C32	N-C12 *	23.8853+-	2.3885 28.2723+-	2.9435 1.18+-	.17 1.2



SOURCE CONTRIBUTION ESTIMATES - SITE: GS-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .96 PERCENT MASS 97.4  
 CHI SQUARE 1.68 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 42 GS-CSPT 115.0918 12.6702 9.0836  
 YES 43 GS-CSG 336.8335 17.8716 18.8474  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 464.2+- 11.6

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 92.8371 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 8.3931 20.2358  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

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 1.0000 42 1.0000 43  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: GS-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .96 PERCENT MASS 97.4  
 CHI SQUARE 1.68 DF 29

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U	
C1	TOT		464.1855+-	11.5962	451.9253+-	13.4316	.97+-	.04	-.7
C2	ETHYL *		35.6574+-	3.5657	33.9251+-	3.5349	.95+-	.14	-.3
C3	ACETYL *		27.3341+-	2.7334	23.5034+-	2.4428	.86+-	.12	-1.0
C4	PROPYL *		17.1481+-	1.7148	15.9296+-	1.6243	.93+-	.13	-.5
C5	N-C3 *		6.7101+-	.6710	6.7265+-	.6574	1.00+-	.14	.0
C6	1BUTEN *		13.2186+-	1.3219	10.0793+-	1.2054	.76+-	.12	-1.8
C7	N-C4 *		27.9549+-	2.7955	26.9150+-	2.0397	.96+-	.12	-.3
C8	2M-C4 *		16.5379+-	1.6538	23.0875+-	2.0359	1.40+-	.19	2.5
C9	N-C5 *		17.3126+-	1.7313	15.7016+-	1.2924	.91+-	.12	-.7
C10	CYC-C5 *		3.5925+-	1.7963	2.7577+-	.3627	.77+-	.40	-.5
C11	2M-C5 *		23.0251+-	2.3025	19.2416+-	1.5603	.84+-	.11	-1.4
C12	3M-C5 *		16.8112+-	1.6811	13.2524+-	1.0476	.79+-	.10	-1.8
C13	N-C6 *		19.4671+-	1.9467	14.6990+-	1.1048	.76+-	.09	-2.1
C14	MCYC-C *		15.2908+-	1.5291	13.0841+-	1.7506	.86+-	.14	-.9
C15	BENZEN *		23.8264+-	2.3826	23.1367+-	2.0308	.97+-	.13	-.2
C16	2M-C6 *		11.0536+-	1.1054	8.9876+-	1.3422	.81+-	.15	-1.2
C17	3M-C6 *		13.1390+-	1.3139	10.3753+-	1.7125	.79+-	.15	-1.3
C18	224TMC *		7.1638+-	.7164	6.2117+-	.7619	.87+-	.14	-.9
C19	N-C7 *		10.0612+-	1.0061	8.2995+-	1.4346	.82+-	.16	-1.0
C20	TOLUEN *		56.5546+-	5.6555	58.4784+-	4.7893	1.03+-	.13	.3
C21	DMCYCC *		1.7671+-	.8835	2.1771+-	.9392	1.23+-	.81	.3
C22	N-C8 *		4.5451+-	2.2725	4.5240+-	.7974	1.00+-	.53	.0
C23	E-BENZ *		10.3717+-	1.0372	12.9363+-	1.6435	1.25+-	.20	1.3
C24	M&P-XY *		33.6807+-	3.3681	43.7235+-	3.7453	1.30+-	.17	2.0
C25	O-XYL *		14.4869+-	1.4487	18.4618+-	1.5663	1.27+-	.17	1.9
C26	3E-TOL *		12.3908+-	1.2391	16.2693+-	1.2212	1.31+-	.16	2.2
C27	4E-TOL *		2.3402+-	1.1701	3.7665+-	.3882	1.61+-	.82	1.2
C28	N-C10 *		5.2561+-	.5256	3.4854+-	1.4857	.66+-	.29	-1.1
C29	3IP-TO *		4.7388+-	2.3694	.4076+-	.0436	.09+-	.04	-1.8
C30	4IP-TO *		5.6090+-	.5609	6.3289+-	.4906	1.13+-	.14	1.0
C31	N-C11 *		3.8499+-	1.9250	3.2594+-	1.3485	.85+-	.55	-.3
C32	N-C12 *		3.2901+-	1.6450	2.1934+-	.6540	.67+-	.39	-.6

SOURCE CONTRIBUTION ESTIMATES - SITE: RW-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 98.2  
 CHI SQUARE 1.89 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 47	RW-CSPT	167.8810	20.3586	8.2462
YES 48	RW-CSG	512.3816	25.1154	20.4011

MEASURED CONCENTRATION FOR SIZE: VOC  
 692.5+- 17.6

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 138.4943 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

13.5790 29.3405

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

1.0000 47 1.0000 48

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: RW-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 98.2  
 CHI SQUARE 1.89 DF 29

SPECIES	I	MEAS	CALC	RATIO C/M	RATIO R/U	
C1	TOT	692.4714+-	17.6063	680.2626+-	20.1070	.98+- .04 -.5
C2	ETHYL *	55.2349+-	5.5235	51.1497+-	5.1689	.93+- .13 -.5
C3	ACETYL *	44.5440+-	4.4544	34.8924+-	3.5262	.78+- .11 -1.7
C4	PROPYL *	26.5612+-	2.6561	19.6126+-	1.9822	.74+- .10 -2.1
C5	N-C3 *	6.1643+-	.6164	5.8798+-	.5381	.95+- .13 -.3
C6	1BUTEN *	18.3394+-	1.8339	15.1434+-	2.0382	.83+- .14 -1.2
C7	N-C4 *	47.1858+-	4.7186	44.5446+-	3.3650	.94+- .12 -.5
C8	2M-C4 *	42.4288+-	4.2429	50.1940+-	3.7576	1.18+- .15 1.4
C9	N-C5 *	54.7959+-	5.4796	47.5028+-	3.7559	.87+- .11 -1.1
C10	CYC-C5 *	4.9353+-	2.4677	4.3936+-	.7031	.89+- .47 -.2
C11	2M-C5 *	29.9795+-	2.9979	25.2932+-	2.2131	.84+- .11 -1.3
C12	3M-C5 *	19.9305+-	1.9931	16.4488+-	1.9748	.83+- .13 -1.2
C13	N-C6 *	17.8565+-	1.7857	15.5343+-	2.0340	.87+- .14 -.9
C14	MCYC-C *	22.4846+-	2.2485	18.9801+-	2.3940	.84+- .14 -1.1
C15	BENZEN *	39.2411+-	3.9241	35.4912+-	3.0406	.90+- .12 -.8
C16	2M-C6 *	6.9873+-	.6987	12.2852+-	1.3864	1.76+- .27 3.4
C17	3M-C6 *	16.9128+-	1.6913	13.6437+-	1.5795	.81+- .12 -1.4
C18	224TMC *	11.4782+-	1.1478	9.4528+-	1.0486	.82+- .12 -1.3
C19	N-C7 *	12.3671+-	1.2367	10.8300+-	1.2720	.88+- .14 -.9
C20	TOLUEN *	90.0152+-	9.0015	94.4913+-	7.6859	1.05+- .14 .4
C21	DMCYCC *	1.9121+-	.9561	.8404+-	.0515	.44+- .22 -1.1
C22	N-C8 *	6.9489+-	.6949	6.0394+-	.7030	.87+- .13 -.9
C23	E-BENZ *	17.1872+-	1.7187	20.6016+-	2.6756	1.20+- .20 1.1
C24	M&P-XY *	54.7246+-	5.4725	68.1526+-	5.8248	1.25+- .16 1.7
C25	O-XYL *	22.3996+-	2.2400	28.1515+-	2.4002	1.26+- .17 1.8
C26	3E-TOL *	9.9612+-	.9961	14.9334+-	1.7932	1.50+- .23 2.4
C27	4E-TOL *	4.2303+-	2.1151	6.4603+-	.8020	1.53+- .79 1.0
C28	N-C10 *	1.5335+-	.7668	1.5408+-	.4580	1.00+- .58 .0
C29	3IP-TO *	1.4485+-	.7242	.9421+-	.0598	.65+- .33 -.7
C30	4IP-TO *	3.1000+-	1.5500	4.3462+-	.6163	1.40+- .73 .7
C31	N-C11 *	.9711+-	.4856	1.3065+-	.3168	1.35+- .75 .6
C32	N-C12 *	.6118+-	.3059	1.1851+-	.1236	1.94+- .99 1.7

SOURCE CONTRIBUTION ESTIMATES - SITE: KR-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .97 PERCENT MASS 93.2  
 CHI SQUARE 1.35 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 52 KR-CSPT 520.4525 24.5713 21.1813  
 YES 53 KR-CSG 143.5244 13.5548 10.5885  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 712.2+- 22.1

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 142.4303 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 10.2109 26.1385  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 52 1.0000 53  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: KR-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .97 PERCENT MASS 93.2  
 CHI SQUARE 1.35 DF 29

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U
C1	TOT	712.1516+-	22.1426	663.9769+-	19.7235	.93+-	.04	-1.6
C2	ETHYL *	22.1232+-	2.2123	20.8722+-	2.6578	.94+-	.15	-.4
C3	ACETYL *	16.1641+-	1.6164	13.4412+-	1.5568	.83+-	.13	-1.2
C4	PROPYL *	11.9083+-	1.1908	11.7782+-	1.6594	.99+-	.17	-.1
C5	N-C3 *	70.0386+-	7.0039	48.3199+-	5.0355	.69+-	.10	-2.5
C6	1BUTEN *	7.8298+-	.7830	8.9360+-	.6664	1.14+-	.14	1.1
C7	N-C4 *	176.1292+-	17.6129	135.9751+-	12.8109	.77+-	.11	-1.8
C8	2M-C4 *	34.4511+-	3.4451	31.9770+-	2.4999	.93+-	.12	-.6
C9	N-C5 *	20.1152+-	2.0115	22.5142+-	1.7299	1.12+-	.14	.9
C10	CYC-C5 *	3.0720+-	1.5360	3.4694+-	1.1267	1.13+-	.67	.2
C11	2M-C5 *	16.1441+-	1.6144	15.8554+-	1.1710	.98+-	.12	-.1
C12	3M-C5 *	10.0451+-	1.0045	10.4480+-	.7815	1.04+-	.13	.3
C13	N-C6 *	12.5402+-	1.2540	11.7014+-	.9044	.93+-	.12	-.5
C14	MCYC-C *	8.6964+-	.8696	8.6919+-	.6847	1.00+-	.13	.0
C15	BENZEN *	14.3983+-	1.4398	15.1740+-	1.1584	1.05+-	.13	.4
C16	2M-C6 *	5.5370+-	.5537	5.5015+-	1.4929	.99+-	.29	.0
C17	3M-C6 *	7.1155+-	.7115	6.8493+-	2.0382	.96+-	.30	-.1
C18	224TMC *	4.4231+-	2.2116	4.3765+-	1.3672	.99+-	.58	.0
C19	N-C7 *	5.2124+-	.5212	5.6863+-	1.8955	1.09+-	.38	.2
C20	TOLUEN *	45.7724+-	4.5772	50.8315+-	4.5419	1.11+-	.15	.8
C21	DMCYCC *	11.3064+-	1.1306	13.6047+-	1.4185	1.20+-	.17	1.3
C22	N-C8 *	3.3017+-	1.6509	3.6724+-	1.4322	1.11+-	.71	.2
C23	E-BENZ *	11.2339+-	1.1234	11.7717+-	.9496	1.05+-	.13	.4
C24	M&P-XY *	35.5725+-	3.5572	41.3502+-	3.3558	1.16+-	.15	1.2
C25	O-XYL *	15.0027+-	1.5003	16.2133+-	1.2959	1.08+-	.14	.6
C26	3E-TOL *	25.2751+-	2.5275	16.9606+-	1.5109	.67+-	.09	-2.8
C27	4E-TOL *	1.4036+-	.7018	1.4332+-	.1340	1.02+-	.52	.0
C28	N-C10 *	31.2442+-	3.1244	29.8974+-	3.1160	.96+-	.14	-.3
C29	3IP-TO *	12.4602+-	1.2460	8.6581+-	.8943	.69+-	.10	-2.5
C30	4IP-TO *	31.8187+-	3.1819	45.6641+-	4.7082	1.44+-	.21	2.4
C31	N-C11 *	36.8312+-	3.6831	35.5887+-	3.7187	.97+-	.14	-.2
C32	N-C12 *	4.9851+-	2.4925	6.7633+-	.6889	1.36+-	.69	.7

SOURCE CONTRIBUTION ESTIMATES - SITE: FA-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .99 PERCENT MASS 99.3  
 CHI SQUARE .22 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 57	FA-CSPT	107.9015	13.8314	7.8012
YES 58	FA-CSG	147.7653	11.0485	13.3743

MEASURED CONCENTRATION FOR SIZE: VOC  
 257.5+- 9.3

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 51.5045 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

7.3259 16.1155

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

1.0000 57 1.0000 58

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: FA-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .99 PERCENT MASS 99.3  
 CHI SQUARE .22 DF 29

SPECIES	I	MEAS	CALC		RATIO C/M	RATIO R/U
C1	TOT	257.5227+-	9.3357	255.6669+-	10.9234	.99+- .06 -.1
C2	ETHYL *	18.2768+-	1.8277	18.7488+-	1.9013	1.03+- .15 .2
C3	ACETYL *	12.9759+-	1.2976	12.0938+-	1.2254	.93+- .13 -.5
C4	PROPYL *	8.5801+-	.8580	7.9649+-	.8115	.93+- .13 -.5
C5	N-C3 *	3.6765+-	1.8383	3.1814+-	1.4095	.87+- .58 -.2
C6	1BUTEN *	5.3784+-	.5378	5.2187+-	.7271	.97+- .17 -.2
C7	N-C4 *	28.6129+-	2.8613	27.2849+-	2.1277	.95+- .12 -.4
C8	2M-C4 *	41.8779+-	4.1878	39.0290+-	3.4170	.93+- .12 -.5
C9	N-C5 *	12.1720+-	1.2172	12.6862+-	2.1312	1.04+- .20 .2
C10	CYC-C5 *	2.1391+-	1.0696	2.1801+-	.4275	1.02+- .55 .0
C11	2M-C5 *	10.5688+-	1.0569	10.3897+-	1.4964	.98+- .17 -.1
C12	3M-C5 *	6.5679+-	.6568	6.3676+-	.9624	.97+- .18 -.2
C13	N-C6 *	7.0968+-	.7097	6.6565+-	1.2272	.94+- .20 -.3
C14	MCYC-C *	4.7132+-	2.3566	4.3655+-	.7800	.93+- .49 -.1
C15	BENZEN *	7.9689+-	.7969	9.3459+-	1.7058	1.17+- .24 .7
C16	2M-C6 *	4.1020+-	2.0510	4.1173+-	.7136	1.00+- .53 .0
C17	3M-C6 *	4.7249+-	2.3625	4.8686+-	.9301	1.03+- .55 .1
C18	224TMC *	2.9854+-	1.4927	2.9781+-	.5688	1.00+- .53 .0
C19	N-C7 *	3.1453+-	1.5726	2.9702+-	.4829	.94+- .50 -.1
C20	TOLUEN *	21.5184+-	2.1518	20.2271+-	1.6498	.94+- .12 -.5
C21	DMCYCC *	2.7033+-	1.3517	2.1104+-	1.0075	.78+- .54 -.4
C22	N-C8 *	2.6093+-	1.3046	2.6337+-	.8878	1.01+- .61 .0
C23	E-BENZ *	4.5463+-	2.2731	5.2095+-	1.0850	1.15+- .62 .3
C24	M&P-XY *	14.6614+-	1.4661	17.3637+-	1.3491	1.18+- .15 1.4
C25	O-XYL *	5.9097+-	.5910	7.3039+-	1.5203	1.24+- .29 .9
C26	3E-TOL *	3.8293+-	1.9147	5.3884+-	1.5721	1.41+- .81 .6
C27	4E-TOL *	1.4904+-	.7452	.9560+-	.0993	.64+- .33 -.7
C28	N-C10 *	3.7964+-	1.8982	3.5582+-	1.6952	.94+- .65 -.1
C29	3IP-TO *	1.5350+-	.7675	1.6113+-	.7553	1.05+- .72 .1
C30	4IP-TO *	2.5435+-	1.2717	3.3082+-	1.3633	1.30+- .84 .4
C31	N-C11 *	5.4043+-	.5404	4.5701+-	2.2333	.85+- .42 -.4
C32	N-C12 *	1.4128+-	.7064	.9796+-	.4205	.69+- .46 -.5

SOURCE CONTRIBUTION ESTIMATES - SITE: HD2-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .92 PERCENT MASS 85.0  
 CHI SQUARE 4.26 DF 27  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 59	HD2-AMB	82.0468	40.3062	2.0356
YES 62	HD2-CSPT	346.0580	28.8595	11.9911
YES 63	HD2-CSG	467.0703	34.9099	13.3793

MEASURED CONCENTRATION FOR SIZE: VOC  
 1053.3+- 32.1

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 210.6555 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 13.8377 31.2759 50.0649  
 -----

NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 59 1.0000 62 1.0000 63  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: HD2-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .92 PERCENT MASS 85.0  
 CHI SQUARE 4.26 DF 27

SPECIES	I	MEAS	CALC	RATIO C/M	RATIO R/U
C1	TOT	*****+-	32.1107 895.1751+-	24.1542 .85+-	.03 -3.9
C2	ETHYL	*	67.1946+- 6.7195	61.3556+- 6.2302	.91+- .13 -6
C3	ACETYL	*	43.9749+- 4.3975	36.4990+- 3.7170	.83+- .12 -1.3
C4	PROPYL	*	33.7980+- 3.3798	37.1518+- 3.7232	1.10+- .16 .7
C5	N-C3	*	175.8944+- 17.5894	32.3737+- 4.4822	.18+- .03 -7.9
C6	1BUTEN	*	26.0238+- 2.6024	15.9585+- 1.8193	.61+- .09 -3.2
C7	N-C4	*	213.3763+- 21.3376	190.2664+- 16.9142	.89+- .12 -.8
C8	2M-C4	*	50.7921+- 5.0792	35.5944+- 4.4935	.70+- .11 -2.2
C9	N-C5	*	37.8162+- 3.7816	39.8732+- 3.4849	1.05+- .14 .4
C10	CYC-C5	*	6.7349+- .6735	6.3219+- 1.0535	.94+- .18 -.3
C11	2M-C5	*	46.1152+- 4.6115	39.4388+- 3.3866	.86+- .11 -1.2
C12	3M-C5	*	22.8441+- 2.2844	19.9207+- 1.5018	.87+- .11 -1.1
C13	N-C6	*	20.8375+- 2.0838	21.0495+- 1.8906	1.01+- .14 .1
C14	MCYC-C	*	13.3463+- 1.3346	12.7803+- .9288	.96+- .12 -.3
C15	BENZEN	*	28.9873+- 2.8987	33.3071+- 3.1693	1.15+- .16 1.0
C16	2M-C6	*	12.5385+- 1.2539	12.6889+- .9430	1.01+- .13 .1
C17	3M-C6	*	14.2930+- 1.4293	14.5674+- 1.0781	1.02+- .13 .2
C18	224TMC	*	9.0759+- .9076	11.1925+- 2.0750	1.23+- .26 .9
C19	N-C7	*	10.6812+- 1.0681	10.7756+- .7598	1.01+- .12 .1
C20	TOLUEN	*	65.3372+- 6.5337	70.9605+- 7.5253	1.09+- .16 .6
C21	DMCYCC	*	6.6114+- .6611	5.7418+- .5350	.87+- .12 -1.0
C22	N-C8	*	3.9771+- 1.9886	5.6665+- .8989	1.42+- .75 .8
C23	E-BENZ	*	15.8828+- 1.5883	21.2651+- 1.8058	1.34+- .18 2.2
C24	M&P-XY	*	50.2519+- 5.0252	67.0130+- 5.5468	1.33+- .17 2.2
C25	O-XYL	*	20.9610+- 2.0961	29.0929+- 2.6208	1.39+- .19 2.4
C26	3E-TOL	*	20.3590+- 2.0359	19.0015+- 1.3158	.93+- .11 -.6
C27	4E-TOL	*	4.3579+- 2.1789	8.4605+- .5675	1.94+- .98 1.8
C28	N-C10	*	8.1035+- .8103	6.5866+- .5710	.81+- .11 -1.5
C29	3IP-TO	*	4.9393+- 2.4696	7.1681+- .6194	1.45+- .74 .9
C30	4IP-TO	*	10.4959+- 1.0496	8.6577+- .6941	.82+- .11 -1.5
C31	N-C11	*	7.6764+- .7676	9.6152+- .9758	1.25+- .18 1.6
C32	N-C12	*	.0000< .0001	4.8307< .4428	.00< .00 10.9

SOURCE CONTRIBUTION ESTIMATES - SITE: HD1-CSH DATE: WINT98 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .91 PERCENT MASS 87.7  
 CHI SQUARE 2.71 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L)  
 -----  
 YES 68 HD1ACSPT 6.5173 1.1127 5.8571  
 YES 69 HD1ACSG 81.1739 3.5096 23.1289  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 100.0+- 3.8

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 20.0000 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 1.0122 3.5399  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 68 1.0000 69  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: HD1-CSH DATE: WINT98 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .91 PERCENT MASS 87.7  
 CHI SQUARE 2.71 DF 28

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U
C1	TOT	100.0000+-	3.8416	87.6913+-	3.2325	.88+-	.05	-2.5
C2	ETHYL *	11.3625+-	1.7044	4.6164+-	.4705	.41+-	.07	-3.8
C3	ACETYL *	7.9698+-	1.1955	6.1434+-	.6182	.77+-	.14	-1.4
C4	PROPYL *	6.0867+-	.9130	3.6577+-	.3743	.60+-	.11	-2.5
C5	N-C3 *	1.7589+-	.2638	1.3503+-	.1323	.77+-	.14	-1.4
C6	1BUTEN	.0000<	.0001	.0608<	.0316	.00<	.00	1.9
C7	N-C4 *	5.8959+-	.8844	4.3697+-	.4007	.74+-	.13	-1.6
C8	2M-C4 *	5.9569+-	.8935	4.4678+-	.4440	.75+-	.13	-1.5
C9	N-C5 *	3.4943+-	.5241	2.7283+-	.2700	.78+-	.14	-1.3
C10	CYC-C5 *	.6885+-	.1033	.5079+-	.0515	.74+-	.13	-1.6
C11	2M-C5 *	4.2215+-	.6332	3.3943+-	.3448	.80+-	.15	-1.1
C12	3M-C5 *	2.8071+-	.4211	2.2522+-	.2283	.80+-	.15	-1.2
C13	N-C6 *	2.4878+-	.3732	2.0857+-	.2114	.84+-	.15	-.9
C14	MCYC-C *	3.0933+-	.4640	2.5658+-	.2608	.83+-	.15	-1.0
C15	BENZEN *	5.5310+-	.8297	5.1819+-	.5181	.94+-	.17	-.4
C16	2M-C6 *	2.0810+-	.3122	1.8159+-	.1839	.87+-	.16	-.7
C17	3M-C6 *	2.2894+-	.3434	1.9916+-	.2017	.87+-	.16	-.7
C18	224TMC *	1.7144+-	.2572	1.4497+-	.1471	.85+-	.15	-.9
C19	N-C7 *	1.7280+-	.2592	1.5736+-	.1595	.91+-	.16	-.5
C20	TOLUEN *	13.2225+-	1.9834	13.8182+-	1.2968	1.05+-	.18	.3
C21	DMCYCC *	.1968+-	.0295	.1570+-	.0422	.80+-	.25	-.8
C22	N-C8 *	.8626+-	.1294	.9174+-	.0930	1.06+-	.19	.3
C23	E-BENZ *	2.4699+-	.3705	3.1573+-	.3030	1.28+-	.23	1.4
C24	M&P-XY *	7.6354+-	1.1453	10.3381+-	1.0098	1.35+-	.24	1.8
C25	O-XYL *	3.1018+-	.4653	4.2457+-	.4125	1.37+-	.24	1.8
C26	3E-TOL *	1.4626+-	.2194	2.4067+-	.2300	1.65+-	.29	3.0
C27	4E-TOL *	.6450+-	.0968	1.0330+-	.1088	1.60+-	.29	2.7
C28	N-C10 *	.3000+-	.0450	.2372+-	.0177	.79+-	.13	-1.3
C29	3IP-TO *	.1562+-	.0234	.1807+-	.0467	1.16+-	.35	.5
C30	4IP-TO *	.5812+-	.0872	.7408+-	.0612	1.27+-	.22	1.5
C31	N-C11 *	.1497+-	.0225	.1463+-	.0393	.98+-	.30	-.1
C32	N-C12 *	.0494+-	.0074	.0999+-	.0185	2.02+-	.48	2.5

SOURCE CONTRIBUTION ESTIMATES - SITE: HD1-CSH DATE: WINT98 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .89 PERCENT MASS 83.9  
 CHI SQUARE 3.32 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 74 HD1BCSPT 5.0794 .8691 5.8441  
 YES 75 HD1BCSG 78.8616 3.7389 21.0921  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 100.0+- 3.8

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 20.0000 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 .7526 3.7641  
 -----

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 74 1.0000 75  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: HD1-CSH DATE: WINT98 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .89 PERCENT MASS 83.9  
 CHI SQUARE 3.32 DF 28

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U
C1	TOT	100.0000+-	3.8416	83.9410+-	3.3987	.84+-	.05	-3.1
C2	ETHYL *	11.3625+-	1.7044	4.4690+-	.9538	.39+-	.10	-3.5
C3	ACETYL *	7.9698+-	1.1955	5.9364+-	1.6460	.74+-	.23	-1.0
C4	PROPYL *	6.0867+-	.9130	3.5452+-	.6120	.58+-	.13	-2.3
C5	N-C3 *	1.7589+-	.2638	1.0758+-	.1437	.61+-	.12	-2.3
C6	1BUTEN	.0000<	.0001	.0474<	.0106	.00<	.00	4.5
C7	N-C4 *	5.8959+-	.8844	4.1428+-	.6902	.70+-	.16	-1.6
C8	2M-C4 *	5.9569+-	.8935	4.3066+-	.8563	.72+-	.18	-1.3
C9	N-C5 *	3.4943+-	.5241	2.6277+-	.3265	.75+-	.15	-1.4
C10	CYC-C5 *	.6885+-	.1033	.4903+-	.0218	.71+-	.11	-1.9
C11	2M-C5 *	4.2215+-	.6332	3.2817+-	.5162	.78+-	.17	-1.2
C12	3M-C5 *	2.8071+-	.4211	2.1744+-	.2327	.77+-	.14	-1.3
C13	N-C6 *	2.4878+-	.3732	2.0133+-	.2013	.81+-	.15	-1.1
C14	MCYC-C *	3.0933+-	.4640	2.4813+-	.3024	.80+-	.16	-1.1
C15	BENZEN *	5.5310+-	.8297	5.0008+-	1.1604	.90+-	.25	-.4
C16	2M-C6 *	2.0810+-	.3122	1.7521+-	.1555	.84+-	.15	-.9
C17	3M-C6 *	2.2894+-	.3434	1.9195+-	.1823	.84+-	.15	-1.0
C18	224TMC *	1.7144+-	.2572	1.3940+-	.1013	.81+-	.14	-1.2
C19	N-C7 *	1.7280+-	.2592	1.5191+-	.1210	.88+-	.15	-.7
C20	TOLUEN *	13.2225+-	1.9834	13.1646+-	7.1081	1.00+-	.56	.0
C21	DMCYCC *	.1968+-	.0295	.1367+-	.0101	.69+-	.12	-1.9
C22	N-C8 *	.8626+-	.1294	.8829+-	.0485	1.02+-	.16	.1
C23	E-BENZ *	2.4699+-	.3705	3.0219+-	.4060	1.22+-	.25	1.0
C24	M&P-XY *	7.6354+-	1.1453	9.9302+-	4.3524	1.30+-	.60	.5
C25	O-XYL *	3.1018+-	.4653	4.0739+-	.7397	1.31+-	.31	1.1
C26	3E-TOL *	1.4626+-	.2194	2.3015+-	.2406	1.57+-	.29	2.6
C27	4E-TOL *	.6450+-	.0968	.9843+-	.0547	1.53+-	.24	3.1
C28	N-C10 *	.3000+-	.0450	.2066+-	.0151	.69+-	.11	-2.0
C29	3IP-TO *	.1562+-	.0234	.1580+-	.0112	1.01+-	.17	.1
C30	4IP-TO *	.5812+-	.0872	.6853+-	.0333	1.18+-	.19	1.1
C31	N-C11 *	.1497+-	.0225	.1273+-	.0094	.85+-	.14	-.9
C32	N-C12 *	.0494+-	.0074	.0905+-	.0047	1.83+-	.29	4.7

Scenario 2 Cold Start Model Output

SOURCE CONTRIBUTION ESTIMATES - SITE: JE-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .96 PERCENT MASS 100.2  
 CHI SQUARE .90 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)
YES 1	COLDST97	120.1122 10.8502 11.0700
YES 4	WHLGAS97	15.6231 7.0539 2.2148
YES 11	JE-CSPT	50.7314 5.2018 9.7527

MEASURED CONCENTRATION FOR SIZE: VOC  
 186.1+- 8.1

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 37.2299 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

3.8712 5.7823 12.0881

NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE  
 1.0000 1 1.0000 4 1.0000 11

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: JE-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .96 PERCENT MASS 100.2  
 CHI SQUARE .90 DF 28

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U
C1	TOT	186.1494+-	8.0822	186.4667+-	7.9898	1.00+-	.06	.0
C2	ETHYL *	14.9370+-	1.4937	14.6633+-	2.1224	.98+-	.17	-.1
C3	ACETYL *	10.0432+-	1.0043	8.0050+-	1.1636	.80+-	.14	-1.3
C4	PROPYL *	6.5448+-	.6545	6.4238+-	.9294	.98+-	.17	-.1
C5	N-C3 *	5.0783+-	.5078	7.0655+-	.8200	1.39+-	.21	2.1
C6	1BUTEN *	4.5178+-	2.2589	4.2816+-	.7753	.95+-	.50	-.1
C7	N-C4 *	9.3066+-	.9307	8.9481+-	.7576	.96+-	.13	-.3
C8	2M-C4 *	6.0774+-	.6077	8.5650+-	1.0064	1.41+-	.22	2.1
C9	N-C5 *	6.1875+-	.6187	5.0088+-	.7037	.81+-	.14	-1.3
C10	CYC-C5 *	1.2361+-	.6181	.9506+-	.0955	.77+-	.39	-.5
C11	2M-C5 *	7.2221+-	.7222	6.3216+-	.8629	.88+-	.15	-.8
C12	3M-C5 *	5.2392+-	.5239	4.1638+-	.5831	.79+-	.14	-1.4
C13	N-C6 *	4.6872+-	2.3436	4.0705+-	.6249	.87+-	.45	-.3
C14	MCYC-C *	5.3273+-	.5327	4.6868+-	.5892	.88+-	.14	-.8
C15	BENZEN *	8.5412+-	.8541	8.6034+-	1.1820	1.01+-	.17	.0
C16	2M-C6 *	2.8804+-	1.4402	2.5947+-	.4025	.90+-	.47	-.2
C17	3M-C6 *	4.0471+-	2.0235	3.1241+-	.5754	.77+-	.41	-.4
C18	224TMC *	2.7280+-	1.3640	1.8983+-	.2783	.70+-	.36	-.6
C19	N-C7 *	3.1513+-	1.5757	3.3152+-	.6263	1.05+-	.56	.1
C20	TOLUEN *	25.6762+-	2.5676	27.1228+-	3.1178	1.06+-	.16	.4
C21	DMCYCC *	2.0879+-	1.0439	1.8118+-	.8695	.87+-	.60	-.2
C22	N-C8 *	4.6821+-	2.3410	4.3795+-	.3907	.94+-	.48	-.1
C23	E-BENZ *	3.8456+-	1.9228	5.4018+-	.7394	1.40+-	.73	.8
C24	M&P-XY *	13.1522+-	1.3152	17.3031+-	2.3625	1.32+-	.22	1.5
C25	O-XYL *	4.9259+-	2.4630	7.2404+-	.9832	1.47+-	.76	.9
C26	3E-TOL *	4.9666+-	2.4833	5.0567+-	.7462	1.02+-	.53	.0
C27	4E-TOL *	1.5172+-	.7586	2.1579+-	.3163	1.42+-	.74	.8
C28	N-C10 *	1.7882+-	.8941	1.3725+-	.6032	.77+-	.51	-.4
C29	3IP-TO *	2.3368+-	1.1684	1.4572+-	.7243	.62+-	.44	-.6
C30	4IP-TO *	2.0659+-	1.0329	2.0827+-	.4641	1.01+-	.55	.0
C31	N-C11 *	9.3845+-	.9385	7.0192+-	.8117	.75+-	.11	-1.9
C32	N-C12 *	1.9677+-	.9838	1.3706+-	.6768	.70+-	.49	-.5



SOURCE CONTRIBUTION ESTIMATES - SITE: SV-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .89 PERCENT MASS 94.7  
 CHI SQUARE 3.44 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 1	COLDST97	160.6358	15.1713	10.5881
YES 16	SV-CSAMB	45.5116	12.6303	3.6034
YES 17	SV-CSPT	93.3744	11.6743	7.9983

MEASURED CONCENTRATION FOR SIZE: VOC  
 316.3+- 8.8

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 63.2652 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

5.9693 14.1195 17.0583

NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

1.0000 1 1.0000 16 1.0000 17

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: SV-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .89 PERCENT MASS 94.7  
 CHI SQUARE 3.44 DF 28

SPECIES	I	MEAS	---CALC---	---RATIO C/M---	---RATIO R/U---
C1	TOT	316.3260+-	8.8272 299.5218+-	10.9623 .95+-	.04 -1.2
C2	ETHYL *	20.0757+-	2.0076 20.0684+-	2.9354 1.00+-	.18 .0
C3	ACETYL *	14.6905+-	1.4691 11.5161+-	1.7667 .78+-	.14 -1.4
C4	PROPYL *	9.3357+-	.9336 10.0634+-	1.4101 1.08+-	.19 .4
C5	N-C3 *	7.7216+-	.7722 7.9306+-	1.9689 1.03+-	.27 .1
C6	1BUTEN *	6.9613+-	.6961 6.7748+-	1.2559 .97+-	.20 -.1
C7	N-C4 *	17.6837+-	1.7684 19.9128+-	1.5101 1.13+-	.14 1.0
C8	2M-C4 *	10.6542+-	1.0654 13.7126+-	1.7491 1.29+-	.21 1.5
C9	N-C5 *	8.6638+-	.8664 8.9101+-	1.2941 1.03+-	.18 .2
C10	CYC-C5 *	1.8464+-	.9232 1.6391+-	.2756 .89+-	.47 -.2
C11	2M-C5 *	10.9244+-	1.0924 10.1168+-	1.8990 .93+-	.20 -.4
C12	3M-C5 *	6.4839+-	.6484 6.9448+-	1.3795 1.07+-	.24 .3
C13	N-C6 *	6.4056+-	.6406 6.0226+-	1.0937 .94+-	.19 -.3
C14	MCYC-C *	8.3506+-	.8351 7.0194+-	1.1983 .84+-	.17 -.9
C15	BENZEN *	13.8797+-	1.3880 15.6635+-	1.8826 1.13+-	.18 .8
C16	2M-C6 *	4.8244+-	2.4122 3.7416+-	.6630 .78+-	.41 -.4
C17	3M-C6 *	5.7843+-	.5784 5.4576+-	1.1781 .94+-	.22 -.2
C18	224TMC *	3.6651+-	1.8325 3.2609+-	.6652 .89+-	.48 -.2
C19	N-C7 *	4.1728+-	2.0864 3.9498+-	.6657 .95+-	.50 -.1
C20	TOLUEN *	40.1918+-	4.0192 45.4699+-	4.3895 1.13+-	.16 .9
C21	DMCYCC *	3.2761+-	1.6380 2.8511+-	1.1530 .87+-	.56 -.2
C22	N-C8 *	2.4880+-	1.2440 4.3567+-	1.1520 1.75+-	.99 1.1
C23	E-BENZ *	11.3109+-	1.1311 10.0622+-	1.0615 .89+-	.13 -.8
C24	M&P-XY *	38.4439+-	3.8444 33.1708+-	3.4536 .86+-	.12 -1.0
C25	O-XYL *	14.1550+-	1.4155 13.6907+-	1.4695 .97+-	.14 -.2
C26	3E-TOL *	7.2998+-	.7300 9.5495+-	1.0108 1.31+-	.19 1.8
C27	4E-TOL *	3.2685+-	1.6342 2.6639+-	.4071 .82+-	.43 -.4
C28	N-C10 *	7.1179+-	.7118 1.5129+-	.5013 .21+-	.07 -6.4
C29	3IP-TO *	5.0871+-	.5087 6.4206+-	.7055 1.26+-	.19 1.5
C30	4IP-TO *	8.3783+-	.8378 3.7518+-	.8528 .45+-	.11 -3.9
C31	N-C11 *	11.1442+-	1.1144 3.2910+-	1.4043 .30+-	.13 -4.4
C32	N-C12 *	2.0409+-	1.0205 .0254+-	.0111 .01+-	.01 -2.0

SOURCE CONTRIBUTION ESTIMATES - SITE: MH-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 99.3  
 CHI SQUARE 1.80 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 1 COLDST97 624.9799 63.6997 9.8113  
 YES 4 WHLGAS97 285.2520 66.9315 4.2618  
 YES 19 MH-AMB 307.3026 79.7311 3.8542  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 1226.0+- 29.9

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 245.1955 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 23.4085 73.7694 94.3644  
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NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

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 1.0000 1 1.0000 4 1.0000 19  
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ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES

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SPECIES CONCENTRATIONS - SITE: MH-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .95 PERCENT MASS 99.3  
 CHI SQUARE 1.80 DF 28

SPECIES	I	MEAS	CALC	RATIO C/M	RATIO R/U
C1	TOT	*****+-	29.8648 *****+-	42.8253 .99+-	.04 -.2
C2	ETHYL *	99.9553+-	9.9955 89.6056+-	10.5621 .90+-	.14 -.7
C3	ACETYL *	84.9998+-	8.5000 53.3767+-	10.1536 .63+-	.13 -2.4
C4	PROPYL *	47.5694+-	4.7569 41.1250+-	6.7358 .86+-	.17 -.8
C5	N-C3 *	6.6218+-	.6622 21.4212+-	10.5742 3.23+-	1.63 1.4
C6	1BUTEN *	29.4494+-	2.9449 30.9133+-	6.4632 1.05+-	.24 .2
C7	N-C4 *	69.4943+-	6.9494 90.6811+-	7.6345 1.30+-	.17 2.1
C8	2M-C4 *	70.4955+-	7.0496 87.7567+-	12.7577 1.24+-	.22 1.2
C9	N-C5 *	45.7927+-	4.5793 46.1470+-	7.1533 1.01+-	.19 .0
C10	CYC-C5 *	8.6891+-	.8689 9.2631+-	1.5343 1.07+-	.21 .3
C11	2M-C5 *	58.1674+-	5.8167 55.8873+-	8.5122 .96+-	.18 -.2
C12	3M-C5 *	38.1333+-	3.8133 37.7757+-	6.2809 .99+-	.19 .0
C13	N-C6 *	36.2399+-	3.6240 32.0092+-	4.7841 .88+-	.16 -.7
C14	MCYC-C *	42.3067+-	4.2307 36.5691+-	4.2030 .86+-	.13 -1.0
C15	BENZEN *	72.7910+-	7.2791 61.4732+-	9.4637 .84+-	.16 -.9
C16	2M-C6 *	28.8840+-	2.8884 19.5230+-	2.8261 .68+-	.12 -2.3
C17	3M-C6 *	32.4271+-	3.2427 22.3683+-	3.6544 .69+-	.13 -2.1
C18	224TMC *	22.9184+-	2.2918 17.1917+-	2.9106 .75+-	.15 -1.5
C19	N-C7 *	25.6055+-	2.5605 19.5589+-	2.3720 .76+-	.12 -1.7
C20	TOLUEN *	157.6014+-	15.7601 179.1440+-	17.5210 1.14+-	.16 .9
C21	DMCYCC *	4.5339+-	2.2669 1.7539+-	.0735 .39+-	.19 -1.2
C22	N-C8 *	14.4264+-	1.4426 13.0566+-	1.8379 .91+-	.16 -.6
C23	E-BENZ *	33.5424+-	3.3542 34.3854+-	4.2974 1.03+-	.16 .2
C24	M&P-XY *	101.8643+-	10.1864 112.4322+-	14.4586 1.10+-	.18 .6
C25	O-XYL *	42.6153+-	4.2615 48.4752+-	6.4096 1.14+-	.19 .8
C26	3E-TOL *	22.4463+-	2.2446 30.6486+-	4.1690 1.37+-	.23 1.7
C27	4E-TOL *	9.7343+-	.9734 12.8310+-	1.3248 1.32+-	.19 1.9
C28	N-C10 *	4.0696+-	2.0348 2.5269+-	.1362 .62+-	.31 -.8
C29	3IP-TO *	3.2318+-	1.6159 1.3989+-	.0445 .43+-	.22 -1.1
C30	4IP-TO *	6.6218+-	.6622 7.5562+-	.9205 1.14+-	.18 .8
C31	N-C11 *	3.3304+-	1.6652 .4396+-	.0557 .13+-	.07 -1.7
C32	N-C12 *	1.4188+-	.7094 .2399+-	.0402 .17+-	.09 -1.7

SOURCE CONTRIBUTION ESTIMATES - SITE: SR-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .93 PERCENT MASS 100.6  
 CHI SQUARE 1.92 DF 29  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 1	COLDST97	324.4723	32.6447	9.9395
YES 27	SR-CSPT	253.4405	28.6375	8.8500

MEASURED CONCENTRATION FOR SIZE: VOC  
 574.6+- 14.6

ELIGIBLE SPACE DIM. = 2 FOR MAX. UNC. = 114.9245 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

15.2445 40.6618

NUMBER ESTIMABLE SOURCES = 2 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

1.0000 1 1.0000 27

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: SR-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .93 PERCENT MASS 100.6  
 CHI SQUARE 1.92 DF 29

SPECIES	I	MEAS	MEAS	CALC	CALC	RATIO C/M	RATIO R/U
C1	TOT	574.6224+-	14.5889	577.9128+-	22.0493	1.01+-	.05
C2	ETHYL *	50.4144+-	5.0414	43.8890+-	6.8719	.87+-	.16
C3	ACETYL *	37.2682+-	3.7268	24.9436+-	4.1371	.67+-	.13
C4	PROPYL *	23.8513+-	2.3851	19.4854+-	2.8975	.82+-	.15
C5	N-C3 *	13.4268+-	1.3427	11.1750+-	1.2745	.83+-	.13
C6	1BUTEN *	17.3875+-	1.7388	14.1119+-	3.5961	.81+-	.22
C7	N-C4 *	32.1304+-	3.2130	36.4850+-	3.3419	1.14+-	.15
C8	2M-C4 *	23.0443+-	2.3044	24.0662+-	2.4686	1.04+-	.15
C9	N-C5 *	18.9668+-	1.8967	18.3008+-	1.6772	.96+-	.13
C10	CYC-C5 *	3.7720+-	1.8860	3.8134+-	1.1195	1.01+-	.59
C11	2M-C5 *	24.0922+-	2.4092	19.5145+-	4.6654	.81+-	.21
C12	3M-C5 *	15.4804+-	1.5480	12.5808+-	2.9707	.81+-	.21
C13	N-C6 *	13.9954+-	1.3995	12.2935+-	2.9886	.88+-	.23
C14	MCYC-C *	17.0746+-	1.7075	13.8570+-	2.7962	.81+-	.18
C15	BENZEN *	34.5764+-	3.4576	30.8446+-	3.1276	.89+-	.13
C16	2M-C6 *	12.1951+-	1.2195	7.7922+-	1.8603	.64+-	.17
C17	3M-C6 *	3.0072+-	1.5036	9.5044+-	2.5353	3.16+-	1.79
C18	224TMC *	10.9883+-	1.0988	5.7711+-	1.4325	.53+-	.14
C19	N-C7 *	10.5686+-	1.0569	8.2273+-	1.8209	.78+-	.19
C20	TOLUEN *	75.1100+-	7.5110	93.5607+-	9.3478	1.25+-	.18
C21	DMCYCC *	12.1678+-	1.2168	4.9233+-	2.3782	.40+-	.20
C22	N-C8 *	6.3521+-	.6352	6.2836+-	1.5574	.99+-	.26
C23	E-BENZ *	14.4399+-	1.4440	19.0180+-	4.1073	1.32+-	.31
C24	M&P-XY *	48.0230+-	4.8023	63.2201+-	6.3433	1.32+-	.19
C25	O-XYL *	20.1414+-	2.0141	26.0423+-	2.6373	1.29+-	.18
C26	3E-TOL *	11.8549+-	1.1855	16.5704+-	3.4951	1.40+-	.33
C27	4E-TOL *	4.7281+-	2.3640	7.6770+-	1.7638	1.62+-	.89
C28	N-C10 *	4.4797+-	2.2399	1.0465+-	.0685	.23+-	.12
C29	3IP-TO *	5.0484+-	.5048	6.8473+-	3.4182	1.36+-	.69
C30	4IP-TO *	4.0675+-	2.0338	6.7965+-	1.9311	1.67+-	.96
C31	N-C11 *	4.2215+-	2.1107	6.7341+-	3.3257	1.60+-	1.12
C32	N-C12 *	1.7482+-	.8741	2.5380+-	1.2508	1.45+-	1.02

SOURCE CONTRIBUTION ESTIMATES - SITE: JS-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .99 PERCENT MASS 100.3  
 CHI SQUARE .50 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 1	COLDST97	126.6275	16.0939	7.8681
YES 4	WHLGAS97	40.3432	16.2956	2.4757
YES 32	JS-CSPT	725.0643	37.8443	19.1591

MEASURED CONCENTRATION FOR SIZE: VOC  
 889.5+- 32.9

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 177.8945 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

8.4838	19.9573	38.5549
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NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95

PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE
1.0000 1	1.0000 4	1.0000 32		

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES

COEFF. SOURCE	COEFF. SOURCE	COEFF. SOURCE	COEFF. SOURCE	SCE	STD ERR
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SPECIES CONCENTRATIONS - SITE: JS-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .99 PERCENT MASS 100.3  
 CHI SQUARE .50 DF 28

SPECIES	I	MEAS	---	---	---	---	---	RATIO C/M	---	RATIO R/U
C1	TOT	889.4724+-	32.9098	892.0350+-	30.6058	1.00+-	.05	.1		
C2	ETHYL *	19.9106+-	1.9911	18.1077+-	3.0187	.91+-	.18	-.5		
C3	ACETYL *	12.7376+-	1.2738	10.0903+-	1.7471	.79+-	.16	-1.2		
C4	PROPYL *	8.7583+-	.8758	7.8865+-	1.2098	.90+-	.16	-.6		
C5	N-C3 *	80.6222+-	8.0622	75.1740+-	8.2259	.93+-	.14	-.5		
C6	1BUTEN *	8.6671+-	.8667	7.2667+-	1.9203	.84+-	.24	-.7		
C7	N-C4 *	285.4078+-	28.5408	299.8478+-	31.8984	1.05+-	.15	.3		
C8	2M-C4 *	89.0532+-	8.9053	72.9699+-	6.8676	.82+-	.11	-1.4		
C9	N-C5 *	12.6604+-	1.2660	11.4685+-	.8757	.91+-	.11	-.8		
C10	CYC-C5 *	2.1931+-	1.0965	2.1077+-	.5089	.96+-	.53	-.1		
C11	2M-C5 *	16.5322+-	1.6532	16.2147+-	1.2573	.98+-	.12	-.2		
C12	3M-C5 *	11.1968+-	1.1197	10.8403+-	.8450	.97+-	.12	-.3		
C13	N-C6 *	12.7189+-	1.2719	12.3176+-	1.0012	.97+-	.12	-.2		
C14	MCYC-C *	7.3391+-	.7339	8.7867+-	1.7435	1.20+-	.27	.8		
C15	BENZEN *	13.5302+-	1.3530	13.9363+-	1.2514	1.03+-	.14	.2		
C16	2M-C6 *	7.0164+-	.7016	6.1426+-	1.7912	.88+-	.27	-.5		
C17	3M-C6 *	8.3023+-	.8302	7.4130+-	2.3302	.89+-	.29	-.4		
C18	224TMC *	6.6190+-	.6619	5.6262+-	1.8010	.85+-	.29	-.5		
C19	N-C7 *	7.9680+-	.7968	7.8328+-	.6296	.98+-	.13	-.1		
C20	TOLUEN *	44.4974+-	4.4497	53.8171+-	4.4460	1.21+-	.16	1.5		
C21	DMCYCC *	6.2870+-	.6287	5.7053+-	.6128	.91+-	.13	-.7		
C22	N-C8 *	5.8848+-	.5885	6.1656+-	2.1840	1.05+-	.39	.1		
C23	E-BENZ *	12.4453+-	1.2445	13.3288+-	1.1014	1.07+-	.14	.5		
C24	M&P-XY *	40.1510+-	4.0151	45.7597+-	3.7966	1.14+-	.15	1.0		
C25	O-XYL *	17.8275+-	1.7827	20.0116+-	1.6625	1.12+-	.15	.9		
C26	3E-TOL *	16.4925+-	1.6492	18.8068+-	1.6558	1.14+-	.15	1.0		
C27	4E-TOL *	6.8013+-	.6801	4.9264+-	1.4668	.72+-	.23	-1.2		
C28	N-C10 *	30.3266+-	3.0327	30.1623+-	3.2810	.99+-	.15	.0		
C29	3IP-TO *	6.3968+-	.6397	6.3549+-	.6939	.99+-	.15	.0		
C30	4IP-TO *	64.7517+-	6.4752	65.9725+-	7.0732	1.02+-	.15	.1		
C31	N-C11 *	23.1769+-	2.3177	23.5447+-	2.5711	1.02+-	.15	.1		
C32	N-C12 *	3.2008+-	1.6004	3.4500+-	1.7119	1.08+-	.76	.1		

SOURCE CONTRIBUTION ESTIMATES - SITE: PB-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .96 PERCENT MASS 98.7  
 CHI SQUARE 1.55 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 1	COLDST97	96.9468	13.1229	7.3876
YES 4	WHLGAS97	37.0803	10.7257	3.4571
YES 37	PB-CSPT	259.2356	13.6414	19.0036

MEASURED CONCENTRATION FOR SIZE: VOC  
 398.2+- 9.1

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 79.6488 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

6.0474 13.9300 15.5795

NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

1.0000 1 1.0000 4 1.0000 37

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: PB-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .96 PERCENT MASS 98.7  
 CHI SQUARE 1.55 DF 28

SPECIES	I	MEAS	MEAS	MEAS	MEAS	RATIO C/M	RATIO R/U
C1	TOT	398.2439+-	9.0829	393.2628+-	11.7580	.99+- .04	-.3
C2	ETHYL *	17.1696+-	1.7170	13.9485+-	2.3403	.81+- .16	-1.1
C3	ACETYL *	13.8358+-	1.3836	8.6207+-	1.7060	.62+- .14	-2.4
C4	PROPYL *	7.0362+-	.7036	6.0466+-	.9284	.86+- .16	-.8
C5	N-C3 *	11.2218+-	1.1222	9.2500+-	.9647	.82+- .12	-1.3
C6	1BUTEN *	5.7113+-	.5711	4.9784+-	1.1343	.87+- .22	-.6
C7	N-C4 *	19.0640+-	1.9064	18.2819+-	1.3899	.96+- .12	-.3
C8	2M-C4 *	14.1283+-	1.4128	13.6872+-	1.0972	.97+- .12	-.2
C9	N-C5 *	9.3553+-	.9355	8.2393+-	1.7949	.88+- .21	-.6
C10	CYC-C5 *	1.3630+-	.6815	1.6307+-	.3630	1.20+- .65	.3
C11	2M-C5 *	11.0438+-	1.1044	9.7262+-	2.0069	.88+- .20	-.6
C12	3M-C5 *	7.2167+-	.7217	7.4974+-	1.8881	1.04+- .28	.1
C13	N-C6 *	9.2180+-	.9218	8.6136+-	.6575	.93+- .12	-.5
C14	MCYC-C *	7.7558+-	.7756	7.3908+-	1.5077	.95+- .22	-.2
C15	BENZEN *	10.0953+-	1.0095	10.3296+-	1.9014	1.02+- .21	.1
C16	2M-C6 *	5.6452+-	.5645	4.6859+-	1.2919	.83+- .24	-.7
C17	3M-C6 *	7.1226+-	.7123	6.3255+-	.4909	.89+- .11	-.9
C18	224TMC *	5.0909+-	.5091	4.1603+-	1.2392	.82+- .26	-.7
C19	N-C7 *	7.0718+-	.7072	6.0807+-	1.8749	.86+- .28	-.5
C20	TOLUEN *	41.3346+-	4.1335	44.2800+-	3.5270	1.07+- .14	.5
C21	DMCYCC *	5.7647+-	.5765	4.3875+-	.4522	.76+- .11	-1.9
C22	N-C8 *	2.4819+-	1.2409	2.9296+-	.7423	1.18+- .66	.3
C23	E-BENZ *	7.9287+-	.7929	10.4601+-	.8346	1.32+- .17	2.2
C24	M&P-XY *	27.2318+-	2.7232	34.6613+-	2.7707	1.27+- .16	1.9
C25	O-XYL *	12.2491+-	1.2249	15.0666+-	1.2037	1.23+- .16	1.6
C26	3E-TOL *	17.6934+-	1.7693	15.3321+-	1.3054	.87+- .11	-1.1
C27	4E-TOL *	1.1570+-	.5785	2.6022+-	.5324	2.25+- 1.22	1.8
C28	N-C10 *	32.9863+-	3.2986	28.5742+-	2.9870	.87+- .13	-1.0
C29	3IP-TO *	8.2237+-	.8224	7.1381+-	.7489	.87+- .13	-1.0
C30	4IP-TO *	14.1766+-	1.4177	20.6343+-	2.0559	1.46+- .21	2.6
C31	N-C11 *	33.9857+-	3.3986	29.5926+-	3.1054	.87+- .13	-1.0
C32	N-C12 *	23.8853+-	2.3885	28.1104+-	2.9527	1.18+- .17	1.1

SOURCE CONTRIBUTION ESTIMATES - SITE: GS-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .93 PERCENT MASS 97.1  
 CHI SQUARE 2.76 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 1 COLDST97 252.6926 22.8079 11.0792  
 YES 4 WHLGAS97 74.5056 17.1327 4.3487  
 YES 42 GS-CSPT 123.7349 13.5481 9.1330  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 464.2+- 11.6

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 92.8371 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 7.5327 16.7572 25.6853  
 -----

NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE  
 -----  
 1.0000 1 1.0000 4 1.0000 42  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR  
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SPECIES CONCENTRATIONS - SITE: GS-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .93 PERCENT MASS 97.1  
 CHI SQUARE 2.76 DF 28

SPECIES	I	MEAS	-----	-----	-----	-----	RATIO C/M	-----	RATIO R/U
C1	TOT	464.1855+-	11.5962	450.9331+-	14.7254	.97+-	.04	-.7	
C2	ETHYL *	35.6574+-	3.5657	30.6554+-	4.4255	.86+-	.15	-.9	
C3	ACETYL *	27.3341+-	2.7334	17.0146+-	2.4849	.62+-	.11	-2.8	
C4	PROPYL *	17.1481+-	1.7148	14.0023+-	2.0124	.82+-	.14	-1.2	
C5	N-C3 *	6.7101+-	.6710	6.5689+-	.7025	.98+-	.14	-.1	
C6	1BUTEN *	13.2186+-	1.3219	8.7616+-	1.2551	.66+-	.12	-2.4	
C7	N-C4 *	27.9549+-	2.7955	28.4294+-	2.1919	1.02+-	.13	.1	
C8	2M-C4 *	16.5379+-	1.6538	25.6243+-	2.3400	1.55+-	.21	3.2	
C9	N-C5 *	17.3126+-	1.7313	15.2024+-	1.2655	.88+-	.11	-1.0	
C10	CYC-C5 *	3.5925+-	1.7963	2.7770+-	.3843	.77+-	.40	-.4	
C11	2M-C5 *	23.0251+-	2.3025	19.3241+-	1.6175	.84+-	.11	-1.3	
C12	3M-C5 *	16.8112+-	1.6811	13.2655+-	1.0819	.79+-	.10	-1.8	
C13	N-C6 *	19.4671+-	1.9467	15.1025+-	1.1771	.78+-	.10	-1.9	
C14	MCYC-C *	15.2908+-	1.5291	13.7160+-	1.9114	.90+-	.15	-.6	
C15	BENZEN *	23.8264+-	2.3826	21.4497+-	2.2681	.90+-	.13	-.7	
C16	2M-C6 *	11.0536+-	1.1054	7.5574+-	1.3618	.68+-	.14	-2.0	
C17	3M-C6 *	13.1390+-	1.3139	8.7597+-	1.7623	.67+-	.15	-2.0	
C18	224TMC *	7.1638+-	.7164	5.1712+-	.7324	.72+-	.13	-1.9	
C19	N-C7 *	10.0612+-	1.0061	8.4524+-	1.5446	.84+-	.18	-.9	
C20	TOLUEN *	56.5546+-	5.6555	68.4881+-	6.8152	1.21+-	.17	1.3	
C21	DMCYCC *	1.7671+-	.8835	2.2248+-	1.0095	1.26+-	.85	.3	
C22	N-C8 *	4.5451+-	2.2725	5.1524+-	.8912	1.13+-	.60	.2	
C23	E-BENZ *	10.3717+-	1.0372	13.5778+-	1.9233	1.31+-	.23	1.5	
C24	M&P-XY *	33.6807+-	3.3681	44.2693+-	4.5801	1.31+-	.19	1.9	
C25	O-XYL *	14.4869+-	1.4487	18.9044+-	1.9311	1.30+-	.19	1.8	
C26	3E-TOL *	12.3908+-	1.2391	17.3982+-	1.5049	1.40+-	.19	2.6	
C27	4E-TOL *	2.3402+-	1.1701	4.0458+-	.5251	1.73+-	.89	1.3	
C28	N-C10 *	5.2561+-	.5256	3.5987+-	1.5970	.68+-	.31	-1.0	
C29	3IP-TO *	4.7388+-	2.3694	.0399+-	.0157	.01+-	.01	-2.0	
C30	4IP-TO *	5.6090+-	.5609	6.9025+-	.5764	1.23+-	.16	1.6	
C31	N-C11 *	3.8499+-	1.9250	3.0338+-	1.4484	.79+-	.54	-.3	
C32	N-C12 *	3.2901+-	1.6450	1.4630+-	.6959	.44+-	.31	-1.0	

SOURCE CONTRIBUTION ESTIMATES - SITE: RW-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .93 PERCENT MASS 97.5  
 CHI SQUARE 2.74 DF 27  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 1	COLDST97	386.1589	33.9417	11.3771
YES 4	WHLGAS97	127.1268	33.0654	3.8447
YES 44	RW-AMB	43.0157	20.4585	2.1026
YES 47	RW-CSPT	118.8116	34.2955	3.4644

MEASURED CONCENTRATION FOR SIZE: VOC  
 692.5+- 17.6

ELIGIBLE SPACE DIM. = 4 FOR MAX. UNC. = 138.4943 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

9.5554	23.8093	34.8938	44.3207
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NUMBER ESTIMABLE SOURCES = 4 FOR MIN. PROJ. = .95

PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE
1.0000 1	1.0000 4	1.0000 44	1.0000 47	

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: RW-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .93 PERCENT MASS 97.5  
 CHI SQUARE 2.74 DF 27

SPECIES	I	MEAS	CALC		RATIO C/M	RATIO R/U
C1	TOT	692.4714+-	17.6063	675.1130+-	22.7515	.97+- .04 -.6
C2	ETHYL *	55.2349+-	5.5235	43.3078+-	6.3146	.78+- .14 -1.4
C3	ACETYL *	44.5440+-	4.4544	25.3234+-	3.5423	.57+- .10 -3.4
C4	PROPYL *	26.5612+-	2.6561	21.5580+-	3.0411	.81+- .14 -1.2
C5	N-C3 *	6.1643+-	.6164	7.0548+-	1.7507	1.14+- .31 .5
C6	1BUTEN *	18.3394+-	1.8339	14.6689+-	1.9287	.80+- .13 -1.4
C7	N-C4 *	47.1858+-	4.7186	43.6520+-	3.7234	.93+- .12 -.6
C8	2M-C4 *	42.4288+-	4.2429	56.7153+-	4.1694	1.34+- .17 2.4
C9	N-C5 *	54.7959+-	5.4796	40.9655+-	3.1085	.75+- .09 -2.2
C10	CYC-C5 *	4.9353+-	2.4677	4.6811+-	.5767	.95+- .49 -.1
C11	2M-C5 *	29.9795+-	2.9979	26.6047+-	2.5093	.89+- .12 -.9
C12	3M-C5 *	19.9305+-	1.9931	17.3595+-	1.9137	.87+- .13 -.9
C13	N-C6 *	17.8565+-	1.7857	15.9798+-	1.8469	.89+- .14 -.7
C14	MCYC-C *	22.4846+-	2.2485	20.1610+-	2.2753	.90+- .14 -.7
C15	BENZEN *	39.2411+-	3.9241	34.2885+-	3.6742	.87+- .13 -.9
C16	2M-C6 *	6.9873+-	.6987	9.7753+-	1.1035	1.40+- .21 2.1
C17	3M-C6 *	16.9128+-	1.6913	11.7767+-	1.4666	.70+- .11 -2.3
C18	224TMC *	11.4782+-	1.1478	8.0159+-	.9001	.70+- .11 -2.4
C19	N-C7 *	12.3671+-	1.2367	10.7926+-	1.2073	.87+- .13 -.9
C20	TOLUEN *	90.0152+-	9.0015	103.8613+-	10.5297	1.15+- .16 1.0
C21	DMCYCC *	1.9121+-	.9561	1.2565+-	.3380	.66+- .37 -.6
C22	N-C8 *	6.9489+-	.6949	8.0196+-	1.1385	1.15+- .20 .8
C23	E-BENZ *	17.1872+-	1.7187	20.8497+-	2.6249	1.21+- .20 1.2
C24	M&P-XY *	54.7246+-	5.4725	66.9983+-	7.0815	1.22+- .18 1.4
C25	O-XYL *	22.3996+-	2.2400	28.0945+-	2.9632	1.25+- .18 1.5
C26	3E-TOL *	9.9612+-	.9961	17.0836+-	2.1070	1.72+- .27 3.1
C27	4E-TOL *	4.2303+-	2.1151	7.4438+-	.9062	1.76+- .91 1.4
C28	N-C10 *	1.5335+-	.7668	1.7071+-	.3304	1.11+- .60 .2
C29	3IP-TO *	1.4485+-	.7242	.3346+-	.0202	.23+- .12 -1.5
C30	4IP-TO *	3.1000+-	1.5500	5.7204+-	.7359	1.85+- .95 1.5
C31	N-C11 *	.9711+-	.4856	.9389+-	.2200	.97+- .53 -.1
C32	N-C12 *	.6118+-	.3059	.1239+-	.0183	.20+- .11 -1.6

SOURCE CONTRIBUTION ESTIMATES - SITE: KR-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .96 PERCENT MASS 94.6  
 CHI SQUARE 1.72 DF 28  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 5	COLDST99	107.1759	11.2254	9.5476
YES 7	WHLGAS99	31.9115	14.6279	2.1815
YES 52	KR-CSPT	534.5227	27.2445	19.6195

MEASURED CONCENTRATION FOR SIZE: VOC  
 712.2+- 22.1

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 142.4303 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

7.8627	13.9103	28.7564
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NUMBER ESTIMABLE SOURCES =	3 FOR MIN. PROJ. =	.95
PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE
1.0000 5	1.0000 7	1.0000 52

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: KR-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .96 PERCENT MASS 94.6  
 CHI SQUARE 1.72 DF 28

SPECIES	I	MEAS	CALC	RATIO C/M	RATIO R/U	
C1	TOT	712.1516+-	22.1426	673.6101+-	20.4169	.95+- .04 -1.3
C2	ETHYL *	22.1232+-	2.2123	25.7952+-	2.3348	1.17+- .16 1.1
C3	ACETYL *	16.1641+-	1.6164	8.6299+-	1.1293	.53+- .09 -3.8
C4	PROPYL *	11.9083+-	1.1908	13.2486+-	1.4480	1.11+- .16 .7
C5	N-C3 *	70.0386+-	7.0039	57.2015+-	5.1715	.82+- .11 -1.5
C6	1BUTEN *	7.8298+-	.7830	8.8137+-	.8986	1.13+- .16 .8
C7	N-C4 *	176.1292+-	17.6129	137.8899+-	13.1289	.78+- .11 -1.7
C8	2M-C4 *	34.4511+-	3.4451	33.1927+-	2.7050	.96+- .12 -.3
C9	N-C5 *	20.1152+-	2.0115	21.9291+-	1.7591	1.09+- .14 .7
C10	CYC-C5 *	3.0720+-	1.5360	3.4583+-	1.1597	1.13+- .68 .2
C11	2M-C5 *	16.1441+-	1.6144	15.8666+-	1.2575	.98+- .13 -.1
C12	3M-C5 *	10.0451+-	1.0045	10.4697+-	.8288	1.04+- .13 .3
C13	N-C6 *	12.5402+-	1.2540	11.5921+-	.9375	.92+- .12 -.6
C14	MCYC-C *	8.6964+-	.8696	8.8198+-	.7254	1.01+- .13 .1
C15	BENZEN *	14.3983+-	1.4398	14.7555+-	1.3042	1.02+- .14 .2
C16	2M-C6 *	5.5370+-	.5537	5.0911+-	1.5222	.92+- .29 -.3
C17	3M-C6 *	7.1155+-	.7115	6.4201+-	2.0832	.90+- .31 -.3
C18	224TMC *	4.4231+-	2.2116	4.0865+-	1.3990	.92+- .56 -.1
C19	N-C7 *	5.2124+-	.5212	5.8696+-	1.9466	1.13+- .39 .3
C20	TOLUEN *	45.7724+-	4.5772	49.9083+-	4.6229	1.09+- .15 .6
C21	DMCYCC *	11.3064+-	1.1306	13.9542+-	1.4561	1.23+- .18 1.4
C22	N-C8 *	3.3017+-	1.6509	3.8734+-	1.4704	1.17+- .74 .3
C23	E-BENZ *	11.2339+-	1.1234	11.3504+-	.9486	1.01+- .13 .1
C24	M&P-XY *	35.5725+-	3.5572	39.3689+-	3.3129	1.11+- .14 .8
C25	O-XYL *	15.0027+-	1.5003	15.5799+-	1.2640	1.04+- .13 .3
C26	3E-TOL *	25.2751+-	2.5275	16.4904+-	1.5391	.65+- .09 -3.0
C27	4E-TOL *	1.4036+-	.7018	1.1117+-	.0923	.79+- .40 -.4
C28	N-C10 *	31.2442+-	3.1244	30.6457+-	3.2003	.98+- .14 -.1
C29	3IP-TO *	12.4602+-	1.2460	8.8051+-	.9186	.71+- .10 -2.4
C30	4IP-TO *	31.8187+-	3.1819	46.0620+-	4.8348	1.45+- .21 2.5
C31	N-C11 *	36.8312+-	3.6831	36.5314+-	3.8192	.99+- .14 -.1
C32	N-C12 *	4.9851+-	2.4925	6.7990+-	.7072	1.36+- .70 .7



SOURCE CONTRIBUTION ESTIMATES - SITE: FA-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .97 PERCENT MASS 99.2  
 CHI SQUARE .61 DF 27  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 5	COLDST99	78.5867	7.7262	10.1714
YES 7	WHLGAS99	47.1523	13.7557	3.4278
YES 54	FA-AMB	28.1484	13.6876	2.0565
YES 57	FA-CSPT	101.6576	17.7641	5.7226

MEASURED CONCENTRATION FOR SIZE: VOC  
 257.5+- 9.3

ELIGIBLE SPACE DIM. = 4 FOR MAX. UNC. = 51.5045 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

4.9388 8.7549 15.4119 20.3289

NUMBER ESTIMABLE SOURCES = 4 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE  
 1.0000 5 1.0000 7 1.0000 54 1.0000 57

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: FA-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .97 PERCENT MASS 99.2  
 CHI SQUARE .61 DF 27

SPECIES	I	MEAS	CALC		RATIO C/M		R/U
C1	TOT	257.5227+-	9.3357	255.5450+-	11.0511	.99+- .06	-.1
C2	ETHYL *	18.2768+-	1.8277	16.9091+-	.9413	.93+- .11	-.7
C3	ACETYL *	12.9759+-	1.2976	8.6831+-	1.7654	.67+- .15	-2.0
C4	PROPYL *	8.5801+-	.8580	8.8855+-	.5108	1.04+- .12	.3
C5	N-C3 *	3.6765+-	1.8383	10.4188+-	1.6680	2.83+- 1.49	2.7
C6	1BUTEN *	5.3784+-	.5378	5.2267+-	1.0325	.97+- .22	-.1
C7	N-C4 *	28.6129+-	2.8613	26.5171+-	2.2938	.93+- .12	-.6
C8	2M-C4 *	41.8779+-	4.1878	38.3170+-	3.2923	.91+- .12	-.7
C9	N-C5 *	12.1720+-	1.2172	11.8910+-	2.0166	.98+- .19	-.1
C10	CYC-C5 *	2.1391+-	1.0696	2.3935+-	.4003	1.12+- .59	.2
C11	2M-C5 *	10.5688+-	1.0569	10.5191+-	1.4709	1.00+- .17	.0
C12	3M-C5 *	6.5679+-	.6568	6.5790+-	.9739	1.00+- .18	.0
C13	N-C6 *	7.0968+-	.7097	6.5966+-	1.1404	.93+- .19	-.4
C14	MCYC-C *	4.7132+-	2.3566	4.4710+-	.7345	.95+- .50	-.1
C15	BENZEN *	7.9689+-	.7969	8.6425+-	1.7634	1.08+- .25	.3
C16	2M-C6 *	4.1020+-	2.0510	3.6195+-	.6394	.88+- .47	-.2
C17	3M-C6 *	4.7249+-	2.3625	4.8494+-	.9698	1.03+- .55	.0
C18	224TMC *	2.9854+-	1.4927	2.9479+-	.5155	.99+- .52	.0
C19	N-C7 *	3.1453+-	1.5726	3.0379+-	.4441	.97+- .50	-.1
C20	TOLUEN *	21.5184+-	2.1518	20.1942+-	2.0299	.94+- .13	-.4
C21	DMCYCC *	2.7033+-	1.3517	3.1565+-	1.1351	1.17+- .72	.3
C22	N-C8 *	2.6093+-	1.3046	3.1786+-	.8354	1.22+- .69	.4
C23	E-BENZ *	4.5463+-	2.2731	5.1680+-	1.0020	1.14+- .61	.3
C24	M&P-XY *	14.6614+-	1.4661	16.4121+-	1.3053	1.12+- .14	.9
C25	O-XYL *	5.9097+-	.5910	7.4258+-	1.4862	1.26+- .28	.9
C26	3E-TOL *	3.8293+-	1.9147	5.2293+-	1.4759	1.37+- .78	.6
C27	4E-TOL *	1.4904+-	.7452	1.1285+-	.0669	.76+- .38	-.5
C28	N-C10 *	3.7964+-	1.8982	3.5952+-	1.5945	.95+- .63	-.1
C29	3IP-TO *	1.5350+-	.7675	1.8553+-	.7097	1.21+- .76	.3
C30	4IP-TO *	2.5435+-	1.2717	2.5473+-	1.2831	1.00+- .71	.0
C31	N-C11 *	5.4043+-	.5404	4.3230+-	2.1031	.80+- .40	-.5
C32	N-C12 *	1.4128+-	.7064	.8271+-	.3890	.59+- .40	-.7

SOURCE CONTRIBUTION ESTIMATES - SITE: HD2-CSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .93 PERCENT MASS 88.9  
 CHI SQUARE 4.15 DF 27  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 5	COLDST99	400.7162	24.9977	16.0301
YES 7	WHLGAS99	112.6932	24.9541	4.5160
YES 62	HD2-CSPT	423.3409	27.9028	15.1720

MEASURED CONCENTRATION FOR SIZE: VOC  
 1053.3+- 32.1

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 210.6555 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 13.0962 27.1818 33.4036  
 -----

NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

-----  
 1.0000 5 1.0000 7 1.0000 62  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: HD2-CSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .93 PERCENT MASS 88.9  
 CHI SQUARE 4.15 DF 27

SPECIES	I	MEAS	-----	-----	-----	-----	RATIO C/M	-----	RATIO R/U
C1	TOT	*****+-	32.1107	936.7502+-	24.8237	.89+-	.04	-2.9	
C2	ETHYL	*	67.1946+-	6.7195	82.1858+-	4.1157	1.22+-	.14	1.9
C3	ACETYL	*	43.9749+-	4.3975	25.1062+-	1.6107	.57+-	.07	-4.0
C4	PROPYL	*	33.7980+-	3.3798	40.8820+-	1.5492	1.21+-	.13	1.9
C5	N-C3	*	175.8944+-	17.5894	59.5618+-	3.2647	.34+-	.04	-6.5
C6	1BUTEN	*	26.0238+-	2.6024	13.1980+-	2.6479	.51+-	.11	-3.5
C7	N-C4	*	213.3763+-	21.3376	219.2979+-	19.1837	1.03+-	.14	.2
C8	2M-C4	*	50.7921+-	5.0792	40.7955+-	5.2125	.80+-	.13	-1.4
C9	N-C5	*	37.8162+-	3.7816	42.1430+-	3.5093	1.11+-	.15	.8
C10	CYC-C5	*	6.7349+-	.6735	6.6762+-	1.3379	.99+-	.22	.0
C11	2M-C5	*	46.1152+-	4.6115	41.9112+-	3.6337	.91+-	.12	-.7
C12	3M-C5	*	22.8441+-	2.2844	21.8950+-	2.0068	.96+-	.13	-.3
C13	N-C6	*	20.8375+-	2.0838	20.9353+-	1.8436	1.00+-	.13	.0
C14	MCYC-C	*	13.3463+-	1.3346	14.1840+-	1.3515	1.06+-	.15	.4
C15	BENZEN	*	28.9873+-	2.8987	28.3847+-	3.1834	.98+-	.15	-.1
C16	2M-C6	*	12.5385+-	1.2539	11.0754+-	.8331	.88+-	.11	-1.0
C17	3M-C6	*	14.2930+-	1.4293	13.0607+-	.9538	.91+-	.11	-.7
C18	224TMC	*	9.0759+-	.9076	7.4684+-	1.4315	.82+-	.18	-.9
C19	N-C7	*	10.6812+-	1.0681	11.3355+-	.8682	1.06+-	.13	.5
C20	TOLUEN	*	65.3372+-	6.5337	59.9241+-	4.6469	.92+-	.12	-.7
C21	DMCYCC	*	6.6114+-	.6611	6.2812+-	.6541	.95+-	.14	-.4
C22	N-C8	*	3.9771+-	1.9886	5.5244+-	1.0807	1.39+-	.75	.7
C23	E-BENZ	*	15.8828+-	1.5883	19.0562+-	1.4224	1.20+-	.15	1.5
C24	M&P-XY	*	50.2519+-	5.0252	58.7536+-	4.0483	1.17+-	.14	1.3
C25	O-XYL	*	20.9610+-	2.0961	25.3989+-	1.6315	1.21+-	.14	1.7
C26	3E-TOL	*	20.3590+-	2.0359	16.7141+-	1.3298	.82+-	.10	-1.5
C27	4E-TOL	*	4.3579+-	2.1789	7.4413+-	.5407	1.71+-	.86	1.4
C28	N-C10	*	8.1035+-	.8103	6.8901+-	.6963	.85+-	.12	-1.1
C29	3IP-TO	*	4.9393+-	2.4696	7.1219+-	.7601	1.44+-	.74	.8
C30	4IP-TO	*	10.4959+-	1.0496	7.0093+-	.7657	.67+-	.10	-2.7
C31	N-C11	*	7.6764+-	.7676	11.4357+-	1.1909	1.49+-	.22	2.7
C32	N-C12	*	.0000<	.0001	5.1035<	.5309	.00<	.00	9.6

SOURCE CONTRIBUTION ESTIMATES - SITE: HD1-CSH DATE: WINT98 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .91 PERCENT MASS 88.1  
 CHI SQUARE 2.82 DF 27  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 1	COLDST97	49.0345	5.8661	8.3590
YES 4	WHLGAS97	31.0599	4.6482	6.6821
YES 68	HD1ACSPT	8.0195	1.1724	6.8402

MEASURED CONCENTRATION FOR SIZE: VOC  
 100.0+- 3.8

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 20.0000 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

1.0777 2.4648 7.0820

NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95

PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE
1.0000 1	1.0000 4	1.0000 68		

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES

COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: HD1-CSH DATE: WINT98 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .91 PERCENT MASS 88.1  
 CHI SQUARE 2.82 DF 27

SPECIES	I	MEAS	---	CALC	---	RATIO C/M	---	RATIO R/U
C1	TOT	100.0000+-	3.8416	88.1139+-	3.4568	.88+-	.05	-2.3
C2	ETHYL *	11.3625+-	1.7044	5.4083+-	.7976	.48+-	.10	-3.2
C3	ACETYL *	7.9698+-	1.1955	3.0726+-	.4307	.39+-	.08	-3.9
C4	PROPYL *	6.0867+-	.9130	2.5434+-	.3745	.42+-	.09	-3.6
C5	N-C3 *	1.7589+-	.2638	1.5771+-	.1624	.90+-	.16	-6
C6	1BUTEN	.0000<	.0001	1.7125<	.1877	.00<	.00	9.1
C7	N-C4 *	5.8959+-	.8844	5.7915+-	.5820	.98+-	.18	-1
C8	2M-C4 *	5.9569+-	.8935	6.6371+-	.7108	1.11+-	.21	.6
C9	N-C5 *	3.4943+-	.5241	3.3839+-	.3551	.97+-	.18	-2
C10	CYC-C5 *	.6885+-	.1033	.6393+-	.0677	.93+-	.17	-4
C11	2M-C5 *	4.2215+-	.6332	3.9917+-	.4209	.95+-	.17	-3
C12	3M-C5 *	2.8071+-	.4211	2.5849+-	.2712	.92+-	.17	-4
C13	N-C6 *	2.4878+-	.3732	2.3092+-	.2407	.93+-	.17	-4
C14	MCYC-C *	3.0933+-	.4640	2.9892+-	.3122	.97+-	.18	-2
C15	BENZEN *	5.5310+-	.8297	4.1806+-	.4576	.76+-	.14	-1.4
C16	2M-C6 *	2.0810+-	.3122	1.4495+-	.1508	.70+-	.13	-1.8
C17	3M-C6 *	2.2894+-	.3434	1.5685+-	.1637	.69+-	.13	-1.9
C18	224TMC *	1.7144+-	.2572	1.2235+-	.1304	.71+-	.13	-1.7
C19	N-C7 *	1.7280+-	.2592	1.5635+-	.1623	.90+-	.17	-5
C20	TOLUEN *	13.2225+-	1.9834	14.0784+-	1.4017	1.06+-	.19	.4
C21	DMCYCC *	.1968+-	.0295	.1573+-	.0514	.80+-	.29	-7
C22	N-C8 *	.8626+-	.1294	.9662+-	.1010	1.12+-	.20	.6
C23	E-BENZ *	2.4699+-	.3705	2.8268+-	.2899	1.14+-	.21	.8
C24	M&P-XY *	7.6354+-	1.1453	8.8500+-	.9297	1.16+-	.21	.8
C25	O-XYL *	3.1018+-	.4653	3.7649+-	.3922	1.21+-	.22	1.1
C26	3E-TOL *	1.4626+-	.2194	2.3653+-	.2507	1.62+-	.30	2.7
C27	4E-TOL *	.6450+-	.0968	1.0415+-	.1237	1.61+-	.31	2.5
C28	N-C10 *	.3000+-	.0450	.2536+-	.0198	.85+-	.14	-9
C29	3IP-TO *	.1562+-	.0234	.1200+-	.0564	.77+-	.38	-6
C30	4IP-TO *	.5812+-	.0872	.8630+-	.0782	1.48+-	.26	2.4
C31	N-C11 *	.1497+-	.0225	.1354+-	.0477	.90+-	.35	-3
C32	N-C12 *	.0494+-	.0074	.0652+-	.0213	1.32+-	.47	.7

SOURCE CONTRIBUTION ESTIMATES - SITE: HD1-CSH DATE: WINT98 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .91 PERCENT MASS 87.8  
 CHI SQUARE 3.01 DF 27  
 B and L: No SRC ELIM: Yes  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 1	COLDST97	49.1084	5.7406	8.5546
YES 4	WHLGAS97	30.5446	4.5889	6.6562
YES 74	HD1BCSPT	8.1722	.9099	8.9818

MEASURED CONCENTRATION FOR SIZE: VOC  
 100.0+- 3.8

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 20.0000 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

.8491	2.4077	6.9514
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NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95

PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE	PROJ. SOURCE
1.0000 1	1.0000 4	1.0000 74		

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES

COEFF. SOURCE	COEFF. SOURCE	COEFF. SOURCE	COEFF. SOURCE	SCE	STD ERR
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SPECIES CONCENTRATIONS - SITE: HD1-CSH DATE: WINT98 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .91 PERCENT MASS 87.8  
 CHI SQUARE 3.01 DF 27

SPECIES	I	MEAS	CALC	RATIO C/M	RATIO R/U	
C1	TOT	100.0000+-	3.8416	87.8252+-	3.4284	.88+- .05 -2.4
C2	ETHYL *	11.3625+-	1.7044	5.4182+-	.7973	.48+- .10 -3.2
C3	ACETYL *	7.9698+-	1.1955	3.0808+-	.4319	.39+- .08 -3.8
C4	PROPYL *	6.0867+-	.9130	2.5482+-	.3742	.42+- .09 -3.6
C5	N-C3 *	1.7589+-	.2638	1.6047+-	.2313	.91+- .19 -4
C6	1BUTEN	.0000<	.0001	1.7067<	.1839	.00< .00 9.3
C7	N-C4 *	5.8959+-	.8844	5.7489+-	.5789	.98+- .18 -1
C8	2M-C4 *	5.9569+-	.8935	6.5755+-	.7024	1.10+- .20 .5
C9	N-C5 *	3.4943+-	.5241	3.3547+-	.3512	.96+- .18 -2
C10	CYC-C5 *	.6885+-	.1033	.6338+-	.0663	.92+- .17 -4
C11	2M-C5 *	4.2215+-	.6332	3.9587+-	.4138	.94+- .17 -3
C12	3M-C5 *	2.8071+-	.4211	2.5645+-	.2653	.91+- .17 -5
C13	N-C6 *	2.4878+-	.3732	2.2922+-	.2352	.92+- .17 -4
C14	MCYC-C *	3.0933+-	.4640	2.9668+-	.3076	.96+- .17 -2
C15	BENZEN *	5.5310+-	.8297	4.1700+-	.4577	.75+- .14 -1.4
C16	2M-C6 *	2.0810+-	.3122	1.4401+-	.1449	.69+- .13 -1.9
C17	3M-C6 *	2.2894+-	.3434	1.5587+-	.1555	.68+- .12 -1.9
C18	224TMC *	1.7144+-	.2572	1.2149+-	.1214	.71+- .13 -1.8
C19	N-C7 *	1.7280+-	.2592	1.5532+-	.1583	.90+- .16 -6
C20	TOLUEN *	13.2225+-	1.9834	14.0546+-	1.4106	1.06+- .19 .3
C21	DMCYCC *	.1968+-	.0295	.1589+-	.0166	.81+- .15 -1.1
C22	N-C8 *	.8626+-	.1294	.9612+-	.0972	1.11+- .20 .6
C23	E-BENZ *	2.4699+-	.3705	2.8221+-	.2913	1.14+- .21 .7
C24	M&P-XY *	7.6354+-	1.1453	8.8316+-	.9319	1.16+- .21 .8
C25	O-XYL *	3.1018+-	.4653	3.7571+-	.3933	1.21+- .22 1.1
C26	3E-TOL *	1.4626+-	.2194	2.3627+-	.2519	1.62+- .30 2.7
C27	4E-TOL *	.6450+-	.0968	1.0407+-	.1087	1.61+- .29 2.7
C28	N-C10 *	.3000+-	.0450	.2560+-	.0258	.85+- .15 -8
C29	3IP-TO *	.1562+-	.0234	.1221+-	.0175	.78+- .16 -1.2
C30	4IP-TO *	.5812+-	.0872	.8649+-	.0817	1.49+- .26 2.4
C31	N-C11 *	.1497+-	.0225	.1369+-	.0151	.91+- .17 -5
C32	N-C12 *	.0494+-	.0074	.0658+-	.0069	1.33+- .24 1.6

### Appendix C: JE-HSH Model Output with HOTST97

SOURCE CONTRIBUTION ESTIMATES - SITE: JE-HSH DATE: WINT99 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .94 PERCENT MASS 105.6  
 CHI SQUARE .45 DF 28  
 B and L: No SRC ELIM: No  
 WEIGHTS: CHLSQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)			
YES 2	HOTST97	-2.1780	13.9362	-.1563	
YES 3	EVAP97	25.8176	13.7683	1.8752	
YES 9	JE-HSPT	121.6321	12.7709	9.5241	

MEASURED CONCENTRATION FOR SIZE: VOC  
 137.6+- 7.5

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 27.5253 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

5.4846 13.6824 18.1547

NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE  
 1.0000 2 1.0000 3 1.0000 9

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: JE-HSH DATE: WINT99 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .94 PERCENT MASS 105.6  
 CHI SQUARE .45 DF 28

SPECIES	I	MEAS	-----	CALC	-----	RATIO C/M	-----	RATIO R/U
C1	TOT	137.6264+-	7.5005	145.2717+-	10.3245	1.06+-	.09	.6
C2	ETHYL *	3.9088+-	1.9544	5.3613+-	2.8152	1.37+-	.99	.4
C3	ACETYL *	1.5190+-	.7595	2.4968+-	1.2684	1.64+-	1.17	.7
C4	PROPYL *	.6899+-	.3450	1.4360+-	.7549	2.08+-	1.51	.9
C5	N-C3 *	5.3979+-	.5398	7.8441+-	3.7267	1.45+-	.71	.6
C6	1BUTEN *	4.2925+-	2.1463	2.7100+-	1.0174	.63+-	.39	-.7
C7	N-C4 *	7.3881+-	.7388	9.7466+-	3.1357	1.32+-	.44	.7
C8	2M-C4 *	3.7060+-	1.8530	5.5368+-	1.6565	1.49+-	.87	.7
C9	N-C5 *	3.2248+-	1.6124	3.9282+-	1.2140	1.22+-	.72	.3
C10	CYC-C5 *	1.0597+-	.5299	.6239+-	.0445	.59+-	.30	-.8
C11	2M-C5 *	3.0280+-	1.5140	2.5845+-	.8033	.85+-	.50	-.3
C12	3M-C5 *	2.5091+-	1.2545	2.4457+-	.9276	.97+-	.61	.0
C13	N-C6 *	2.6602+-	1.3301	2.3010+-	.7994	.86+-	.53	-.2
C14	MCYC-C *	1.8311+-	.9156	1.8335+-	.5348	1.00+-	.58	.0
C15	BENZEN *	3.0777+-	1.5389	5.5988+-	1.8261	1.82+-	1.09	1.1
C16	2M-C6 *	1.5607+-	.7804	1.3041+-	.5176	.84+-	.53	-.3
C17	3M-C6 *	2.5210+-	1.2605	2.4350+-	1.0852	.97+-	.65	-.1
C18	224TMC *	1.4772+-	.7386	1.2550+-	.5361	.85+-	.56	-.2
C19	N-C7 *	2.4932+-	1.2466	2.3650+-	1.0041	.95+-	.62	-.1
C20	TOLUEN *	21.0311+-	2.1031	17.6947+-	1.8257	.84+-	.12	-1.2
C21	DMCYCC *	4.7915+-	2.3958	4.2883+-	2.1616	.89+-	.64	-.2
C22	N-C8 *	11.5673+-	1.1567	9.1364+-	1.1285	.79+-	.13	-1.5
C23	E-BENZ *	2.5111+-	1.2555	2.7612+-	1.0487	1.10+-	.69	.2
C24	M&P-XY *	7.8712+-	.7871	9.0851+-	3.5778	1.15+-	.47	.3
C25	O-XYL *	2.9684+-	1.4842	3.5491+-	1.4254	1.20+-	.77	.3
C26	3E-TOL *	2.5489+-	1.2744	2.6689+-	1.2153	1.05+-	.71	.1
C27	4E-TOL *	1.1492+-	.5746	2.3644+-	1.1531	2.06+-	1.44	.9
C28	N-C10 *	2.6483+-	1.3241	3.2178+-	1.6257	1.22+-	.86	.3
C29	3IP-TO *	5.6087+-	.5609	3.6063+-	1.8165	.64+-	.33	-1.1
C30	4IP-TO *	2.7159+-	1.3579	2.3596+-	1.1744	.87+-	.61	-.2
C31	N-C11 *	16.8837+-	1.6884	19.8858+-	2.4938	1.18+-	.19	1.0
C32	N-C12 *	2.9863+-	1.4931	2.8474+-	1.4349	.95+-	.68	-.1

**Appendix D: Phase 1 HD-HSH and HD-CSH Model Output using CMB7 and CMB8**

SOURCE CONTRIBUTION ESTIMATES - SITE: HD1-HSH DATE: WINT98 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .93 PERCENT MASS 98.8  
 CHI SQUARE 2.22 DF 28  
 B and L: No SRC ELIM: No  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE EST CODE	NAME	SCE(ng/L)		
YES 3	EVAP97	69.3505	4.9566	13.9917
YES 70	HD1BHBSB	18.6503	6.7717	2.7542
YES 71	HD1BHSPT	10.7906	3.6585	2.9494

MEASURED CONCENTRATION FOR SIZE: VOC  
 100.0+- 4.5

ELIGIBLE SPACE DIM. = 3 FOR MAX. UNC. = 20.0000 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

1.2147 4.0234 8.1330

NUMBER ESTIMABLE SOURCES = 3 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE

1.0000 3 1.0000 70 1.0000 71

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR

SPECIES CONCENTRATIONS - SITE: HD1-HSH DATE: WINT98 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .93 PERCENT MASS 98.8  
 CHI SQUARE 2.22 DF 28

SPECIES	I	MEAS	MEAS	CALC	CALC	RATIO C/M	RATIO R/U
C1	TOT	100.0000+-	4.5284	98.7914+-	3.8595	.99+- .06	-.2
C2	ETHYL *	.8014+-	.1202	.7372+-	.0672	.92+- .16	-.5
C3	ACETYL *	.4303+-	.0645	.4581+-	.0439	1.06+- .19	.4
C4	PROPYL *	.5839+-	.0876	.3905+-	.0380	.67+- .12	-2.0
C5	N-C3 *	1.4678+-	.2202	2.0678+-	.2149	1.41+- .26	1.9
C6	1BUTEN *	2.4147+-	.3622	2.5465+-	.3200	1.05+- .21	.3
C7	N-C4 *	13.9697+-	2.0955	12.7299+-	1.5387	.91+- .18	-.5
C8	2M-C4 *	7.3074+-	1.0961	7.7215+-	.9927	1.06+- .21	.3
C9	N-C5 *	5.1974+-	.7796	5.1230+-	.6613	.99+- .20	-.1
C10	CYC-C5 *	.8839+-	.1326	.9092+-	.1161	1.03+- .20	.1
C11	2M-C5 *	4.0240+-	.6036	3.6200+-	.4463	.90+- .17	-.5
C12	3M-C5 *	2.3891+-	.3584	2.2130+-	.2714	.93+- .18	-.4
C13	N-C6 *	2.7685+-	.4153	2.4564+-	.3143	.89+- .17	-.6
C14	MCYC-C *	2.6417+-	.3963	2.6704+-	.3463	1.01+- .20	.1
C15	BENZEN *	5.3211+-	.7982	6.8608+-	.8902	1.29+- .26	1.3
C16	2M-C6 *	1.4408+-	.2161	1.1006+-	.1283	.76+- .15	-1.4
C17	3M-C6 *	1.6176+-	.2426	1.1970+-	.1342	.74+- .14	-1.5
C18	224TMC *	1.0002+-	.1500	.8480+-	.0918	.85+- .16	-.9
C19	N-C7 *	1.4019+-	.2103	1.3585+-	.1677	.97+- .19	-.2
C20	TOLUEN *	20.8116+-	3.1217	22.6395+-	2.2739	1.09+- .20	.5
C21	DMCYCC *	.3111+-	.0467	.4044+-	.0389	1.30+- .23	1.5
C22	N-C8 *	.4939+-	.0741	.5712+-	.0663	1.16+- .22	.8
C23	E-BENZ *	3.2712+-	.4907	2.9959+-	.3254	.92+- .17	-.5
C24	M&P-XY *	9.2503+-	1.3875	8.7985+-	.9461	.95+- .18	-.3
C25	O-XYL *	3.9073+-	.5861	3.4580+-	.3572	.89+- .16	-.7
C26	3E-TOL *	1.8729+-	.2809	1.6831+-	.1547	.90+- .16	-.6
C27	4E-TOL *	1.7782+-	.2667	.7259+-	.0631	.41+- .07	-3.8
C28	N-C10 *	.7775+-	.1166	.4242+-	.0467	.55+- .10	-2.8
C29	3IP-TO *	.4717+-	.0707	.3165+-	.0295	.67+- .12	-2.0
C30	4IP-TO *	.8273+-	.1241	1.2069+-	.1154	1.46+- .26	2.2
C31	N-C11 *	.4255+-	.0638	.3349+-	.0320	.79+- .14	-1.3
C32	N-C12 *	.1399+-	.0210	.2238+-	.0198	1.60+- .28	2.9



SOURCE CONTRIBUTION ESTIMATES - SITE: HD1-CSH DATE: WINT98 CMB8 (97350)  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .90 PERCENT MASS 94.5  
 CHI SQUARE 3.52 DF 26  
 B and L: No SRC ELIM: No  
 WEIGHTS: CHISQR 1.000 R SQR 1.000 PCMASS 1.000 FRCEST 1.000

SOURCE  
 EST CODE NAME SCE(ng/L  
 -----  
 YES 1 COLDST97 63.9810 5.3034 12.0642  
 YES 3 EVAP97 21.4624 4.5240 4.7441  
 YES 73 HD1BCSB 3.4578 1.5504 2.2303  
 YES 74 HD1BCSPT 5.5988 1.1656 4.8035  
 -----

MEASURED CONCENTRATION FOR SIZE: VOC  
 100.0+- 3.8

ELIGIBLE SPACE DIM. = 4 FOR MAX. UNC. = 20.0000 (20.% OF TOTAL MEAS. MASS)

1 / SINGULAR VALUE

-----  
 .7066 1.6835 2.8178 6.4095  
 -----

NUMBER ESTIMABLE SOURCES = 4 FOR MIN. PROJ. = .95  
 PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE PROJ. SOURCE  
 -----  
 1.0000 1 1.0000 3 1.0000 73 1.0000 74  
 -----

ESTIMABLE LINEAR COMBINATIONS OF INESTIMABLE SOURCES  
 COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE COEFF. SOURCE SCE STD ERR  
 -----

SPECIES CONCENTRATIONS - SITE: HD1-CSH DATE: WINT98 CMB 8.0  
 SAMPLE DURATION 1 START HOUR 1 SIZE: VOC  
 R SQUARE .90 PERCENT MASS 94.5  
 CHI SQUARE 3.52 DF 26

SPECIES-----I---MEAS-----CALC-----RATIO C/M-----RATIO R/U  
 C1 TOT 100.0000+- 3.8416 94.5001+- 3.6964 .95+- .05 -1.0  
 C2 ETHYL \* 11.3625+- 1.7044 7.2695+- 1.0392 .64+- .13 -2.1  
 C3 ACETYL \* 7.9698+- 1.1955 4.0793+- .5622 .51+- .10 -2.9  
 C4 PROPYL \* 6.0867+- .9130 3.4637+- .4880 .57+- .12 -2.5  
 C5 N-C3 \* 1.7589+- .2638 1.6476+- .1719 .94+- .17 -.4  
 C6 1BUTEN .0000< .0001 2.2560< .2375 .00< .00 9.5  
 C7 N-C4 \* 5.8959+- .8844 6.1648+- .5769 1.05+- .18 .3  
 C8 2M-C4 \* 5.9569+- .8935 5.3254+- .5374 .89+- .16 -.6  
 C9 N-C5 \* 3.4943+- .5241 3.1416+- .3112 .90+- .16 -.6  
 C10 CYC-C5 \* .6885+- .1033 .6225+- .0607 .90+- .16 -.6  
 C11 2M-C5 \* 4.2215+- .6332 3.2711+- .3487 .77+- .14 -1.3  
 C12 3M-C5 \* 2.8071+- .4211 2.0432+- .2249 .73+- .14 -1.6  
 C13 N-C6 \* 2.4878+- .3732 2.0823+- .2207 .84+- .15 -.9  
 C14 MCYC-C \* 3.0933+- .4640 2.5744+- .2865 .83+- .16 -1.0  
 C15 BENZEN \* 5.5310+- .8297 5.8604+- .6181 1.06+- .19 .3  
 C16 2M-C6 \* 2.0810+- .3122 1.2087+- .1341 .58+- .11 -2.6  
 C17 3M-C6 \* 2.2894+- .3434 1.3533+- .1446 .59+- .11 -2.5  
 C18 224TMC \* 1.7144+- .2572 .9076+- .0958 .53+- .10 -2.9  
 C19 N-C7 \* 1.7280+- .2592 1.3917+- .1544 .81+- .15 -1.1  
 C20 TOLUEN \* 13.2225+- 1.9834 16.4305+- 1.7499 1.24+- .23 1.2  
 C21 DMCYCC \* .1968+- .0295 .1693+- .0141 .86+- .15 -.8  
 C22 N-C8 \* .8626+- .1294 .8654+- .1014 1.00+- .19 .0  
 C23 E-BENZ \* 2.4699+- .3705 3.2222+- .3585 1.30+- .24 1.5  
 C24 M&P-XY \* 7.6354+- 1.1453 9.9376+- 1.1461 1.30+- .25 1.4  
 C25 O-XYL \* 3.1018+- .4653 4.1113+- .4782 1.33+- .25 1.5  
 C26 3E-TOL \* 1.4626+- .2194 2.5019+- .3095 1.71+- .33 2.7  
 C27 4E-TOL \* .6450+- .0968 1.2122+- .1346 1.88+- .35 3.4  
 C28 N-C10 \* .3000+- .0450 .2192+- .0206 .73+- .13 -1.6  
 C29 3IP-TO \* .1562+- .0234 .1672+- .0153 1.07+- .19 .4  
 C30 4IP-TO \* .5812+- .0872 .8288+- .0939 1.43+- .27 1.9  
 C31 N-C11 \* .1497+- .0225 .1024+- .0107 .68+- .13 -1.9  
 C32 N-C12 \* .0494+- .0074 .0689+- .0064 1.40+- .25 2.0  
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